Appendix B: Biological Resources

B-1 Burrowing Owl Surveys, Special Status Plant Surveys, Mammal Habitat Assessments, and Delhi Sands Flower-loving Fly Surveys

B-2 Delineation of Jurisdictional Waters

B-1 Burrowing Owl Surveys, Special Status Plant Surveys, Mammal Habitat Assessments, and Delhi Sands Flower-loving Fly Surveys

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An Environmental Planning/Resource Management Corporation

August 24, 2005

Mr. Aaron Pfannenstiel
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VIA FACSIMILE AND MAIL
(909) 484-9161

Subject: Results of Western Burrowing Owl Surveys for the Approximately 500-Acre Rich Haven Specific Plan Project Site, San Bernardino County, California

Dear Mr. Pfannenstiel:

This letter report presents the results of focused surveys for the western burrowing owl (*Athene cunicularia*) on the approximately 500-acre Rich Haven Specific Plan project site in the City of Ontario, San Bernardino County (hereafter referred to as the project site). The purpose of the survey was to determine the presence or absence of the western burrowing owl on the project site.

Project Location and Description

The project site is located within the City of Ontario southwest of the junction of State Highway 60 and Interstate 15) near the border between San Bernardino and Riverside counties (Exhibit 1). The project site is located immediately south of Riverside Drive and west of Haven Avenue (Exhibits 2 and 3). The southeastern corner of the project site is bounded by Edison Avenue to the south and Hamner Avenue to the east. Hamner Avenue also defines the boundary between San Bernardino and Riverside counties in this area, with industrial development on the east side of Hamner within Riverside County. The edge of a large Southern California Edison Company (SCE) electrical station forms a portion of the eastern project site boundary, while a high school forms a portion of the boundary near the project site's northeastern corner. The remainder of the project site's boundary follows un-named dirt roads or crosses open land. Elevations on the project site range from approximately 720 feet above mean sea level (msl) to approximately 790 feet above msl. The project site is located on the Guasti and Corona North, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle, within Township 2S, Range 7W, and includes the northwestern and southwestern quarters of Section 12, and the northeastern and northwestern quarters of Section 13. Dense residential development is located north of the project site boundary, beyond Riverside Drive. Land surrounding the remainder of the project site includes a patchwork of functioning and abandoned dairies, as well as active and fallow (uncultivated) agricultural land.

At the northern boundary is an operational dairy and south of this dairy are active agricultural fields and an abandoned dairy. There is an operational hog farm in the center of the project site and southeast of this hog farm is an active agricultural field and dairy and an abandoned dairy.

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General Background

The western burrowing owl is a grassland specialist distributed throughout western North America, where it occupies open areas with short vegetation and bare ground within shrub, desert, and grassland environments. Burrowing owls use a wide variety of arid and semi-arid environments, with level to gently-sloping areas characterized by sparse vegetation and bare ground (Haug et al. 1993, Dechant et al. 1999). Burrowing owls in Florida excavate their own burrows, but western burrowing owls are dependant upon the presence of burrowing mammals, such as ground squirrels, whose burrows are used for roosting and nesting (Haug et al. 1993). The presence or absence of colonial mammal burrows is often a major factor that limits the presence or absence of burrowing owls. Where mammal burrows are scarce, burrowing owls have been found occupying man-made cavities, such as buried and non-functioning drain pipes, stand-pipes, and dry culverts. Burrowing mammals may burrow beneath rocks, debris, or large, heavy objects such as abandoned cars, concrete blocks, or concrete pads. Large, hard objects at burrow entrances stabilize the entrance from collapse, and may inhibit excavation by predators.

Burrowing owls often use "satellite," or non-nesting, burrows moving chicks into them from the nesting burrow, presumably to reduce the risk of predation (Desmond and Savidge 1998) and possibly to avoid nest parasites (Dechant et al. 1999). One pair may use up to ten satellite burrows (James and Seabloom 1968). Individual burrowing owls have a moderate to high site fidelity to previously-used burrow complexes, often using the same burrows for nesting year after year.

The western burrowing owl was once abundant and widely distributed within coastal southern California, but it has declined suddenly in Los Angeles, Orange, San Diego, Riverside, and San Bernardino counties. A recent petition to list the California population of the western burrowing owl as an Endangered or Threatened species (Center for Biological Diversity 2003) reported that 56+ owl pairs remained in Chino, and 40+ pairs remained in Ontario (J. Bath pers. comm., 2003 *in* Center for Biological Diversity 2003). The California Department of Fish and Game (CDFG) declined to list the burrowing owl as either Threatened or Endangered.

Local Background

Current and historic land uses on the project site are important in understanding the use of the project site by the burrowing owl. The project site is covered by both active and abandoned dairy land, nursery land, and agricultural land that was fallow during the current surveys. In the vicinity of the project site, burrowing owls may be found occupying any of the above areas. Dairies in the vicinity of the project site are often similar in layout; this common layout is important in understanding burrowing owl occupation of the project site. Common components of Ontario dairies in the vicinity of the project site are dirt-floored cattle pens separated by concrete roads up to 1,000 feet long. Feed troughs line the concrete roads, and specially-designed trucks fill the troughs with feed on a regular basis. Dairies produce a considerable amount of waste, and this liquid is pumped into a series of open-air evaporation or settling ponds that are separated by earthen dikes. As settling ponds dry out over long periods, the earth and solids are excavated with heavy equipment and piled near the ponds, creating mounds.

The California ground squirrel (*Spermophilus beecheyi*) excavates burrows beneath concrete roads and watering troughs, into the banks and slopes of settling ponds, and into the earthen dikes and mounds mentioned above. The ground squirrels are supported by livestock feed, and they also forage within the fallow and active agricultural fields that can be adjacent to the dairies. Dairy owners have been attempting to eradicate California ground squirrels from their land for decades; however, the abundance of livestock feed available to the ground squirrel makes eradication through poisoning programs difficult. Although burrowing owls may use man-made cavities (such as abandoned pipes) for year-round shelter and nesting, the burrowing owl in the vicinity of the project

site generally relies upon abandoned California ground squirrel burrows. Therefore, the presence of the burrowing owl is closely tied to the presence of the California ground squirrel in the vicinity of the project site.

Dairies in the vicinity of the project site are gradually being converted to development. While the dairies are operational, there can be areas within the dairies where human and livestock activity is relatively low, and these areas may be occupied by the burrowing owl. Once a dairy is abandoned, the land experiences a fallow interval, when the long concrete pads separating cattle pens remain on site before grading for development begins. A concrete pad 1,000 feet long has 2,000 feet of edge, beneath which the California ground squirrel can excavate burrows that may be used by the burrowing owl. Burrowing owls can perch on the concrete above the burrow and see potential predators approaching from a great distance. With livestock disturbance gone and human disturbance restricted to the occasional trespasser, the abandoned concrete pads, watering troughs, banks and slopes of settling ponds, and mounds become excellent locations for burrow sites for both the California ground squirrel and the burrowing owl.

In addition to the operational and abandoned dairy land, other potential burrowing owl burrow sites include the berms of dirt roads between agricultural fields, trash or debris piles, and mounds within fallow agricultural fields supporting low density vegetation. Burrowing owls may forage for insects, lizards, and mice within any portion of the project site.

Survey Methodology

Under the current regulatory atmosphere, the CDFG and the U.S. Fish and Wildlife Service (USFWS) are primarily concerned with any disturbance to burrows used by the burrowing owl. Therefore, survey methodologies must include a determination of the presence or absence of burrows on site. For planning purposes, burrows that appear inactive during the surveys may become active during the permitting process, or up to the initiation of project grading. This may be especially true within the region of Ontario and Chino, where the increase or decrease of human activity on separate parcels probably alters the distribution of burrowing owls in the area. The USFWS Environmental Services branch, USFWS Law Enforcement branch, the CDFG, and other regional agencies (such as the County of Riverside) are reported to be heavily involved (at the present time) with discussions on policy issues regarding the burrowing owl.

Neither the CDFG or USFWS have officially adopted a specific protocol for conducting presence/ absence surveys for the western burrowing owl; however, reference is frequently made to the Burrowing Owl Survey Protocol and Mitigation Guidelines prepared by the California Burrowing Owl Consortium (CBOC) (CBOC 1993). This unofficial protocol details a sequence of surveys that are separated into a habitat assessment, burrow survey, and crepuscular (dawn or dusk) surveys. In addition, preconstruction surveys may also be required if suitable habitat for the burrowing owl is present. While the protocol recommends conducting winter surveys if no burrowing owls are detected during breeding season surveys, surveys conducted during the winter could detect migrant owls that have little regulatory protection. Only surveys conducted during the breeding season would restrict owl detections to the resident owls and their burrows that are afforded protection by the resource regulatory agencies.

The survey progression begins with a habitat assessment to determine whether or not habitat potentially supporting the burrowing owl exists on the project site. If suitable habitat is present, a survey for burrow sites (both natural and artificial) is conducted that includes the entire project site and, if possible, out to 500 feet from the project site boundaries. Private property issues may restrict surveys to the project site boundaries and owls that can be observed without entering offsite areas. If the project site is located within an area known or expected to support the burrowing owl, and it can be assumed that suitable habitat is present, the habitat assessment for the burrowing owl can

be skipped, and a burrow survey is conducted. However, burrowing owl habitat assessments can be valuable for collecting information that can be used for planning, prior to conducting burrow and crepuscular surveys.

The burrow survey is very important because it allows the investigator to locate potential burrow sites, find cast pellets below perches, or locate areas where perches are covered with whitewash before crepuscular surveys begin. Conducting a burrow survey allows an investigator to formulate a methodology specific to the site being inspected that allows for careful and repeated inspection of areas of potential owl activity during the crepuscular surveys. During the burrow survey, any conclusive evidence of owl occupation is described, mapped, and the location of the evidence is collected using a global positioning system (GPS) unit. It is important to conduct burrow surveys separately from crepuscular surveys because searching for burrows requires eye contact with the ground, while the crepuscular (owl) surveys require the observer to scan all habitats for owls from a few feet away to several hundred feet away. On the same site during the same survey, one owl may dart into a burrow upon sighting an observer several hundred feet away, while another owl may remain hidden and motionless and fly up only a few feet ahead of the observer. In addition, a burrow survey can be conducted any time during the day, while the crepuscular survey is conducted during the time when burrowing owls are expected to be the most visible.

If potentially-occupied burrows or owls are located during the burrow survey, then crepuscular site visits (covering no more than 100 acres per day) are recommended to be conducted on separate days during the breeding season, which extends from February 28 through August 31. It is preferred that the surveys be conducted between April 15 and July 15, as this period represents the peak of the breeding season; it is currently acceptable to survey outside of this peak period so long as all surveys are conducted within the breeding season.

Burrowing owls behave differently depending on their nesting stage, and their probability of detection varies with their behavior. Broadcasting taped burrowing owl calls has been reported to greatly increase the probability of detection of territorial male burrowing owls (Conway and Simon 2003, Haug and Didiuk 1993, Moulton et al. 2004). However, call broadcast is reported to be most effective during the early stages of the breeding season (Conway and Simon 2003, Haug and Didiuk 1993) and becomes less effective during the juvenile dispersal period. The current surveys were initiated after the incubation period when call broadcast would have been ineffective; however, many territorial male burrowing owls stand guard throughout the day near nest burrow entrances and are often readily visible (Conway and Simon 2003, Haug and Didiuk 1993). At this stage, some male burrowing owls may utter warning calls at the approach of a surveyor, which assists the surveyor in locating the burrow. At the time of the surveys, burrowing owl females and nestlings are often observed immediately outside of burrows, and the burrow entrances usually offer evidence of occupation in the form of whitewash, cast pellets, and feathers. Late in the breeding season, burrow entrances often offer a great deal of evidence of occupation, because the material accumulated over the course of the breeding season has not been washed away by winter rains.

The Ontario area is considered to be an area where burrowing owls can be abundant, and previous biological surveys had documented burrowing owls in the vicinity of the project site (EIP 1999), Consulting Biologist Michael C. Couffer therefore skipped a burrowing owl habitat assessment, and conducted burrow surveys and crepuscular surveys within all potentially-occupied areas on the project site. Mr. Couffer was assisted on three of the crepuscular surveys by Consulting Biologist Travis Cooper. Portions of the hog farm, as well as portions of active dairies that were covered by unbroken concrete or supported dense livestock, were not surveyed during the crepuscular survey visits as these areas did not support habitat for the burrowing owl. In addition, areas of dense vegetation, including some of the agricultural fields, were not surveyed during the crepuscular surveys. Any natural or man-made cavities large enough to allow entry to a burrowing owl were

inspected for evidence of occupation. Binoculars were used to inspect potential owl burrows and perches for the presence of owls.

The CBOC protocol (CBOC 1993) recommends that crepuscular surveys begin at least two hours before sunset and continue until an hour after sunset, or begin one hour before sunrise and continue for at least two hours after sunrise. The terms "sunset" and "sunrise" are imprecise and are interpreted differently by different biologists. Mr. Couffer surveyed only when there was enough light that the flights of burrowing owls could be followed. Surveys conducted before sunrise or after sunset may underestimate the number of nesting owls because at these times male owls may be foraging away from the nest burrows (Haug and Didiuk 1993). In addition, surveys after dark would increase the possibility of counting the same owl more than once. Where onsite occupancy is expected or confirmed, the primary task is to attempt to define which burrows are occupied; therefore, surveys were conducted only during those periods when owl movement could be followed by an observer.

Based on site observations made during the survey, most of the surveys were conducted at the beginning of the juvenile dispersal period for owls in the Ontario area. The project site encompassed approximately 500 acres, only portions of which were considered to be potential habitat. All potential habitat was inspected four times during crepuscular surveys. Surveys were conducted under environmental conditions that were appropriate for locating burrowing owls. Burrow surveys were conducted on June 30, July 1, and 3, 2005. The project site was large enough that it was possible to conduct two crepuscular survey visits per day. Morning surveys began at approximately 5:15 a.m. and extended to at least 8:30 a.m. Evening surveys began at or before 5:00 p.m. and extended to approximately 8:15 p.m. Crepuscular surveys were conducted by Mr. Couffer and Mr. Cooper. Mr. Couffer conducted morning crepuscular survey visits on July 2, 3, 4, 5, 27, and 28, 2005. His evening crepuscular survey visits were conducted on July 2, 3, 4, 26, and 27, 2005. Mr. Cooper conducted a morning crepuscular survey visit on July 3, 2005, and evening crepuscular survey visits on June 30 and July 1, 2005.

Survey Results

Five burrows, either currently or historically occupied by the burrowing owl, were located on the project site during the current surveys (Exhibit 3). Six adult and four juvenile burrowing owls were observed during the surveys. Exhibit 3 is an aerial photograph, taken in February of 2004, on which all burrows exhibiting conclusive evidence of current or historic occupation by the burrowing owl are shown. Each of these burrows, and the evidence supporting occupation, are described separately below. Each burrow has been characterized as an Active Nest Burrow, Satellite Burrow, or Inactive/Historic Burrow based on the presence or absence of owls around the burrow, the behavior of owls, and/or evidence found at the burrow entrance. Burrows not found to be active during the survey have the potential to become active in the future.

Active Nest Burrow:	Burrow showed strong or conclusive evidence of supporting an active nest. One or more adults were regularly observed at or near burrow entrance. The male was observed guarding the burrow. Adult(s) behaved in a protective fashion at the approach of an observer. Juveniles were observed at or immediately adjacent to the burrow entrance.
Satellite Burrow:	Active during the survey. Adult(s) were observed to fly between this and Active Nest Burrow. Adults moved chicks into burrow from adjacent burrow that went inactive.

Inactive or Historic Burrow:	Evidence of owl occupation observed. No conclusive evidence indicated current or historic nesting. No owls were observed to enter the burrow. Cobwebs remained across burrow entrance during survey.

Burrow No. 1

Burrow No. 1 was an Active Nest Burrow located on the manufactured slope of a single large settling pond used by the operational dairy in the northwestern corner of the project site. Two adults were observed on the slope adjacent to the burrow; a juvenile appeared at the entrance to the burrow and quickly disappeared back inside.

Burrow No. 2

Burrow No. 2 was an Active Nest Burrow located on the eroded bank in the southeastern corner of a large round settling pond near the approximate center of the project site. This pond was used by a dairy immediately to the west of the pond that has been abandoned since the aerial photograph presented in Exhibit 3 was shot. A pair of burrowing owls and two juveniles that were able to fly were observed at this location during the initial burrow survey on June 30, 2005, and during nearly all crepuscular surveys that included this portion of the project site thereafter. This pair was very active and vocal around the pond during the surveys, always uttering alarm calls at the approach of an observer. A crepuscular survey visit covering the portion of the project site surrounding the pond on July 27, 2005, failed to locate the owls. Piles of earth that had been located immediately east of the pond were found to have been moved and leveled by heavy equipment prior to the final survey visit; this activity appears to have disrupted the owls.

Burrow No. 3

Evidence points to Burrow No. 3 functioning as a Satellite Burrow used by the pair occupying Burrow No. 2, as the adults and juveniles occupying Burrow No. 2 would often flush to this adjacent burrow. This burrow was on the bank at the northeastern corner of the pond. This burrow had a small amount of debris and whitewash at the entrance, as well as a pellet, but did not have the large amount of evidence of recent use that had accumulated at the entrance to Burrow No. 2. No owls were observed entering this burrow.

Burrow No. 4

Burrow No. 4 was located within the abandoned Koetsier and Son Dairy at the southeastern corner of the project site. This dairy was abandoned before the aerial photograph presented in Exhibit 3 was taken in February of 2004. The burrow was located near the base of a large, solitary mound of earth within otherwise flat terrain between the dairy's livestock pens and their main settling ponds. Although no juveniles were observed during the time of the surveys, this burrow is being characterized as an Active Nest Burrow. An adult was observed on the mound during the burrow survey, and on all crepuscular surveys that covered the area except for the final visit. The adults observed during the surveys were always silent during the approach of an observer.

Burrow No. 5

Burrow No. 5 was located within the southeastern abandoned Koetsier and Son Dairy described above. The burrow was located beneath broken concrete that once encased metal posts supporting livestock pen fencing. As cobwebs covered the burrow entrance during the entire survey period, this burrow is being characterized as an Inactive or Historic Burrow. A burrowing owl was observed immediately adjacent to this burrow only once during the beginning of the survey period. It is not known whether this owl was one of the birds occupying Burrow No. 4 or a different owl altogether.

With regard to Burrow Nos. 4 and 5, Mr. Couffer arrived at the southeastern abandoned Koetsier and Son Dairy on July 26, 2005, prior to the final crepuscular survey covering that portion of the project site to find that heavy equipment had been demolishing the dairy. A track loader had been well into the process of tearing up a limited amount of concrete and leveling all of the dairy's structures. The track loader had come within 60 feet of Inactive or Historic Burrow No. 5, which still had cobwebs across the burrow entrance indicating that it was inactive. Although the machine had not damaged the mound on which Active Nest Burrow No. 4 was located, the loader had flattened an abandoned car 70 feet from the mound supporting the burrow. Two different cars had also driven within 33 feet of the mound.

Prior to this date, one or two owls had been observed on the mound at Burrow No. 4 on every visit. After the demolition activity had begun, no owls were observed on the mound or in the surrounding areas. During the final crepuscular survey visit that covered the vicinity of the mound, the observer stayed several hundred feet away from the mound in order to limit disturbance and give the owls a chance to appear during the time of day when owl activity is usually high. Using binoculars, Mr. Couffer did not observe any owls. The following day, Mr. Couffer used binoculars to observe the mound during the morning crepuscular survey on an adjacent portion of the site, but again no owls were observed. That evening, a brief visit was made to the mound to see if the owls had returned; no owls were observed. The conclusion drawn from this is that the demolition activities appear to have caused the owls to abandon the mound burrow for at least two days. Whether nestlings or juveniles were affected by this disturbance is unknown, and it is unknown whether or not the adults returned.

Conclusion

The lands within Ontario and Chino, including the project site, form a landscape where dairies are abandoned and agricultural fields alternate between bare ground, lush agriculture, and dense, weedy vegetation. Levels of human and livestock activity may change, along with the distribution of the California ground squirrel. For these reasons, use of the project site by burrowing owls may change over time, with other owls entering and occupying the project site or leaving for offsite areas. The owl burrows located during the current survey should not be considered to be the only burrows expected on site and the locations of active burrows are expected to change.

Portions of the project site currently provide areas of excellent habitat for resident burrowing owls. Coordination with the resource regulatory agencies, including the CDFG and USFWS, would be recommended prior to disturbance for development. As mentioned above, the resource agencies are currently involved with discussions on policy issues regarding the burrowing owl, including mitigation options. It is unknown when these issues will be resolved.

Please feel free to contact me at (714) 444-9199 if you have any questions or comments.

Sincerely,

BONTERRA CONSULTING

Stacie A. Tennant
Senior Project Manager, Biological Services

Attachments: Exhibits 1, 2, and 3

cc: Timothy Higdon, RBF Consulting
Michael Couffer

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References

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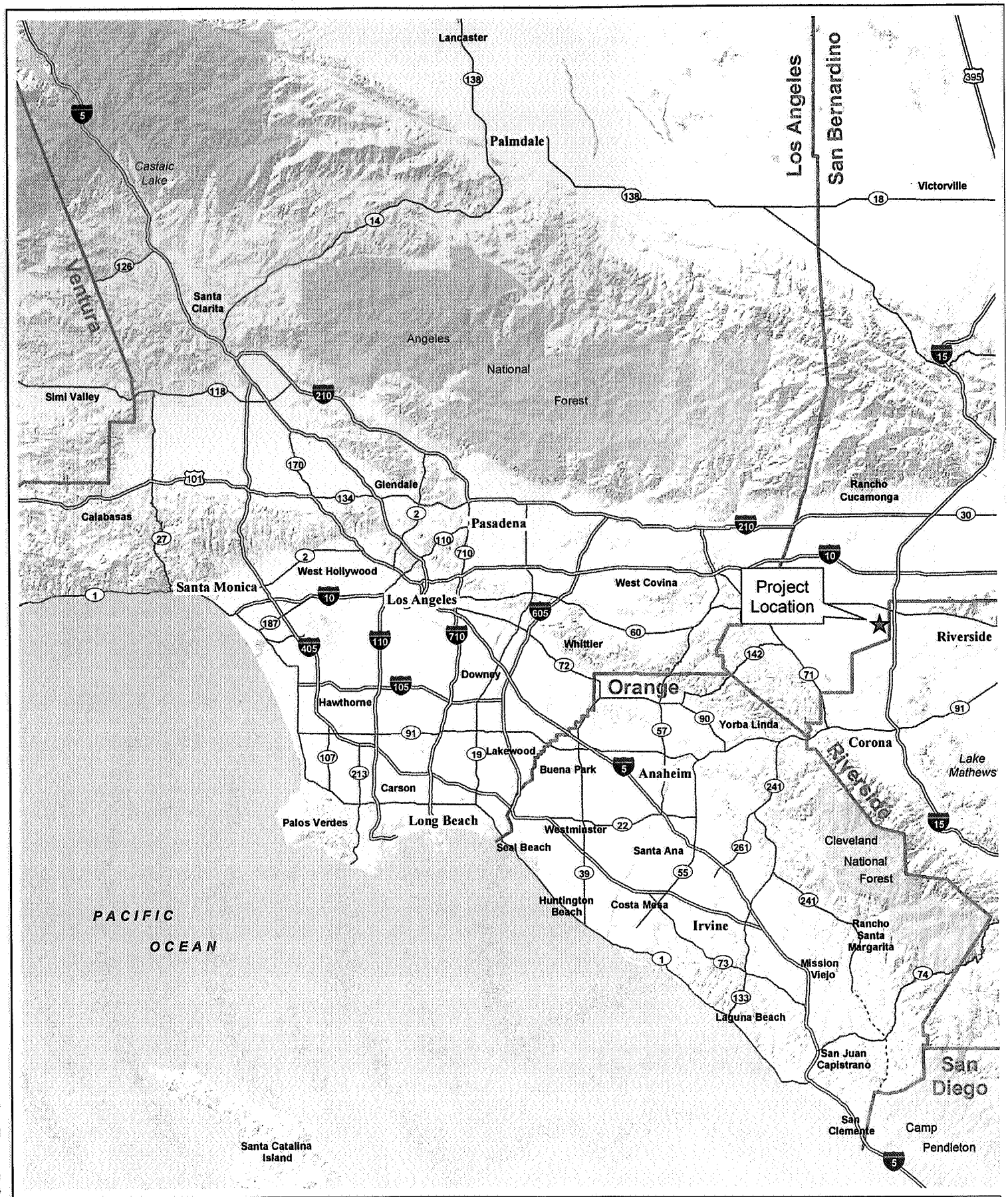

Regional Location

Exhibit 1

Rich Haven Project Site in Ontario

N W E S

10 5 0 10 Miles

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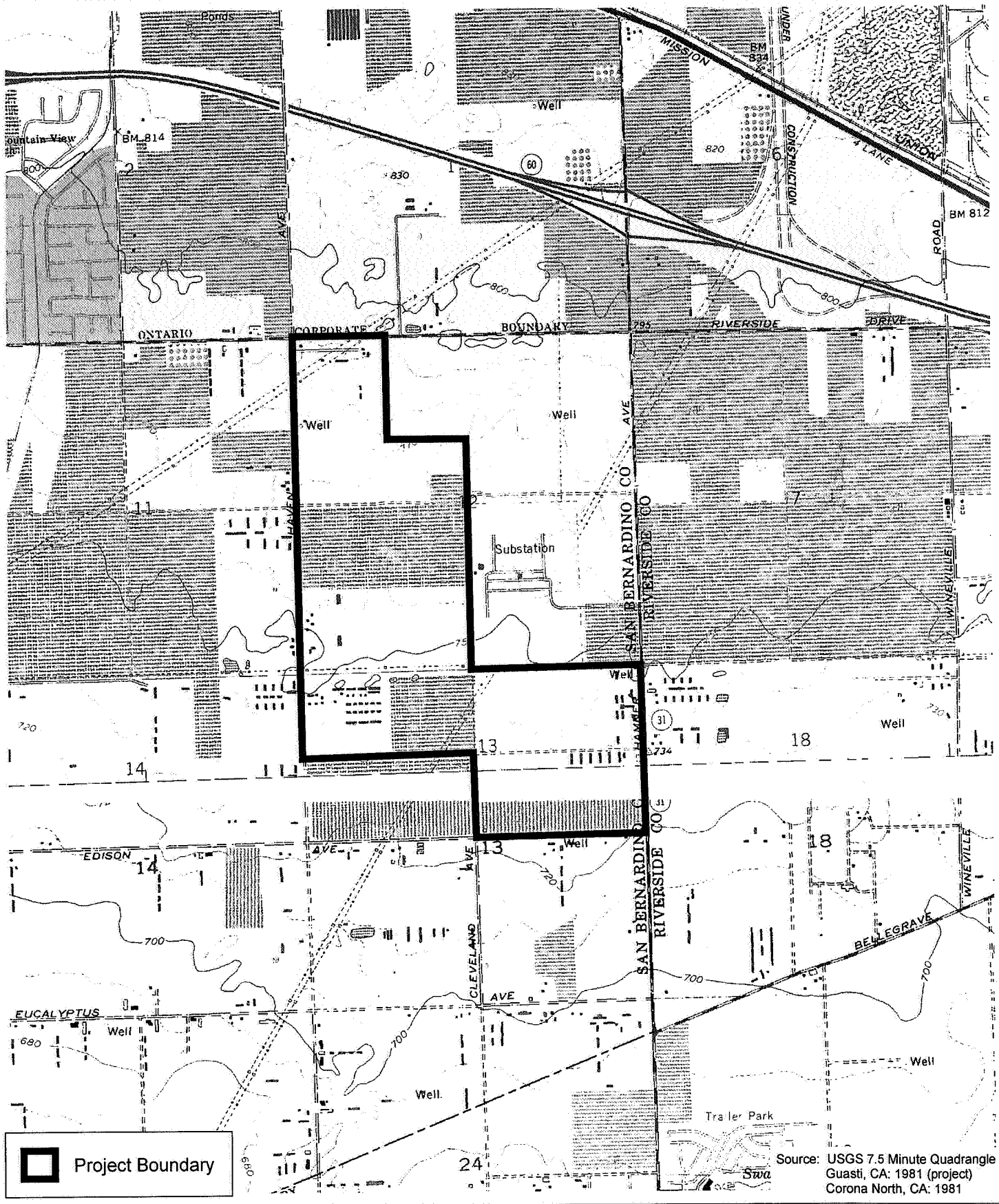

Source: USGS 7.5 Minute Quadrangle
Guasti, CA: 1981 (project)
Corona North, CA: 1981

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Local Vicinity

Exhibit 2

Rich Haven Project Site in Ontario

N W E S

2,000 1,000 0 2,000 Feet

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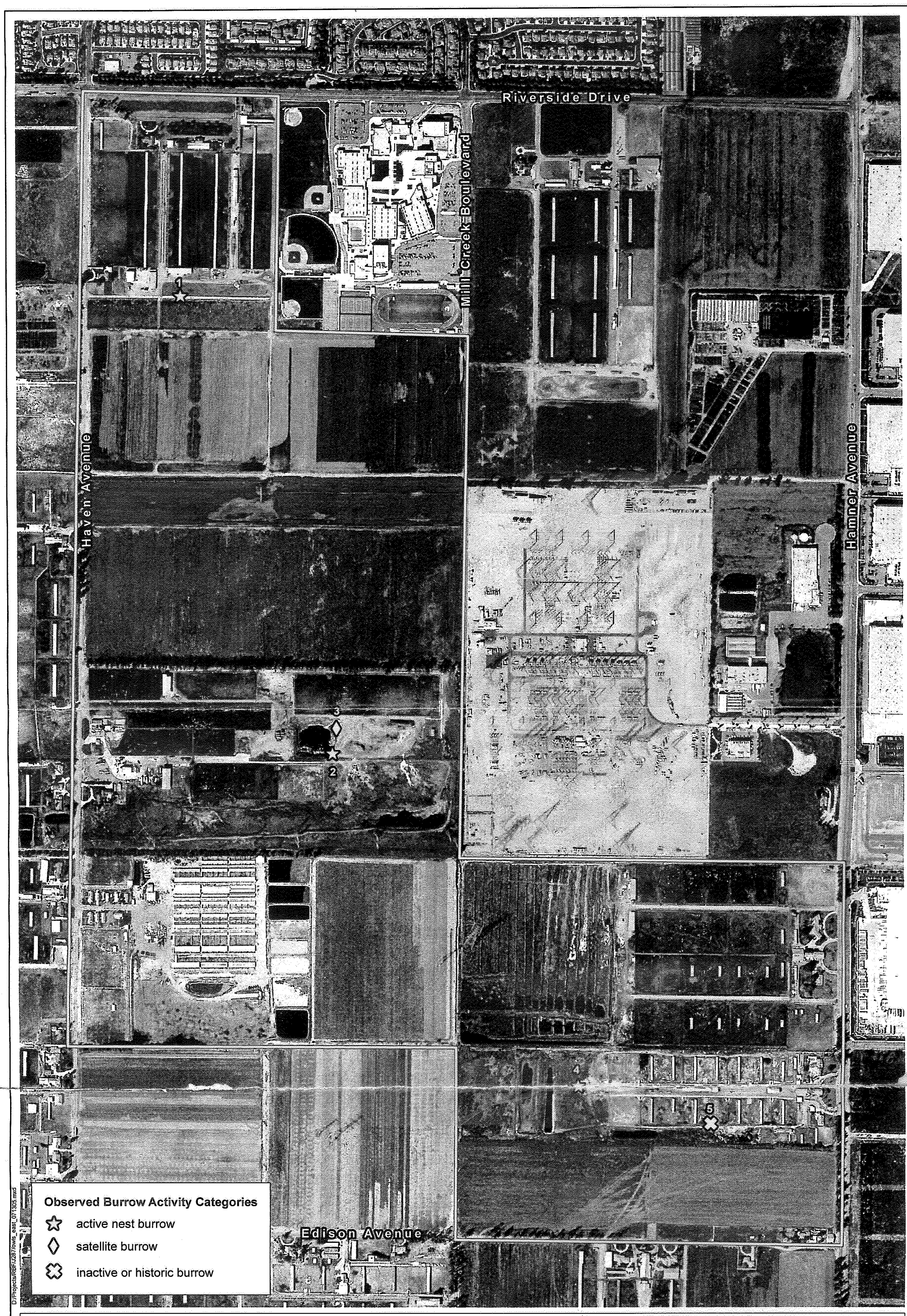

Western Burrowing Owl Burrows

Exhibit 3

Rich Haven Project Site in Ontario

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Subject: Results of Special Status Plant Surveys for the Approximately 500-Acre Rich Haven Specific Plan Project Site, San Bernardino County, California

Dear Mr. Pfannenstiel:

This letter report presents the findings of special status plant surveys conducted on the approximately 500-acre Rich Haven Specific Plan project site in the City of Ontario, San Bernardino County, California (hereafter referred to as the project site). The purpose of this survey was to identify special status plant species on the project site.

Project Location and Description

The project site is generally located within the City of Ontario, southwest of the junction of State Highway 60 and Interstate 15, near the border between San Bernardino and Riverside counties (Exhibit 1). The project site is located immediately south of Riverside Drive and west of Haven Avenue (Exhibit 2). The southeastern corner of the project site is bounded by Edison Avenue to the south and Hamner Avenue to the east. Hamner Avenue also defines the boundary between San Bernardino and Riverside counties in this area, with industrial development on the east side of Hamner Avenue within Riverside County. The edge of a large Southern California Edison Company (SCE) electrical station forms a portion of the eastern project site boundary, while a high school forms a portion of the boundary near the project site's northeastern corner. The remainder of the project site's boundary follows un-named dirt roads or crosses open land. Elevations on the project site range from approximately 720 feet above mean sea level (msl) to approximately 790 feet above msl. The project site is located on the Guasti and Corona North, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle, within Township 2S, Range 7W, and includes the northwestern and southwestern quarters of Section 12, and the northeastern and northwestern quarters of Section 13. Dense residential development is located north of the project site boundary, beyond Riverside Drive. Land surrounding the remainder of the project site includes a patchwork of functioning and abandoned dairies, as well as active and fallow (uncultivated) agricultural land.

At the northern boundary is an operational dairy and south of this dairy are active agricultural fields and an abandoned dairy. There is an operational hog farm in the center of the project site and southeast of this hog farm is an active agricultural field and an active and abandoned dairies.

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METHODS

Special status plant surveys were conducted on May 20, 2005, by Consulting Biologist Scott White and were in conformance with the California Department of Fish and Game (CDFG) guidelines (CDFG 2001). Surveys were (1) conducted during the flowering seasons for the special status plants known from the area, (2) floristic in nature, (3) consistent with conservation ethics, and (4) well documented by this report and by voucher specimens deposited at Rancho Santa Ana Botanic Garden. All areas of the project site containing native habitats potentially suitable for special status plant species were surveyed using meandering transects.

Prior to the field survey, a literature review was conducted to identify special status plants or vegetation types known from the project site and vicinity. This included a review of the Guasti, Corona North, Fontana, Ontario, Prado Dam, and Riverside West USGS 7.5-minute quadrangles in the California Natural Diversity Data Base (CNDDB) (CDFG 2005) and California Native Plant Society's (CNPS) *Electronic Inventory* (2005). In addition, the compendia of special status species published by the U.S. Fish and Wildlife Service (USFWS) and CDFG were reviewed (USFWS 2004, CDFG 2005).

All plant species observed were recorded in field notes. Plant species were identified in the field or collected for subsequent identification. Plants were identified using keys, descriptions, and illustrations in Hickman (1993), Munz (1974), Abrams (1923-1960), and other regional references. Taxonomy follows Hickman (1993) and Brenzel (1999), and current scientific data (e.g., scientific journals) for scientific and common names.

SITE DESCRIPTION

The project site is located within a portion of the City of Ontario that primarily supports dairy farms and limited native vegetation types. Vegetation types on the project site include agriculture, cultivated fields, fallow fields, surface water areas, dry basins, and ornamental areas.

Soil types on the project site consist of Delhi fine sand, Hanford coarse sandy loam (with two to nine percent slopes), Tujunga loamy sand (with zero to five percent slopes), and Hilmar loamy fine sand (Exhibit 3). The entire project site is predominantly Delhi fine sand soils with small amounts of Hanford coarse sandy loam and Tujunga loamy sand occurring in the northern portion of the project site. In addition, a small amount of Hilmar loamy fine sand occurs in the southeastern portion of the project site.

Table 1 lists the special status plants known to occur within the vicinity of the project site. The results column indicates if the species was observed during these surveys.

SURVEY RESULTS

A list of all plants observed during the survey is included in Appendix A. No special status plant species were observed on the project site.

TABLE 1
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE PROJECT SITE

Species	Status			Results
	Federal	State	CNPS	
Abronia villosa var. *aurita* chaparral sand-verbena	—	—	1B	Not observed during survey. Not expected to occur; poor habitat present
Ambrosia pumila San Diego ambrosia	FE	—	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Arenaria paludicola marsh sandwort	FE	SE	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Aster bernardinus (*A. defoliatus*) San Bernardino aster	—	—	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Atriplex coulteri Coulter saltbush	—	—	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Atriplex serenana var. *davidsonii* (*A. davidsonii*) Davidson's saltscale	—	—	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Calochortus plummerae Plummer's mariposa lily	—	—	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Calochortus weedii var. *intermedius* Weed's mariposa lily	—	—	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Chorizanthe parryi var. *parryi* Parry's spineflower	—	—	3	Not observed during survey. Not expected to occur; lack of suitable habitat
Cordylanthus maritimus ssp. *maritimus* salt marsh bird's beak	FE	SE	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Dodecahema leptoceras slender-horned spineflower	FE	SE	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Dudleya multicaulis many-stemmed dudleya	—	—	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Eriastrum densifolium ssp. *sanctorum* Santa Ana River woollystar	FE	SE	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Hemizonia laevis Smooth tarplant	—	—	1B	Not observed during survey. Not expected to occur; marginal habitat present. Located in the margin of geographic range.
Hemizonia paniculata San Diego tarplant	—	—	4	Not observed during survey. Not expected to occur; poor habitat present. Located in the margin of geographic range.
Horkelia cuneata ssp. *puberula* mesa horkelia	—	—	1B	Not observed during survey. Not expected to occur; poor habitat present
Juglans californica var. *californica* Southern California black walnut	—	—	4	Not observed during survey. Not expected to occur; lack of suitable habitat

Species	Status			Results
	Federal	State	CNPS	
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	—	—	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	—	—	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Lycium parishii Parish's desert thorn	—	—	2	Not observed during survey. Not expected to occur; lack of suitable habitat
Monardella pringlei Pringle's monardella	—	—	1A	Not observed during survey. Not expected to occur; lack of suitable habitat
Navarretia prostrata prostrate navarretia	—	—	1B	Not observed during survey. Not expected to occur; lack of suitable habitat
Nolina cismontana Santa Ana Mountains beargrass	—	—	1B	Not observed during survey. Not expected to occur; lack of suitable habitat. Outside geographic range.
Senecio aphanactis rayless ragwort	—	—	2	Not observed during survey. Not expected to occur; lack of suitable habitat
Sidalcea neomexicana salt spring checkerbloom	—	—	2	Not observed during survey. Not expected to occur; lack of suitable habitat

LEGEND

Federal (USFWS)

FE	Endangered
FT	Threatened
PE	Proposed Endangered
PT	Proposed Threatened

State (CDFG)

SE	Endangered
ST	Threatened
PE	Proposed Endangered
PT	Proposed Threatened

California Native Plant Society (CNPS)

1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened, or Endangered in California and Elsewhere
2	Plants Rare, Threatened, or Endangered in California But More Common Elsewhere
3	Plants About Which We Need More Information – A Review List
4	Plants of Limited Distribution – A Watch List

BonTerra Consulting has appreciated the opportunity to assist on this project. If you have any comments or questions, please call Stacie Tennant at (714) 444-9199.

Sincerely,

BONTERRA CONSULTING

for Ann Johnston
Principal, Biological Services

Stacie Tennant
Senior Project Manager

Enclosure: Exhibits 1, 2, and 3
Appendix A

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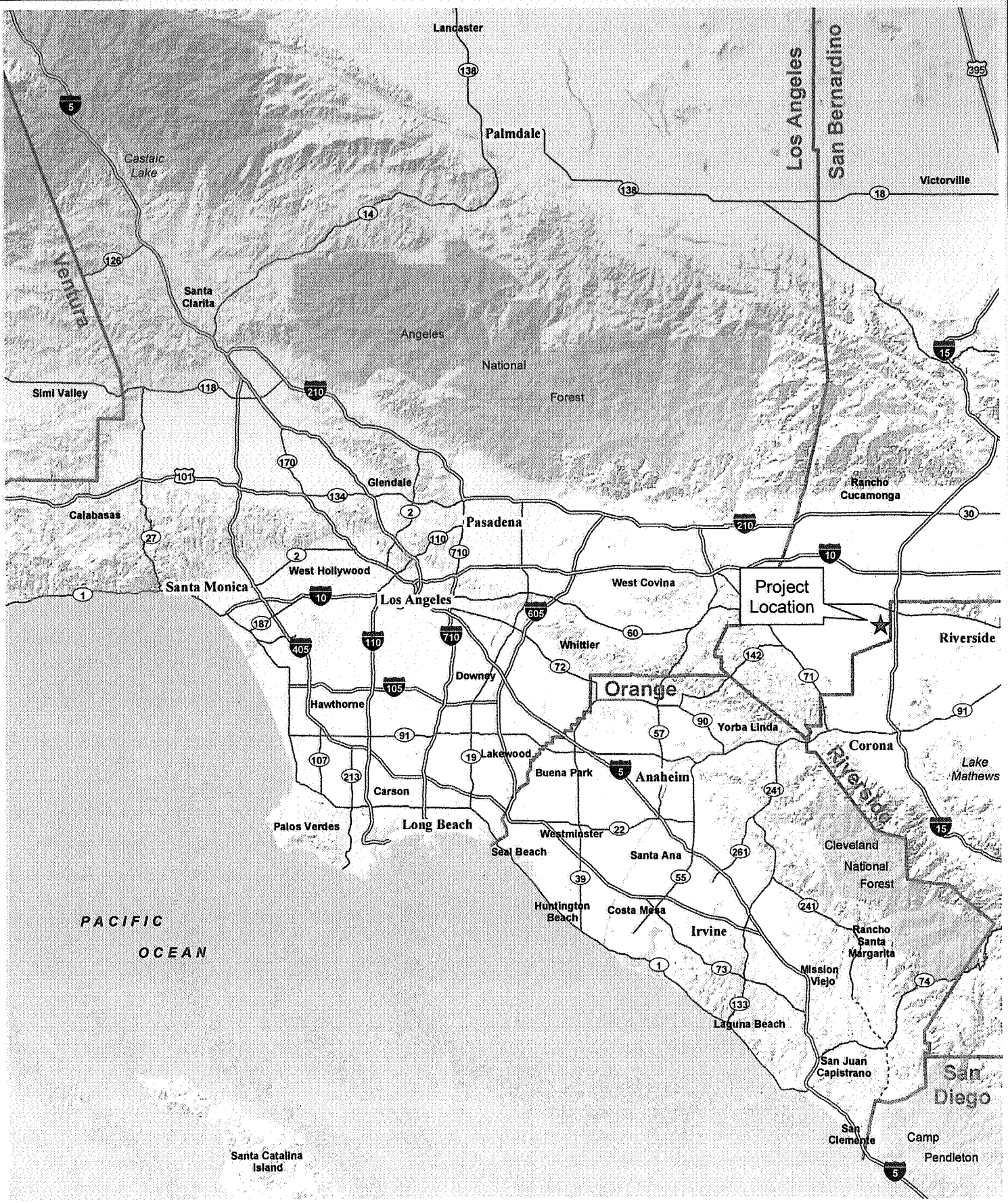

Regional Location

Exhibit 1

Rich Haven Project Site in Ontario

N W E S

10 5 0 10 Miles

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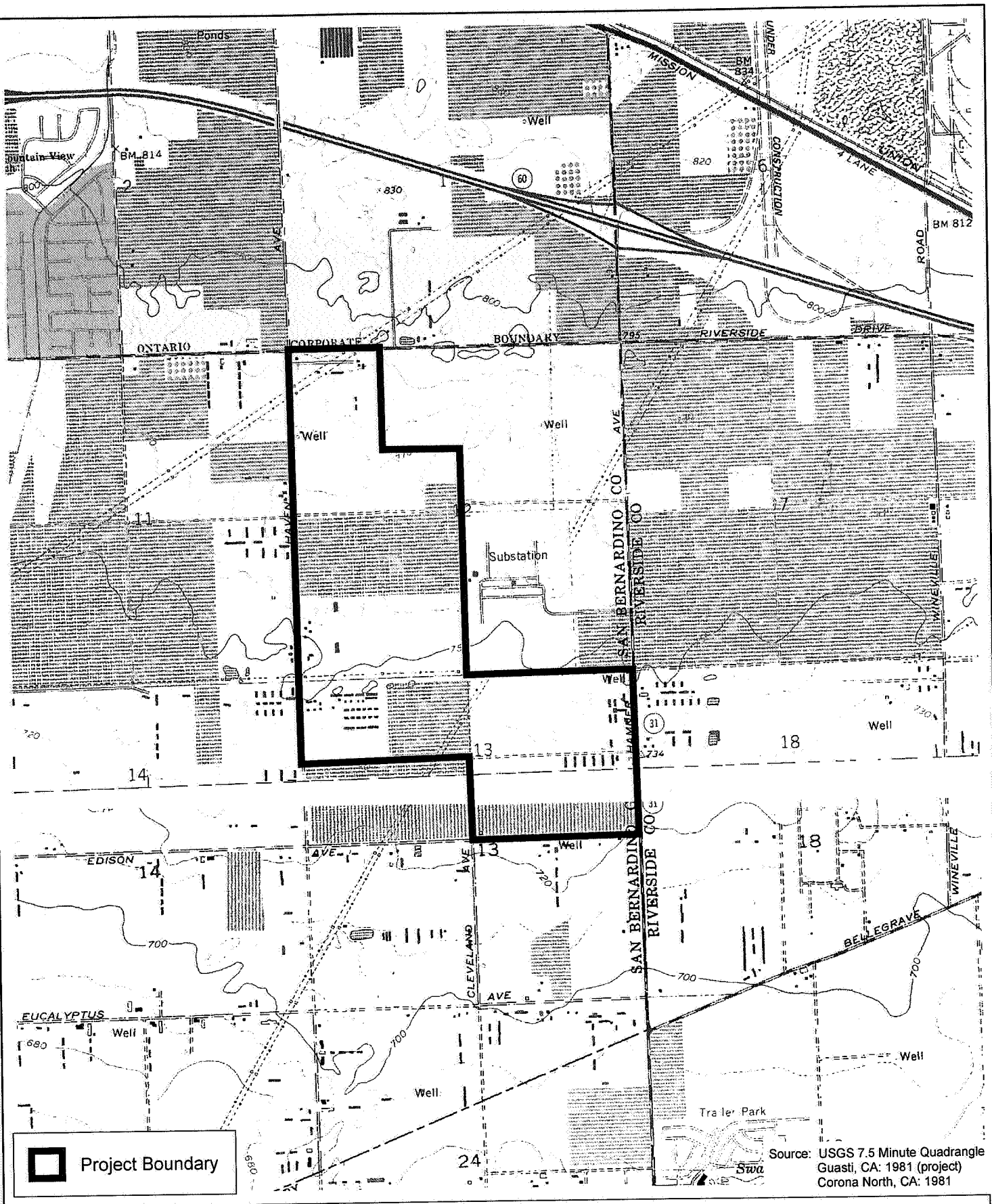

Source: USGS 7.5 Minute Quadrangle
Guasti, CA: 1981 (project)
Corona North, CA: 1981

Local Vicinity

Exhibit 2

Rich Haven Project Site in Ontario

N W E S

2,000 1,000 0 2,000 Feet

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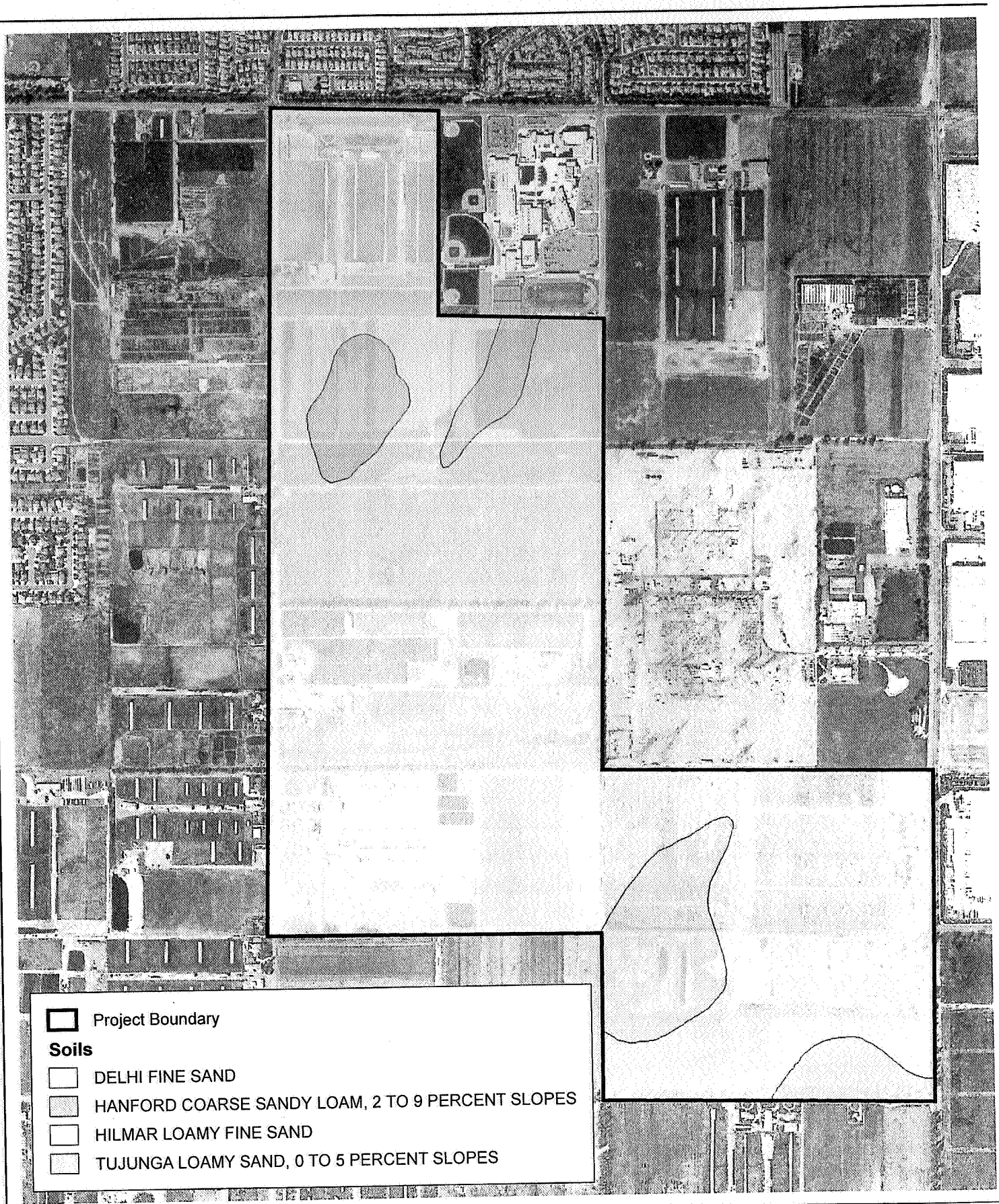

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Exhibit 3

Soils

Rich Haven Project Site in Ontario

N
W E
S

1,000 500 0 1,000 Feet

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BonTerra
CONSULTING
An Environmental Planning/Resource Management Corporation

October 20, 2005

Mr. Aaron Pfannenstiel
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VIA FACSIMILE AND MAIL
(909) 484-9161

Subject: Results of San Bernardino Kangaroo Rat, Los Angeles Pocket Mouse, Northwestern San Diego Pocket Mouse, and San Diego Desert Woodrat Habitat Assessments on the Approximately 500-Acre Rich Haven Specific Plan Project Site, San Bernardino County, California

Dear Mr. Pfannenstiel:

This letter presents the results of a habitat assessment for the federally endangered San Bernardino kangaroo rat (*Dipodomys merriami parvus*) and the following California Department of Fish and Game (CDFG) Species of Special Concern: Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and San Diego desert woodrat (*Neotoma lepida intermedia*) on the approximately 500-acre Rich Haven Specific Plan project site in the City of Ontario, San Bernardino County (hereafter referred to as the project site). The purpose of the survey was to determine if suitable habitat is present on the project site, and if trapping would be necessary to determine the presence or absence of these species.

PROJECT LOCATION AND DESCRIPTION

The project site is located within the City of Ontario southwest of the junction of State Highway 60 and Interstate 15, near the border between San Bernardino and Riverside counties (Exhibit 1). The project site is located immediately south of Riverside Drive and east of Haven Avenue. The southeastern corner of the project site is bounded by Edison Avenue to the south and Hamner Avenue to the east. Hamner Avenue also defines the boundary between San Bernardino and Riverside counties in this area, with industrial development on the east side of Hamner Avenue within Riverside County. The edge of a large Southern California Edison Company electrical station forms a portion of the eastern project site boundary, while a high school forms a portion of the boundary near the project site's northeastern corner. The remainder of the project site's boundary follows un-named dirt roads or crosses open land. Elevations on the project site range from approximately 720 feet above mean sea level (msl) to approximately 790 feet above msl. The project site is located on the Guasti and Corona North, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle, within Township 2S, Range 7W, and includes the northwestern and southwestern quarters of Section 12, and the northeastern and northwestern quarters of Section 13 (Exhibit 2). Dense residential development is located north of the project site boundary, beyond Riverside Drive. Land surrounding the remainder of the project site includes a patchwork of functioning and abandoned dairies, as well as active and fallow (uncultivated) agricultural land.

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METHODS

Karen Kirtland (U.S. Fish and Wildlife Service [USFWS] Permit No. TE8312070-2, CDFG Memorandum of Understanding [MOU]) and Philippe Vergne (USFWS Permit No. TE0680720-0, CDFG MOU), Consulting Biologists, conducted a literature review and records search for sensitive resources within the vicinity of the project site. A one-day habitat assessment of the project site was conducted by Ms. Kirtland and Mr. Vergne on August 2, 2005, to qualitatively assess potential habitat. The field team conducted walking and driving surveys on the project site to assess the habitat and the potential for the San Bernardino kangaroo rat, Los Angeles pocket mouse, San Diego pocket mouse, and San Diego woodrat to occur on the project site. All species identified by sight, call, or sign (i.e., burrows, scat, tracks, etc.) were recorded.

BACKGROUND

Four sensitive mammal species were identified as potentially present in the vicinity of the project site according to the literature review and records search and are discussed below.

San Bernardino Kangaroo Rat

San Bernardino kangaroo rat (SBKR) is one of three subspecies of the Merriam's kangaroo rat (*Dipodomys merriami*). The Merriam's kangaroo rat is a widespread species that can be found from the inland valleys to the deserts. The subspecies known as SBKR, however, is confined to inland valley scrub communities, and more particularly, to scrub communities occurring along rivers, streams, and drainages. Most of these systems have been historically altered as a result of flood control efforts and the resulting increased use of river resources, including mining, off-road vehicle use, and road and housing development. This increased use of river resources has resulted in a reduction in both the amount and quality of habitat available for SBKR. The past habitat losses and potential future losses prompted the emergency listing of SBKR as an endangered species (USFWS 1998a).

SBKR is one of several kangaroo rat species in its range. The Dulzura kangaroo rat (*Dipodomys simulans*), the Pacific kangaroo rat (*Dipodomys agilis*), and the Stephens' kangaroo rat (*Dipodomys stephensi*) occur in areas occupied by SBKR, but these other species have a wider habitat range. SBKR habitat is described as being confined to primary and secondary alluvial fan sage scrub habitats, with sandy soils deposited by fluvial (water) rather than aeolian (wind) processes. Burrows are dug in loose soil, usually near or beneath shrubs.

On April 23, 2002, the USFWS published a final rule to designate 33,295 acres of land as critical habitat for the SBKR. These lands encompass portions of San Bernardino and Riverside counties in California. The project site is not located within the designated critical habitat area for this species.

Los Angeles Pocket Mouse

Both the Los Angeles pocket mouse (LAPM) and the northwestern San Diego pocket mouse occupy similar habitats, but the northwestern San Diego pocket mouse has a wider range extending south into San Diego County. The habitat of the LAPM is described as being confined to lower elevation grasslands and coastal sage scrub habitats, in areas with soils composed of fine sands (Williams 1986). This species prefers habitat similar to that of the Stephens' kangaroo rat (SKR) and SBKR. LAPM occurs in open sandy areas in the valley and foothills of southwestern California (Hall 1981).

The present known distribution of this species in Riverside and San Bernardino counties extends from the San Gabriel and San Bernardino mountains south to the Temecula and Aguanga areas, and from the east side of the Santa Ana Mountains east to Cabazon (Hall 1981). LAPM is listed as a California Species of Special Concern (CSC) by the CDFG (CDFG 2004).

Northwestern San Diego Pocket Mouse

Northwestern San Diego pocket mouse prefers habitat similar to that preferred by the SKR (Williams 1986). Northwestern San Diego pocket mouse occurs in open, sandy areas in the valleys and foothills of southwestern California.

The range of this species extends from Orange to San Diego counties, and includes the inland areas of Riverside and San Bernardino counties (Hall 1981). This mouse is a CSC whose historical range has been reduced by urban development and agriculture (CDFG 2004).

San Diego Desert Woodrat

Desert woodrat (*Neotoma lepida*) is a relatively wide ranging species extending along the coast of California from south of San Francisco through to the border of Baja California. This species also occurs in the Central Valley and the deserts of southern California, and extends along the desert side of the Sierra Nevada into southeastern Oregon (Ingles 1965).

The coastal race of the desert woodrat, the San Diego desert woodrat, prefers scrub habitats such as coastal sage scrub, chaparral, and alluvial fan scrub (CDFG 2004). It is more common in areas with rock piles and coarse sandy to rocky soils throughout coastal southern California.

The range of this species extends from just south of Sacramento and the San Francisco area to the border of Baja California (Hall 1981). The coastal subspecies of the widespread *Neotoma lepida* is listed as a CSC (CDFG 2004). Its historical range has been impacted by the conversion of scrub habitats into residential, commercial, and industrial uses.

RESULTS

The project site is located within a portion of the City of Ontario that primarily supports dairy farms and limited native vegetation types. Vegetation and habitat types on the project site include agriculture, cultivated fields, fallow fields, surface water areas, dry basin, and ornamental areas.

No kangaroo rat or other mammal signs in the form of burrows and scat were observed on the project site. The only rodent sign observed was the California ground squirrel (*Spermophilus beecheyi*).

CONCLUSION

Alluvial sage scrub and upland sage scrub habitat preferred by the SBKR does not occur on the project site. In addition, sandy habitat with open vegetation preferred by LAPM does not occur on the project site. Drainage habitats preferred by both these species is absent as well. No upland scrub and rocky scrub habitats preferred by the San Diego pocket mouse and San Diego woodrat occur on the project. Therefore, none of these sensitive mammal species have a potential to occur on the project site, and trapping is not necessary due to a lack of suitable habitat.

BonTerra Consulting has appreciated the opportunity to assist on this project. If you have any comments or questions, please contact Stacie Tennant at (714) 444-9199.

Sincerely,

BONTERRA CONSULTING

Ann M. Johnston
Principal, Biological Services

Stacie A. Tennant
Senior Project Manager

Attachments: Exhibits 1 and 2

cc: Timothy Higdon, RBF Consulting

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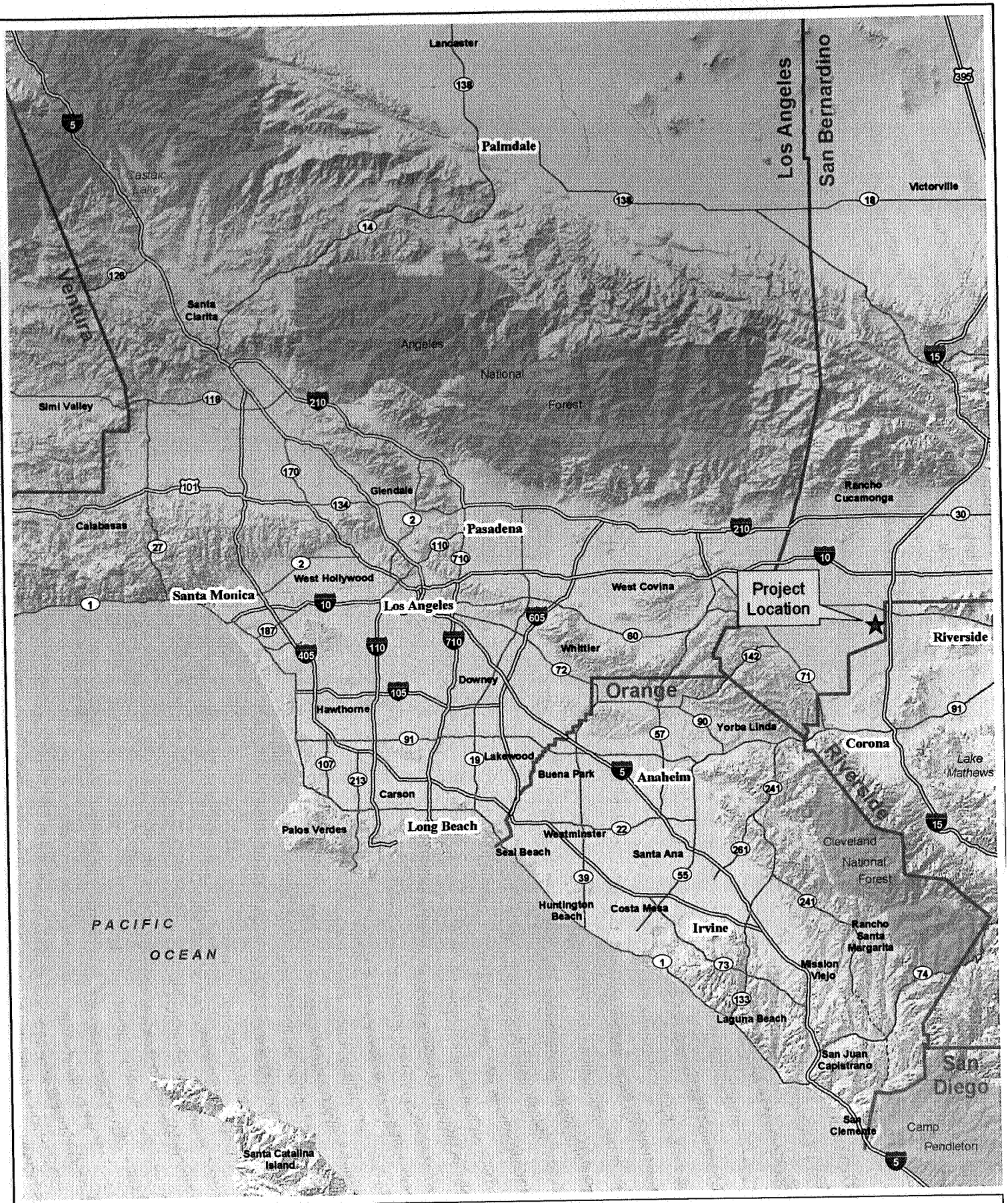

Regional Location

Exhibit 1

Rich Haven Project Site in Ontario

N W E S

10 5 0 10 Miles

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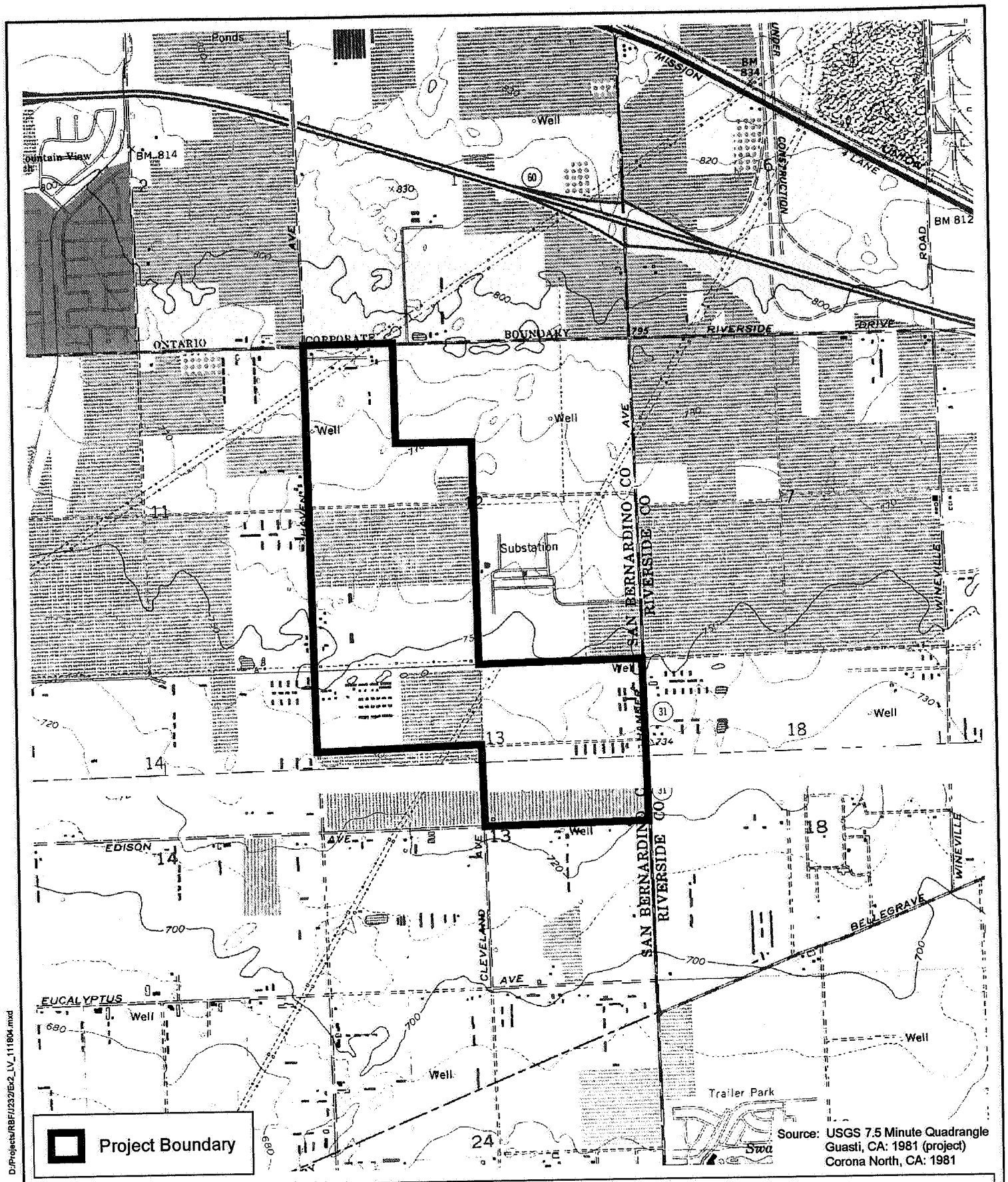

Source: USGS 7.5 Minute Quadrangle
Guasti, CA: 1981 (project)
Corona North, CA: 1981

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Local Vicinity

Exhibit 2

Rich Haven Project Site in Ontario

N W E S

2,000 1,000 0 2,000 Feet

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BonTerra
CONSULTING
An Environmental Planning/Resource Management Corporation

November 18, 2005

Mr. Aaron Pfannenstiel
RBF Consulting
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VIA FACSIMILE AND MAIL
(909) 484-9161

Subject: Results of Delhi Sands Flower-loving Fly Surveys for the Approximately 500-Acre Rich Haven Specific Plan Project Site, San Bernardino County, California

Dear Mr. Pfannenstiel:

This letter report presents the results of focused surveys for the Delhi Sands flower–loving fly (*Rhaphiomidas terminatus abdominalis*) (DSF) on the approximately 500-acre Rich Haven Specific Plan project site in the City of Ontario, San Bernardino County (hereafter referred to as the project site). The purpose of the survey was to determine the presence or absence of the DSF on the project site. The project site is located within the U.S. Fish and Wildlife Service's (USFWS) designated Ontario Recovery Unit (USFWS 1997). Surveys were conducted by biologists holding the necessary federal Endangered Species Act (ESA) survey permits, according to the survey protocol established by the USFWS. A pre-survey notification was transmitted to the Carlsbad Fish and Wildlife office of the USFWS on June 27, 2005. On June 29, 2005, USFWS gave concurrence on the areas that required focused surveys.

Project Location and Description

The project site is located within the City of Ontario southwest of the junction of State Highway 60 and Interstate 15, near the border between San Bernardino and Riverside counties (Exhibit 1). The project site is located immediately south of Riverside Drive and east of Haven Avenue (Exhibit 2). The southeastern corner of the project site is bounded by Edison Avenue to the south and Hamner Avenue to the east. Hamner Avenue also defines the boundary between San Bernardino and Riverside counties in this area, with industrial development on the east side of Hamner within Riverside County. The edge of a large Southern California Edison Company (SCE) electrical station forms a portion of the eastern project site boundary, while a high school forms a portion of the boundary near the project site's northeastern corner. The remainder of the project site's boundary follows un-named dirt roads or crosses open land. Elevations on the project site range from approximately 720 feet above mean sea level (msl) to approximately 790 feet above msl. The project site is located on the Guasti and Corona North, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle, within Township 2S, Range 7W, and includes the northwestern and southwestern quarters of Section 12, and the northeastern and northwestern quarters of Section 13. Dense residential development is located north of the project site boundary, beyond Riverside Drive. Land surrounding the remainder of the project site includes a patchwork of functioning and abandoned dairies, as well as active and fallow (uncultivated) agricultural land.

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General Background

The DSF was listed as an Endangered species by the USFWS on September 23, 1993, and is protected under the provisions of the Endangered Species Act of 1973, as amended. The ESA prohibits anyone from "taking" a listed species. Take includes, but is not limited to, harming, harassing, or killing individuals of a listed species, as well as destruction of habitat occupied by listed species.

The DSF is in the Dipteran (fly) family Mydidae (mydas flies). It is approximately one-inch long and orange-brown in color, with dark brown oval spots on the dorsal surface of the abdomen. This insect is a rapid flyer and can hover like a hummingbird while using its long proboscis to obtain nectar from flowers. The adult flight period lasts for several weeks in July, August, and September, making its observable presence on any site temporary and short.

The historic range of the DSF is estimated to have been approximately 40 square miles in northwestern Riverside and southwestern San Bernardino counties (USFWS 1996). Habitat has been lost and fragmented by a variety of activities/circumstances including agriculture, manure dumping, urbanization, sand-mining, illegal dumping, off-road vehicles, and non-native plant invasion. It is estimated that the DSF's present distribution is less than two percent of its former range, and that the total adult population is on the order of only a few hundred individuals. Known current DSF populations occur in isolated pockets of habitat surrounded by urban development and invasive exotic vegetation (USFWS 1997).

DSF habitat is limited to areas that include Delhi fine sand, an aeolian (wind-deposited) soil type. The USFWS has identified the presence of Delhi sands as the baseline criterion for the determination of suitable or potentially suitable habitat for this species (USFWS 1996). Fine unconsolidated soil is required for oviposition (egg laying) as females must insert their abdomens deep into the sand during this process (Rogers and Mattoni 1993). The larval portion of the DSF's life cycle is largely unknown. Larval development apparently takes place in the sand and is presumed to take either one or two years. Soil disturbances associated with agricultural activities and urban development are primary causes of habitat loss and degradation.

Appropriate vegetative cover is typically sparse (0 to 50 percent cover) to absent (in blowout areas of dune formations and sand pits). The highest density of DSF have been found in habitat that includes a variety of plants including California buckwheat (*Eriogonum fasciculatum*), California croton (*Croton californicus*), telegraph weed (*Heterotheca grandiflora*), and annual bur-sage (*Ambrosia acanthicarpa*).

Areas known to have been occupied by DSF or areas that contain restorable habitat for the fly have been divided into three recovery units (Colton, Jurupa, and Ontario Recovery Units). The recovery units are defined as large geographic areas. However, the occupied and restorable habitat includes only those areas with Delhi Series soils and does not include residential or commercial development or other areas that have been permanently altered by human actions (USFWS 1997).

Survey Methodology

On June 23 and 25, 2005, Consulting Biologist Gilbert Goodlett conducted a habitat suitability evaluation for the project site. A set of criteria (Table 1) was developed to determine if a project site required focused surveys. An area was considered suitable for focused DSF surveys if Delhi fine soils were visually verified (including areas bordering mapped Delhi soils) unless one or more of the following criteria were met. Approximately 110.90 acres of the project site contained suitable habitat and required focused surveys (Exhibits 3 and 4).

TABLE 1
AREAS NOT REQUIRING FOCUSED SURVEYS

CRITERION	EXAMPLE(S)
Area developed.	Buildings, concrete structures, paved roads, houses and associated yards of ornamental species.
Area under active agricultural as evidenced by recent windrows, growing crops, and/or large scale irrigation.	Crop fields, irrigated pastures.
Area is an isolated area of Delhi soils that has not been eliminated for any other reason but is less than one-acre in size and is not bounded by any area that is considered suitable habitat for a focused survey. An area that includes a series of isolated areas of soils would not be considered to fall into this category.	Small isolated areas of soils.
Areas of long term standing water.	Active retention basins.
Soils have been compacted.	Areas where equipment and/or vehicles often operate, some heavily used pastures. Dirt roads were not included in this category where the compacted area is relatively small in comparison to the unconsolidated area.
Areas where sediment other than Delhi soil has been deposited on top of Delhi soils so that the Delhi soils are no longer visible.	Some abandoned retention basins. Often the deposition is of organic material.
Area has near a 100% vegetation density of ruderal perennial vegetation in excess of 0.50 meters high.	Large areas of ruderal vegetation that were probably once agricultural areas.

The current USFWS DSF survey protocol recommends surveys to be conducted at least twice a week from July 1 to September 20 to all potentially occupied habitat areas between the hours of 1000 and 1400 PDT (USFWS 1996). No more than 50 acres per day may be surveyed by an individual biologist. In addition, two consecutive years of surveys with no DSF observations are required to establish absence of the species. Following the USFWS protocol for the species, Consulting Biologists Brian Drake (USFWS Permit # TE-006328-2), Ellen Schafhauser (USFWS Permit # TE-084-254-0), and Mr. Goodlett (USFWS Permit # TE005535-3) conducted 116 person-day surveys during the 11-week period between July 1 and September 20, 2005. Focused DSF surveys were conducted at seven individual areas that ranged in size from 1.7 acres to 57.1 acres.

Weather conditions included the shaded air temperature at 1.5 meters high measured with a 0.1 degree precision thermister or infrared thermometer, the ocularly estimated percentage of cloud cover and type of clouds, and wind speeds and direction. Surveys were conducted by slowly walking in generally meandering transects and along land features (i.e., dirt roads). The times that each area was surveyed was shifted between surveys such that the entire site was covered during all of the survey period during the day. All plant, reptile, bird, mammals, and invertebrate species detected during the surveys were recorded in field notes (Appendices A and B).

Survey Results

No DSF were observed during the 2005 survey season on the project site. Land uses at the project site include existing dairy farms and agricultural lands, residences associated with farms, RV and equipment storage, abandoned dairies, and a pig farm. The vegetation is mostly ruderal with a few scattered native species present; however, no California buckwheat, California croton, or telegraph weed were observed. The average temperature during the surveys was 86.8 degrees Farhenheit (F) with an average survey start temperature at 1000 PDT of 79.4 degrees F and an average survey end temperature at 1400 PDT of 92.9 degrees F. Winds were generally from the southwest to the northwest with westerly winds being the most common. The average wind speed for the surveys

was 2.6 miles per hour. Twenty-five species of plants were observed and are included as Appendix A. A total of 116 species of invertebrates were observed and are listed in Appendix B. All birds, reptiles and mammals observed or detected are listed in Appendix B.

Conclusion

Although no DSF were observed during the 2005 surveys, this is the first season of a two season survey protocol that is required by the USFWS. Therefore, a second year of surveys will be required to meet the USFWS protocol. In addition, a second year of negative surveys is required to demonstrate absence of the DSF.

Please feel free to contact me at (714) 444-9199 if you have any questions or comments.

Sincerely,

BONTERRA CONSULTING

Allison Rudalevige FOR

Stacie A. Tennant
Senior Project Manager, Biological Services

Attachments: Exhibits 1, 2 , 3, and 4
Appendices A and B

R:\Projects\RBF\J232\Fly Report-111805.doc

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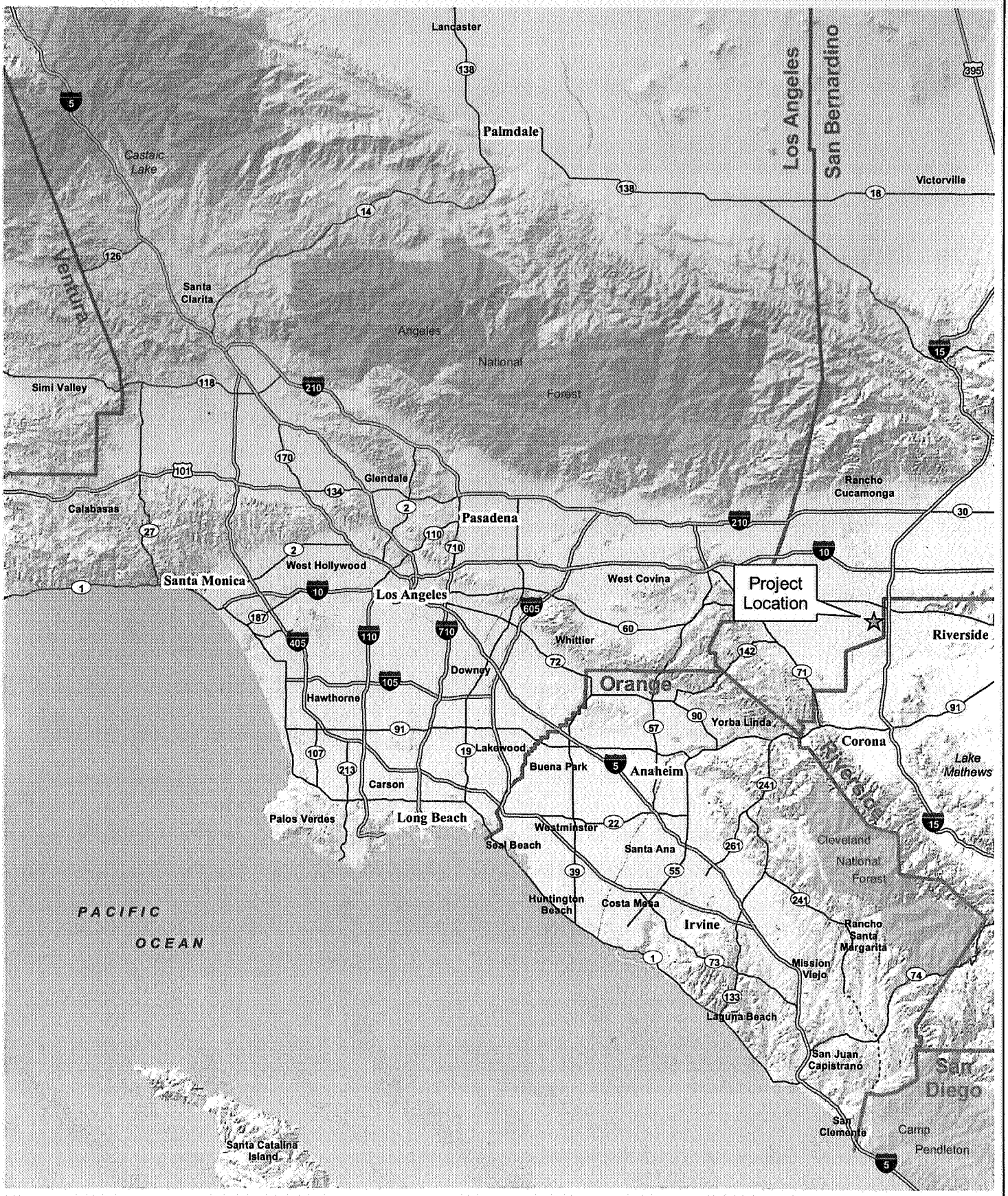

Regional Location

Exhibit 1

Rich Haven Project Site in Ontario

N W E S

10 5 0 10 Miles

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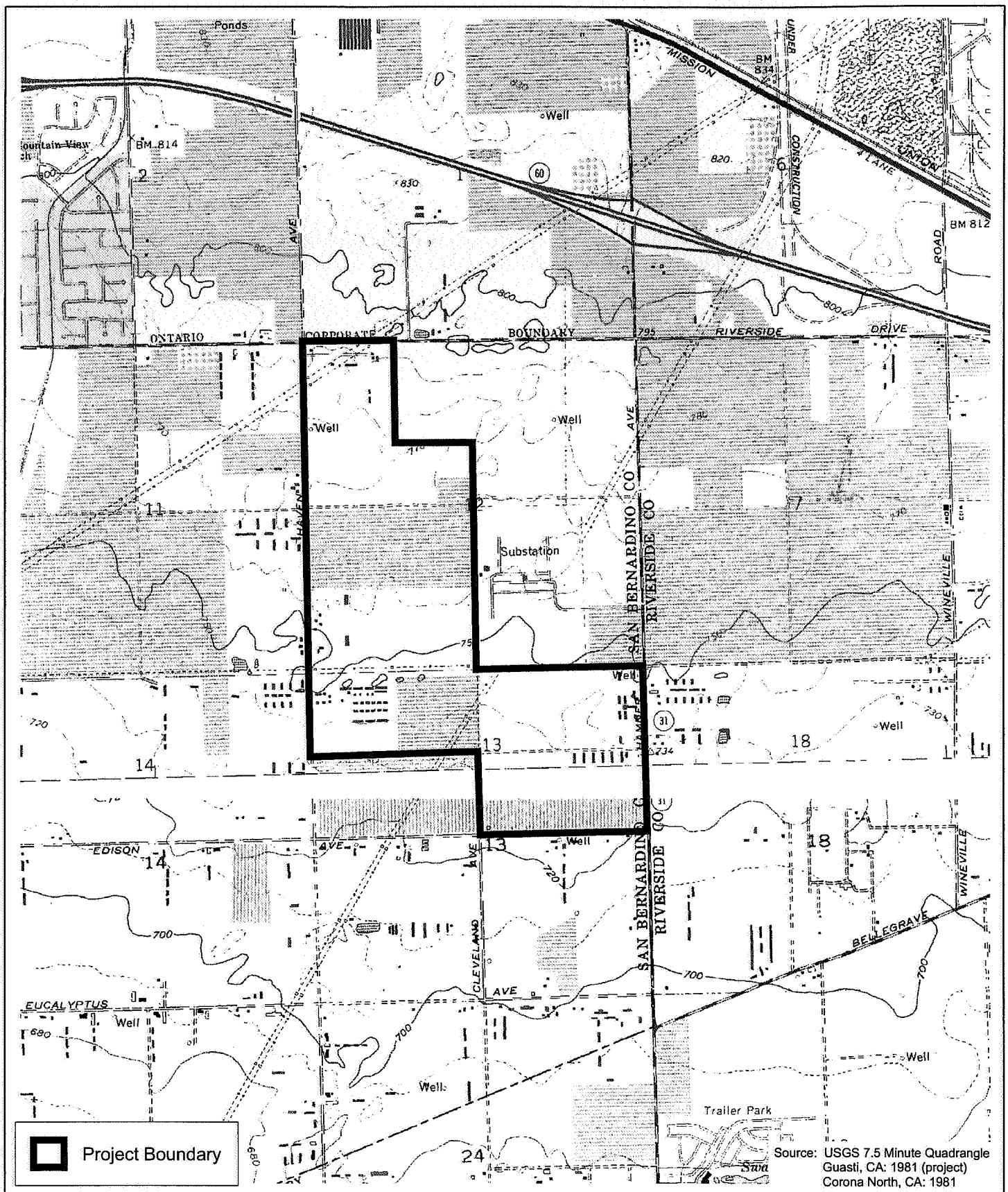

Source: USGS 7.5 Minute Quadrangle
Guasti, CA: 1981 (project)
Corona North, CA: 1981

Local Vicinity

Exhibit 2

Rich Haven Project Site in Ontario

N W E S

2,000 1,000 0 2,000 Feet

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D:/Projects/RBF/J232/Ex2_LV_111804.mxd

D:/Projects/RBF/J232/Ex_soils_061505.mxd

Soils

Exhibit 3

Rich Haven Project Site in Ontario

N
W E
S

1,000 500 0 1,000
Feet

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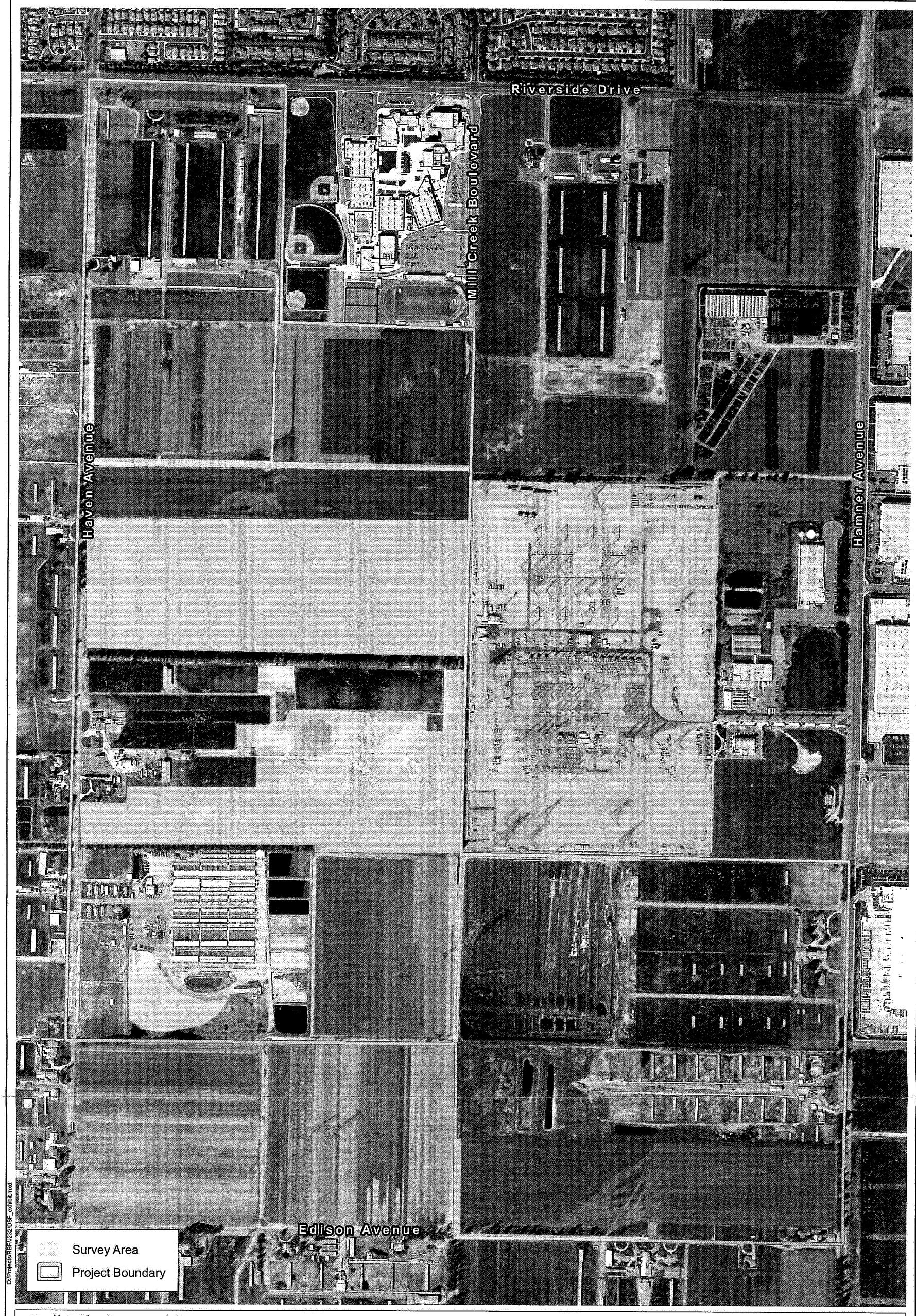

Delhi Fly Protocol Survey Areas

Exhibit 4

Rich Haven Project Site in Ontario

N
W E
S

600 300 0 600

Feet

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APPENDIX A

PLANT AND WILDLIFE COMPENDIUMS

PLANT COMPENDIUM

FLOWERING PLANTS
CLASS DICOTYLEDONES (DICOTS)
AMARANTHACEAE - AMARANTH FAMILY
*Amaranthus albus**   tumbleweed
ANACARDIACEAE - SUMAC FAMILY
*Schinus molle**   Peruvian pepper tree
ASTERACEAE (COMPOSITAE) - SUNFLOWER FAMILY
Ambrosia acanthicarpa   annual bursage
*Cirsium vulgare**   bull thistle
Conyza canadensis   common horseweed
Helianthus annulus   western sunflower
*Lactuca serriola**   prickly lettuce
Stephanomeria virgata ssp. *virgata*   tall wreath plant
Verbesina encelioides var. *exauriculata**   golden crown beard
Xanthium strumarium   cocklebur
BRASSICACEAE (CRUCIFERAE) - MUSTARD FAMILY
*Hirschfeldia incana**   shortpod mustard
CHENOPODIACEAE - GOOSEFOOT FAMILY
*Salsola tragus**   Russian thistle
CUCURBITACEAE - GOURD FAMILY
Cucurbita foetidissima   coyote melon/calabazilla
CUSCUTACEAE - DODDER FAMILY
Cuscuta sp.   dodder
EUPHORBIACEAE -SPURGE FAMILY
Croton californicus   California croton
GERANIACEAE - GERANIUM FAMILY
*Erodium cicutarium**   red-stemmed filaree
MYRTACEAE - MYRTLE FAMILY
Eucalyptus sp.*   gum
SIMAROUBACEAE - QUASSIA FAMILY
*Ailanthus altissima**   tree of heaven
SOLANACEAE - NIGHTSHADE FAMILY
Datura sp.   jimson weed
*Nicotiana glauca**   tree tobacco

PLANT COMPENDIUM
(Continued)

FLOWERING PLANTS
ZYGOPHYLLACEAE - CALTROP FAMILY
*Tribulus terrestris**   puncture vine
CLASS MONOCOTYLEDONES (MONOCOTS)
POACEAE [GRAMINEAE] - GRASS FAMILY
Avena sp.   wild oat
*Bromus diandrus**   ripgut grass
*Cynodon dactylon**   Bermuda grass
TYPHACEAE - CATTAIL FAMILY
Typha latifolia   broad-leaved cattail
* introduced species

WILDLIFE COMPENDIUM
(Continued)

PASSERIDAE - OLD WORLD SPARROWS
Passer domesticus house sparrow *
MAMMALS
LEPORIDAE - HARES & RABBITS
Lepus californicus black-tailed jackrabbit
Sylvilagus audubonii desert cottontail
SCIURIDAE - SQUIRRELS
Spermophilus beecheyi California ground squirrel
GEOMYIDAE - POCKET GOPHERS
Thomomys bottae Botta's pocket gopher
CANIDAE - WOLVES & FOXES
Canis familaris domestic dog
Canis latrans coyote
Vulpes macrotis kit fox
FELIDAE - CATS
Felis sylvesteris catus domestic cat
BOVIDAE - BISON, GOATS, MUSKOX, & SHEEP
Bos taurus domestic cow
Ovis sp. domestic sheep
INVERTEBRATES
AESHNIDAE - DARNERS
Aeshna multicolor multicolored darner
Anax junius green darner
LIBELLULIDAE - COMMON SKIMMERS
Libellula saturata big red skimmer
Pachydiplax longipennis skimmer
Pantala flavescens skimmer
Perithemis intensa pastel skimmer
COENAGRIONIDAE - COMMON DAMSELFLIES
Argia vivida violet dancer
ORTHOPTERA - GRASSHOPPERS, KATYDIDS & CRICKETS
ACRIDIDAE - SHORT-HORNED GRASSHOPPERS
Schistocerca nitens gray bird grasshopper
Trimerotropis californica grasshopper

REPTILES
PHRYNOSOMATIDAE - ZEBRA-TAILED, FRINGE-TOED, SPINY, TREE, SIDE-BLOTCHED, AND HORNED LIZARDS
Callisaurus draconoides zebra-tailed lizard
Sceloporus occidentalis western fence lizard
Uta stansburiana side-blotched lizard
BIRDS
Branta canadensis Canada goose
Anas platyrhynchos mallard
ARDEIDAE - HERONS
Ardea alba great egret
Bubulcus ibis cattle egret
CATHARTIDAE - NEW WORLD VULTURES
Cathartes aura turkey vulture
ACCIPITRIDAE - HAWKS
Accipiter cooperii Cooper's hawk
Buteo jamaicensis red-tailed hawk
FALCONIDAE - FALCONS
Falco sparverius American kestrel
RALLIDAE - RAILS
Fulica americana American coot
CHARADRIIDAE - PLOVERS
Charadrius vociferus killdeer
RECURVIROSTRIDAE - STILTS & AVOCETS
Himantopus mexicanus black-necked stilt
Recurvirostra americana American avocet
SCOLOPACIDAE - SANDPIPERS & PHALAROPES
Numenius americanus long-billed curlew
Limnodromus griseus short-billed dowitcher
Phalaropus tricolor Wilson's phalarope
COLUMBIDAE - PIGEONS & DOVES
Columba livia rock pigeon *
Zenaida macroura mourning dove

WILDLIFE COMPENDIUM
(Continued)

TYTONIDAE - BARN OWLS
Tyto alba barn owl
STRIGIDAE - TRUE OWLS
Athene cunicularia burrowing owl
APODIDAE - SWIFTS
Aeronautes saxatalis white-throated swift
TROCHILIDAE - HUMMINGBIRDS
Calypte anna Anna's hummingbird
TYRANNIDAE - TYRANT FLYCATCHERS
Sayornis nigricans black phoebe
Sayornis saya Say's phoebe
Myiarchus cinerascens ash-throated flycatcher
Tyrannus verticalis western kingbird
LANIIDAE - SHRIKES
Lanius ludovicianus loggerhead shrike
CORVIDAE - JAYS & CROWS
Corvus brachyrhynchos American crow
Corvus corax common raven
HIRUNDINIDAE - SWALLOWS
Tachycineta thalassina violet-green swallow
Hirundo rustica barn swallow
MIMIDAE - THRASHERS
Mimus polyglottos northern mockingbird
STURNIDAE - STARLINGS
Sturnus vulgaris European starling *
EMBERIZIDAE - SPARROWS & JUNCOS
Melospiza melodia song sparrow
ICTERIDAE - BLACKBIRDS
Agelaius phoeniceus red-winged blackbird
Sturnella neglecta western meadowlark
Euphagus cyanocephalus Brewer's blackbird
Molothrus ater brown-headed cowbird
FRINGILLIDAE - FINCHES
Carpodacus mexicanus house finch

WILDLIFE COMPENDIUM
(Continued)

Trimerotropis fontana grasshopper
Trimerotropis pallidipennis pallid band-winged grasshopper
GRYLLIDAE - CRICKETS
Subfamily: Gryllinae house and field crickets
MANTODEA - MANTIDS
MANTIDAE - MANTIDS
Iris oratoria Mediterranean mantid
Stagmomantis californica California mantid
DERMAPTERA - EARWIGS
FORFICULIDAE - EARWIGS
Forficula auricularia European earwig
HEMIPTERA - TRUE BUGS
REDUVIIDAE - ASSASSIN BUGS
Apiomerus sp. Robust assassin bug
Sinea complexa assassin bug
Zelus sp. assassin bug
Zelus tetracanthus four-spurred assassin bug
LYGAEIDAE - SEED BUGS
Lygaeus kalmii small milkweed bug
SCUTELLERIDAE - SHIELD-BACKED BUGS
Euptychodera corrugat shield-backed bug
PENTATOMIDAE - STINK BUGS
Chlorochroa sayi Say's stink bug
Chlorochroa sp. stink bug
NEUROPTERA - NERVE-WINGED INSECTS
CHRYSOPIDAE - GREEN LACEWINGS
Chrysopa sp. Green Lacewing
MYRMELEONTIDAE - ANTLIONS
Brachynemerus sp. antlion
LEPIDOPTERA - MOTHS AND BUTTERFLIES
PYRALIDAE - PYRALID MOTHS
Pyralidae sp. Pyralis moth
SPHINGIDAE - HAWK MOTHS AND SPHINX MOTHS
Hyles lineata white-lined sphinx moth
ARCTIIDAE - TIGER MOTHS
Estigmene acrea acrea moth

WILDLIFE COMPENDIUM
(Continued)

PAPILIONIDAE - SWALLOWTAIL BUTTERFLIES
Papilio rutulus western tiger swallowtail
PIERIDAE - WHITES, SULFURS, & ORANGETIPS
Pieris rapae mustard white*
Eurema nicippe sleepy orange
Pontia protodice common (checkered) white
Colias eurytheme alfalfa butterfly (orange sulphur)
Nathalis iole dainty sulfur
NYMPHALIDAE - BRUSH-FOOTED BUTTERFLIES
Vanessa cardui painted lady
Vanessa annabella west coast lady
Vanessa sp. lady
Junonia coenia common buckeye
Nymphalis antiopa mourning cloak
DANAIDAE - MILKWEED BUTTERFLIES
Danaus plexippus monarch
Danaus gilippus queen
LYCAENIDAE - BLUES, HAIRSTREAKS, & COPPERS
Leptotes marina marine blue
Icaricia acmon acmon blue
Brephidium exilis western pygmy-blue
Strymon melinus gray hairstreak
HESPERIIDAE - SKIPPERS
Erynnis funeralis funereal duskywing
Pyrgus ablescens western checkered skipper
Heliopetes ericetorum large white skipper
Hylephila phyleus fiery skipper
Atalopedes campestris sachem
Lerodea eufala eufala skipper

WILDLIFE COMPENDIUM
(Continued)

COLEOPTERA - BEETLES
COCCINELLIDAE - LADYBIRD BEETLES
Coccinella californica California ladybird beetle
Hippodamia convergens convergent ladybird beetle
TENEBRIONIDAE - DARKLING BEETLES
Eleodes gracilis darkling beetle
SCARABAEIDAE - SCARAB BEETLES
Cotinus mutabilis green fruit beetle
CHRYSOMELIDAE - LEAF BEETLES
Diabrotica undecimpunctata western spotted cucumber beetle
Lema trilineata three-lined potato beetle
DIPTERA - FLIES
TABANIDAE - HORSE AND DEER FLIES
Tabanus punctifer big black horse fly
APIOCERIDAE - FLOWER-LOVING FLIES
Apiocera convergens flower fly
Apiocera sp. flower fly
ASILIDAE - ROBBER FLIES
Mallophora fautrix bumble bee robber fly
Promachus aldrichii robber fly
Protocanthus sp. giant robber fly
sarcopogon luteus robber fly
Stenopogon brevisculus robber fly
MYDIDAE - MYDAS FLIES
Exoprosopa sp. bee fly
Poecilanthrax sp. bee fly
Poecilognathus sp. bee fly
Thyridanthrax atrata big black bee fly
Villa sp. bee fly
Xenox sp. bee fly
SYRPHIDAE - SYRPHID FLIES
Eristalis aenea hover fly
Eristalis sp. drone fly

Eristalis tenax drone fly
Hilopholus sp. flower fly
Syritta pipiens hover fly
Volucella mexicana cactus fly
CONOPIDAE - THICK-HEADED FLIES
Physocephala texana thread-waisted conopid
MUSCID FLIES
Musca domestica house fly
CALLIPHORIDAE - BLOW FLIES
Phaenicia sericata green bottle fly
SARCOPHAGIDAE - FLESH FLIES
Sarcophaga sp. flesh fly
HYMENOPTERA - SAWFLIES, ICHNEUMONS, CHALCIDS, ANTS, WASPS, AND BEES
CHRYSIDIDAE - CUCKOO WASPS
Parnopes edwardsii cuckoo wasp
MUTILLIDAE - VELVET ANTS
Dasymutilla californica red velvet ant
Dasymutilla coccineohirta red velvet ant
FORMICIDAE - ANTS
Iridomyrmex humilis Argentine ant
Pogonomyrmex californicus California harvester ant
POMPILIDAE - SPIDER WASPS
Pompilidae sp. spider wasp
VESPIDAE - VESPID WASPS
Dolichovespula sp. Yellow jacket
Eumenes crucifera potter wasp
Polistes apachus paper wasp
Polistes dorsalis paper wasp
Polistes fuscatus golden polistes
Polistes sp. paper wasp
Subfamily: Eumeninae vespid wasp

SPHECIDAE - SPHECID WASPS
Ammophila aberti thread-waisted wasp
Ammophila azteca thread-waisted wasp
Ammophila sp. thread-waisted wasp
Bembix comata western sand wasp
Cerceris sp. sphecid wasp
Chlorion aerarium steel blue cricket hunter
Microbembix california sphecid wasp
Philanthus multimaculatus sphecid wasp
Philanthus sp. sphecid wasp
Prionyx sp. sphecid wasp
Sceliphron caementarium mud dauber
Subfamily: Bembicinae sphecid wasp
HALICTIDAE E- HALICTID BEES
Agapostemon sp. Metallic sweat bee
MEGACHILIEDAE - LEAFCUTTING BEES
Anthidellum sp. mason bee
Megachile sp. common leaf-cutter
ANTHOPHOREIDAE - CARPENTER BEES
Melissodes sp. anthophorid bee
Xylocopa varipuncta valley carpenter bee
APIDAE - HONEY EBEES AND BUMBLE BEES
Apis mellifera honey bee
ARANEAE - SPIDERS
THERIIDIDAE - COMB-FOOTED SPIDERS
Lactordectus hesperus western black widow
PHOLCIDAE - PHOLCID SPIDERS
Pholcus phalangiodes cobweb spider

BonTerra CONSULTING
An Environmental Planning/Resource Management Corporation

Celebrating Ten 1996-2006

October 30, 2006

Mr. Aaron Pfannenstiel
RBF Consulting
3300 East Guasti Road, Suite 100
Ontario, CA 91761

Subject: Results of Delhi Sands Flower-loving Fly Surveys for the Rich Haven Specific Plan Project Site, City of Ontario, San Bernardino County, California

Dear Mr. Pfannenstiel:

This letter provides the results of focused surveys for the Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*) (DSF) conducted by Consulting Biologists Gilbert Goodlett (TE-005535-3) and Brian Drake (TE-006328-3) on the approximately 300-acre Rich Haven Specific Plan project site in the City of Ontario, San Bernardino County, California (hereafter referred to as the project site). Approximately 85.9 acres of the project site was considered suitable habitat and surveyed for the fly. The surveys focused on the determination of presence of the federally listed DSF on the project site. The methods and results of the surveys are discussed in the report attached.

Project Location and Description

The project site is located within the City of Ontario (southwest of the junction of State Highway 60 and Interstate 15) near the border between San Bernardino and Riverside counties. The project site is located immediately south of Riverside Drive and west of Haven Avenue. The southeastern corner of the project site is bounded by Edison Avenue to the south and Hamner Avenue to the east. Hamner Avenue also defines the boundary between San Bernardino and Riverside counties in this area, with industrial development on the east side of Hamner within Riverside County. The edge of a large Southern California Edison Company electrical station forms a portion of the eastern project site boundary, while a high school forms a portion of the boundary near the project site's northeastern corner. The remainder of the project site's boundary follows unnamed dirt roads or crosses open land. Elevations on the project site range from approximately 720 feet above mean sea level (msl) to approximately 790 feet above msl. The project site is located on the Guasti and Corona North, California U.S. Geological Survey 7.5-minute topographic quadrangle, within Township 2 South, Range 7 West, and includes the northwestern and southwestern quarters of Section 12, and the northeastern and northwestern quarters of Section 13.

151 Kalmus Drive
Suite E-200
Costa Mesa
California 92626
(714) 444-9199
(714) 444-9599 fax
www.bonterraconsulting.com

Results

No DSF observations were made at the Rich Haven project site during the 2006 survey season. Surveys were conducted according to U.S. Fish and Wildlife Service protocols and surveys were conducted for 46 days from July 1 to September 20, 2006. In addition, no DSF were detected during the 2005 focused surveys. Two consecutive years of surveys have been conducted on this project site and it is concluded that the project site is not occupied by the DSF.

If you have any questions, please feel free to call me at 714-444-9199.

Sincerely,

BONTERRA CONSULTING

Stacie A. Tennant
Project Manager/Biologist

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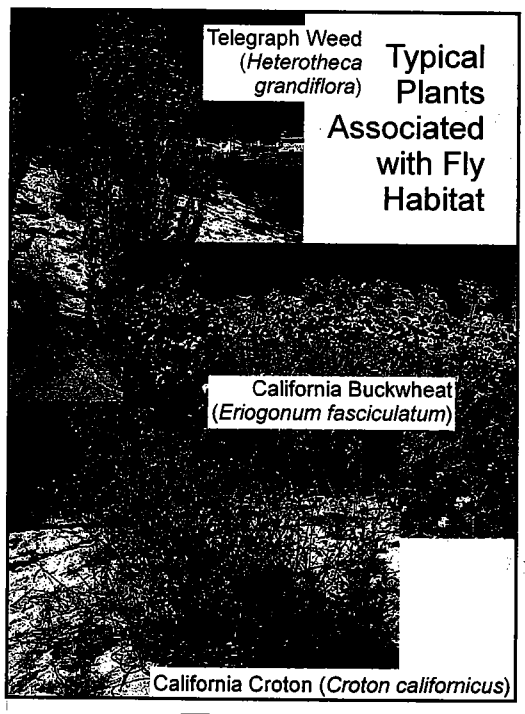
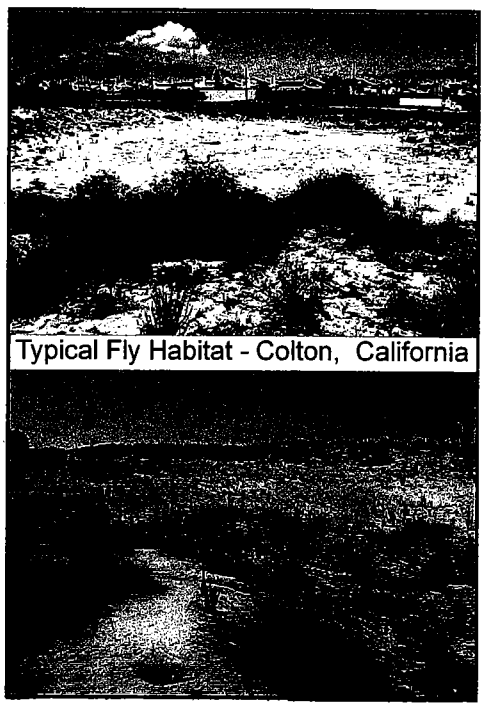
Delhi Sands Flower-loving Fly
(*Rhaphiomidas terminatus abdominalis*)
2006 Focused Adult Survey on the Rich Haven Site in Southern Ontario, California
Project no. RBF J325

Submitted to:

BonTerra Consulting
151 Kalmus Drive, Suite E-200
Costa Mesa, CA 92626
Attn: Amber ONeal
(714) 444-9199
AOneal@bonterraconsulting.com




Typical Fly Habitat - Colton, California

Prepared by:

Gilbert Goodlett
EnviroPlus Consulting
1660 West Franklin Avenue
Ridgecrest, California 93555
(760) 371-3592 phone & fax
email: torthunter@aol.com


Male Delhi Sands Flower-loving Fly on California Buckwheat


Female Delhi Sands Flower-loving Fly on Sand

October 19, 2006

Table of Contents

CERTIFICATIONS

I, **Brian Drake**, having performed focused surveys for the Delhi Sands Flower-loving Fly at the locations covered in this report, have entirely read and reviewed the final report for the project and concur with the statements and conclusions made. A portion of this work was performed under U.S. Fish and Wildlife Service Permit number TE-006328-3, expiring 3/7/2009.

Signature

October 19, 2006
Date

I, **Gilbert O. Goodlett** of EnviroPlus Consulting, having prepared the report for the locations covered in this report have entirely read and reviewed the final report for the project and concur with the statements and conclusions made. A portion of this work was performed under U.S. Fish and Wildlife Service Permit number TE005535-3 expiring 7/7/2007.

Signature

October 19, 2006
Date

EXECUTIVE SUMMARY

No Delhi Sands Flower-loving Fly observations were made at the Rich Haven site during the 2006 survey season. U.S. Fish and Wildlife Service protocols were followed for conducting the surveys. Surveys were conducted on 46 days between July 1 and September 20, 2006 between 1000 and 1400 local time. This is the second consecutive year that surveys have been completed at the Rich Haven site establishing the site as unoccupied by DSF according to U.S. Fish and Wildlife Service protocols.

BACKGROUND

Delhi Sands Flower-loving Fly

The Delhi Sands Flower-loving Fly (*Rhaphiomidas terminatus abdominalis*) (DSF) was listed as an endangered species by the U.S. Fish and Wildlife Service (Service) on September 23, 1993 (58 Federal Register 49881) and is protected under the provisions of the Endangered Species Act of 1973, as amended (ESA). The ESA prohibits anyone from "taking" a listed species. Take includes, but is not limited to, harming, harassing, or killing individuals of a listed species as well as destruction of habitat occupied by listed species.

The DSF is in the Dipteran (fly) family Mydidae (mydas flies). It is approximately one-inch long and orange-brown in color, with dark brown oval spots on the dorsal surface of the abdomen (inset cover photographs). This insect is a rapid flyer and its long proboscis is used to obtain nectar from flowers. The adult flight period lasts for several weeks in July, August, and September, making its observable presence on any site temporary and short.

The historic range of the DSF is estimated to have been approximately 40 square miles in northwestern Riverside and southwestern San Bernardino counties (USFWS, 1996). Habitat has been lost and fragmented by a variety of activities/circumstances including agriculture, manure dumping, urbanization, sand-mining, illegal dumping, off-road vehicles, and non-native plant invasion. It is estimated that the DSF's present distribution is less than 2% of its former range, and that the total adult population is on the order of only a few hundred individuals. Known current DSF populations occur in isolated pockets of habitat surrounded by urban development and invasive exotic vegetation (USFWS, 1997).

DSF habitat is limited to areas that include Delhi fine sand, an aeolian (wind-deposited) soil type. The Service has identified the presence of Delhi Sands as the baseline criterion for the determination of suitable or potentially suitable habitat for this species (USFWS, 1996). Fine unconsolidated soil is required for oviposition (egg laying) as females must insert their abdomens deep into the sand during this process (Rogers and Mattoni, 1993). The larval portion of the DSF's life cycle is largely unknown. Larval development apparently takes place in the sand and is presumed to take either one or two years. Soil disturbances associated with agricultural activities and urban development are primary causes of habitat loss and degradation.

Appropriate vegetative cover is typically sparse (0 to 50% cover) to absent (in blowout areas of dune formations and sand pits). The highest density of DSF have been found in habitat that includes a variety of plants including California buckwheat (*Eriogonum fasciculatum*), California croton (*Croton californicus*), and telegraph weed (*Heterotheca grandiflora;* see inset cover photographs).

Areas known to have been occupied by DSF or areas that contain restorable habitat for the fly have been divided into three recovery units (Colton, Jurupa, and Ontario Recovery Units). The recovery units (Figure 1) are defined as large geographic areas. However, the occupied and restorable habitat includes only those areas with Delhi Series soils and does not include residential or commercial development or other areas that have been permanently altered by human actions (USFWS, 1997).

Survey Protocols

The Service has developed specific standards for conducting DSF surveys with specific report requirements (1996), as amended. For DSF surveys these standards include the following:

1. Surveys must be conducted by a permitted biologist. Permits are acquired through a testing procedure administered by the Service.
2. Surveys must be conducted at least twice a week from July 1 to September 20 between the hours of 1000 and 1400 PDT. No more than 50 acres per day may be surveyed by an individual biologist.
3. Two consecutive years of surveys with no DSF observed are required to establish absence of the species.
4. Approval to conduct a DSF survey at a site must be obtained from the Service by submitting specific project information to the Service at least 10 working days prior to the anticipated start of the survey.
5. Surveys must be conducted at a relatively slow pace with care taken to avoid harassing any DSF that are located.
6. The Service must be notified within one working day if DSF are observed at a site.

For DSF reports the Service requires the following:

1. Submission of reports to the Service and the California Department of Fish and Game within 30 days of the completion of surveys.
2. A map delineating the boundaries of the site on a 7.5 minute U.S. Geological Survey topographic map.
3. Five color slides or similar photographic material of the site. Two of these are to portray the general landscape of the site and three are to show representative areas within the site that were surveyed for the animal.
4. A map at an adequate scale that indicates the precise location where DSF were located.
5. A qualitative description of the DSF community on the site and a list of plants, reptiles, birds, mammals, and invertebrates observed.

6. A description of methods utilized.
7. Dates and times of field visits, size of habitat surveyed, and weather conditions at the start and end of each survey.
8. Reporting any other significant observations relative to the survey.
9. Completing forms utilized by the Natural Diversity Data Base of the California Department of Fish and Game.
10. Photocopies of original field notes.

The Service standards allow for specific deviations from the protocols at the discretion of the Service. Provisions are also made for rejection of surveys if protocol methodology is not followed, the report is not completed within the time frame allocated, required information is not provided, or other information indicates that the survey is inadequate as determined by the Service.

METHODS

Habitat Suitability Evaluation

A set of criteria were developed to determine if a particular site warranted focused surveys. An area was considered suitable for DSF focused surveys if Delhi Fine soils were visually verified (including areas bordering mapped Delhi soils) unless one or more of the following criteria were met.

Criterion	Example(s)
Area developed.	Buildings, concrete structures, paved roads, houses and associated yards of ornamental species.
Area under active agricultural as evidenced by recent windrows, growing crops, and/or large-scale irrigation.	Crop fields, irrigated pastures
Delhi series soil in the area has been covered by manure	Large portions of dairy farms.
Soils have been compacted	Areas where equipment and/or vehicles often operate, some heavily used pastures. Dirt roads were not included in this category where the compacted area is relatively small in comparison to the unconsolidated area.
Areas of long term standing water	Active retention basins
Areas where sediment other than Delhi soil has been deposited on top of Delhi soils so that the Delhi soils are no longer visible	Some abandoned retention basins. Often the deposition is of organic material.
Area has near a 100% vegetation density of ruderal perennial vegetation in excess of 0.5 m high.	Generally large areas of ruderal vegetation that were probably once agricultural areas
Area is an isolated area of Delhi soils that has not been eliminated for any other reason but is less that approximately 1 acre in size and is not bounded by any area that is considered suitable habitat for a focused survey. An area that includes a series of isolated areas of soils would not be considered to fall into this category.	Tiny isolated areas of soils

Between June 23 and 25, 2005, Gilbert Goodlett conducted a habitat suitability evaluation for several properties including the Rich Haven property. Based on the established criteria, much of the property was deemed unsuitable for focused surveys. Habitat suitability evaluation reports and a map of the proposed survey area were delivered to the U.S. Fish and Wildlife Service on June 27, 2005. On June 29, 2005 U.S. Fish and Wildlife Service biologist Eric Porter reviewed the sites with Gilbert Goodlett and concurred with the determination of areas suitable for focused surveys at the Rich Haven site.

By the 2006 survey season, revisions had been made in the project boundaries resulting in a reduction in acreage from 715.0 acres to its current size of 307.1 acres. There were no additions to the project boundaries so a supplemental habitat suitability evaluation was not necessary. The revisions altered the 2005 focused survey areas such that the 2006 focused survey area is a subset of that which was surveyed in 2005. In 2006 a total of 85.9 acres in five different areas within the project site was identified as suitable for focused surveys.

Protocol Surveys

A total of 46 surveys were conducted at the site between July 1 and September 20, 2006. All surveys were conducted between 1000 and 1400 PDT. Because of the large site size, it was surveyed four times per week. Half of the week's surveys were focused in one area and the other half of the week, surveys were focused on the rest of the site. Another site was also surveyed on the same days as the Rich Haven site by the DSF biologist. Approximately 96% of the survey period was spent on the site.

At the beginning and end of each field visit, the time (PDT) was noted and weather conditions were recorded. Weather conditions included the shaded air temperature at 1.5 meters high measured with a 0.1°C precision thermister or infrared thermometer, the ocularly estimated percentage of cloud cover and type of clouds, and wind speeds and direction. Winds speeds were measured with a Kestrel® brand electronic wind meter. Measurements were taken until average wind speeds stabilized. The average and maximum wind speeds were recorded. Wind direction was estimated by observing the drift direction of a handful of fine soil that was dropped. These data are listed in Table 1.

The site was walked slowly in generally meandering transects and along land features (i.e., dirt roads). The times that each area of the site was surveyed was shifted between surveys such that the entire site was covered during all of the survey period during the day.

Ground level digital photographs (Appendix 1) of the site were taken at various times throughout the survey period by Brian Drake. Photography locations were selected to fulfill Service protocols (2 site overviews and 3 representative habitat photos) and to most accurately represent the sites. Low-level aerial oblique photographs of the site were taken on August 7, 2006 by Brian Drake.

Plant species were noted throughout the survey period. Identification of plants followed The Jepson Manual: Higher Plants of California (Hickman, 1993) and plant communities followed A Manual of California Vegetation (Sawyer and Keeler-Wolf, 1995).

During the field survey, the biologist generally focused on the ground and vegetation in his immediate vicinity in order to increase the likelihood of observing DSF, a low-flying species that is sometimes associated with vegetation. All other species including birds, mammals, reptiles, and invertebrates were recorded. These data were recorded on a digital tape recorder or scrap paper and transferred to a spreadsheet to log daily species, survey times, and weather data, hence there were no original data sheets so none are attached to this report.

A global positioning system device accurate to 10 m was used to record corners and locations of features on the site. These points and polygons were later downloaded to a laptop computer to create an overlay of the points on a U.S. Geological Survey topographic map. These data were utilized to calculate the areas of features on the site and create an accurate map of the site.

Bird identification resources included A Field Guide to Western Birds (Peterson, 1993), Field Guide to the Birds of North America (National Geographic Society, 1987), and Stokes Field Guide to Birds: Western Region (Stokes, 1996). Mammal identification resources included California Mammals (Jameson, 1988) and A Field Guide to the Mammals of North America North of Mexico (Burt and Grossenheider, 1980). Reptile identification resources included A Field Guide to Western Reptiles and Amphibians (Stebbins, 1985). Invertebrate identification resources included Insects of the Los Angeles Basin (Hogue, 1993), A Field Guide to Insects: America North of Mexico (Borror and White, 1970), California Insects (Powell and Hogue, 1979), How to Know the Insects (Bland and Jacques, 1978), Simon and Schuster's Guide to Insects (Arnett and Jacques, 1981), National Audubon Society Guide to North American Insects and Spiders (Milne, 1995), The Butterflies of Southern California (Emmel and Emmel, 1973), and California Butterflies (Garth and Tilden, 1986).

SITE DESCRIPTION

The 307.1 acre Rich Haven site is located in southern Ontario, California within the Service's designated Ontario Recovery Unit (Figure 1; USFWS, 1997). Much of this area is undergoing a transition from dairy and livestock operations and agriculture to residential housing. This site is generally bounded as follows:

- N – Riverside Drive
- W – Haven Avenue
- S – Edison Avenue
- E – Hamner Avenue

Within the 307.1 acre area, 85.9 acres was considered suitable and surveyed for DSF (Figure 2). The site lies at a nominal elevation of 755 ft. and drains toward the Santa Ana River 4.6 miles to the south at less than 1% grade. There are no natural watercourses on the sites. Vegetation on the sites is mostly ruderal with a few scattered native plants. Only one of three plant species typically associated with DSF occupation (California buckwheat, California croton, and telegraph weed) was seen on or around the site. A few isolated examples of California croton were seen. An inexhaustive plant list is presented in Table 1.

General land uses around the sites include abandoned and active dairies, active agriculture, a pig farm, an electrical substation, and residences. The 85.9 acres identified as suitable for focused surveys was divided into five different areas with acreages of 33.8, 39.0, 4.4, 0.5, and 4.3 acres (Figure 2).

The 33.8 acre focused survey area (Appendix 1, Photograph 1) is an agriculture field that was not in use during the survey. The focused survey area is limited to the west by the boundary of the Rich Haven property. The site is bounded on the north by active agriculture, on the west by Haven Avenue with an active dairy further to the west, on the south by a row of eucalyptus trees and a 39.0 acre area (discussed in the next paragraph) that was also surveyed, and on the east by an electrical substation. Vegetation generally consisted of a high density (80%) of low-lying perennials. Exposed soils were found sporadically throughout the site particularly along the margins.

The 39.0 acre focused survey area (Appendix 1, Photograph 2) is a combination of an agriculture field and a portion of an abandoned dairy. The site is bounded on the north by a row of eucalyptus trees with the 33.8 acre focused survey area further to the north, on the west by Haven Avenue with vacant areas further to the west, on the south by a row of eucalyptus trees with a pig farm further to the south, and on the east by an electrical substation. Vegetation density was highly variable ranging from near 0% in some of the northern, abandoned dairy portions of the survey areas to about 80% in the southern agriculture portions of the area. Exposed soils were most prevalent in the northern part of the survey area and along the margins of the southern part of the survey area.

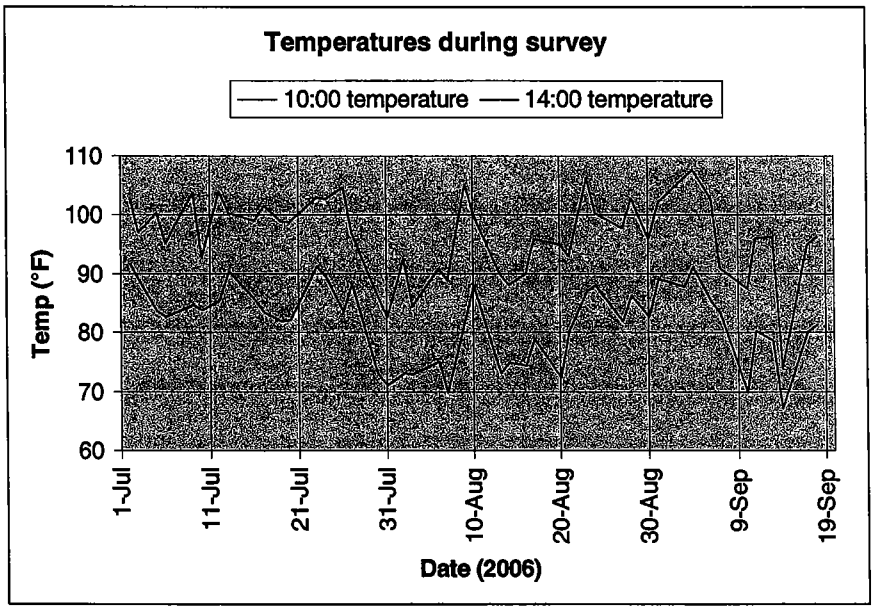
The 4.4 acre and 0.5 acre focused survey areas (Appendix 1, Photograph 3) are part of a pig farm. The 4.4 acre area is a vacant area that lies to the south of the pig farm while the 0.5 acre area is a north-south dirt road on the eastern edge of the pig farm. This area is bounded on the north by a pig farm with a row of eucalyptus trees and the 39.0 acre survey area further to the north, on the west by Haven Avenue, on the south by an active agriculture field, and on the east by retention basins. Vegetation density was very low (<5%) throughout the focused survey area. Within the 4.4 acre area, the most prevalent Delhi soils were exposed in the northwest area of the site, on the west boundary, and along dirt roads adjacent to the site. Except for some vegetation along the edges of retention basins, all of the 0.5 acre area consisted of exposed soils. At the edge of the retention basins, this soil, unlike that within the interior of the pig farm, was relatively undisturbed.

The 4.3 acre focused survey area (Appendix 1, Photograph 4) is a part of an active dairy. The site appears to be used as a pasture and runoff evaporation area. The focused survey portion is composed of strips of exposed soils along the north and western boundaries of the site. It is bounded on the north by an electrical substation, on the west by an active agriculture area, on the south by similar habitat, and on the east by denuded portions of the active dairy. Vegetation density within the focused survey strips was much lower (50%) with more exposed soils than the adjacent habitat.

RESULTS

No DSF were detected during 2005 focused surveys at the Rich Haven site.

No DSF were observed during the 2006 survey season at the site. A total of 46 field visits were completed. Given that approximately 96% of the survey period was spent at the site yields a total of 177 survey hours. The average temperature for surveys was 89.1 °F with an average survey start temperature at 10:00 of 81.6 °F and an average survey end temperature at 14:00 of 96.5 °F (see figure at right). The minimum survey start temperature encountered was 67.0 °F and the maximum ending temperature was 107.7 °F.



Winds were generally from the SW to the NW with westerly winds being most common. The average wind speed for the surveys was 3.1 mph with an average survey start at 10:00 wind speed of 2.1 mph and average survey end wind speed at 14:00 of 4.1 mph. The average maximum wind speed encountered at 10:00 was 3.4 mph while the average maximum wind speed encountered at 14:00 was 6.3 mph. Maximum winds encountered were 11.5 mph at 14:00 on August 27. Dates and times of surveys and weather data are listed in Table 1.

Twenty-five species of plants were identified on the site. They are listed in Table 2. The plant list is not an exhaustive compendium.

A total of 51 species of invertebrates were detected on the site. Two additional invertebrates that were identified to family only were also seen. Thirty-four species of birds, four species of mammals and three species of reptile were also observed. These are listed phylogenetically in Table 3 by survey date.

Five annotated photographs of the site are included in Appendix 1. Appendix 2 is a Service-required field form for use by the California Fish and Game Department to enter biological observations into the California Natural Diversity Data Base.

CONCLUSIONS

Two consecutive years of surveys are required to demonstrate absence of DSF according to U.S. Fish and Wildlife Service protocol. Since surveys have been completed in 2005 and 2006, it is concluded that the site is not occupied by DSF.

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TABLES

Table 1. Survey Times and Weather Data

Date (2006)	Biologist	Start time	End time	Start Temp (°F)	End Temp (°F)	Start Cloud Cover (%)	End Cloud Cover (%)	Start Average Wind Speed (mph)	End Average Wind Speed (mph)	Start Maximum Wind Speed (mph)	End Maximum Wind Speed (mph)	Start Wind Direction	End Wind Direction
2-Jul	Brian Drake	10:00	14:00	91.6	102.9	20%	30%	2.9	1.5	4.1	2.7	SW	S
3-Jul	Brian Drake	10:00	14:00	88.9	96.9	40%	60%	2.3	6.8	3.8	9.2	SW	W
5-Jul	Brian Drake	10:00	14:00	83.6	100.2	0%	10%	2.8	4.4	3.8	5.6	W	SW
6-Jul	Brian Drake	10:00	14:00	82.6	95.2	0%	0%	2.2	4.6	4.2	6.1	SW	W
9-Jul	Brian Drake	10:00	14:00	84.6	103.7	10%	20%	0.0	7.4	0.0	9.8	calm	W
10-Jul	Brian Drake	10:00	14:00	83.8	92.8	0%	10%	4.4	2.8	6.6	8.8	SW	SW
12-Jul	Brian Drake	10:00	14:00	85.4	103.9	0%	0%	2.3	4.6	4.6	7.9	S	NW
13-Jul	Brian Drake	10:00	14:00	90.4	100.2	0%	0%	3.8	3.8	6.5	4.1	NW	W
16-Jul	Brian Drake	10:00	14:00	85.6	99.0	70%	60%	2.7	3.1	4.1	3.9	S	NW
17-Jul	Brian Drake	10:00	14:00	83.4	101.6	50%	40%	0.0	3.6	0.0	7.2	calm	W
19-Jul	Brian Drake	10:00	14:00	81.8	98.8	30%	40%	1.8	5.5	3.0	11.2	W	NW
20-Jul	Brian Drake	10:00	14:00	82.0	98.8	20%	30%	3.8	7.0	5.3	9.6	W	W
23-Jul	Brian Drake	10:00	14:00	91.3	103.0	80%	80%	2.5	4.6	4.2	7.1	SW	SW
24-Jul	Brian Drake	10:00	14:00	89.6	102.6	40%	30%	3.8	6.4	5.2	9.6	SW	NW
26-Jul	Brian Drake	10:00	14:00	83.5	104.6	40%	40%	2.5	3.6	3.6	6.0	S	NW
27-Jul	Brian Drake	10:00	14:00	88.3	96.9	20%	40%	1.7	4.6	3.2	9.3	SW	SW
30-Jul	Brian Drake	10:00	14:00	73.0	86.2	100%	60%	3.4	2.6	5.9	4.2	W	SW
31-Jul	Brian Drake	10:00	14:00	71.0	82.6	100%	100%	4.2	2.4	7.1	4.3	W	W
2-Aug	Brian Drake	10:00	14:00	73.0	92.5	20%	0%	2.8	2.3	4.7	2.7	S	W
3-Aug	Brian Drake	10:00	14:00	72.8	84.5	0%	50%	1.1	3.4	1.8	4.9	SW	SW
6-Aug	Brian Drake	10:00	14:00	75.0	90.8	0%	0%	0.0	4.5	0.0	6.8	calm	W
7-Aug	Brian Drake	10:00	14:00	69.7	88.8	100%	0%	2.0	2.0	4.8	3.3	SW	W
9-Aug	Brian Drake	10:00	14:00	82.2	105.2	10%	10%	2.7	3.6	4.1	5.2	W	W
10-Aug	Brian Drake	10:00	14:00	88.0	100.1	10%	20%	2.4	5.2	4.2	6.7	NW	SW
13-Aug	Brian Drake	10:00	14:00	73.1	89.7	0%	0%	1.6	5.0	3.9	6.1	SW	SW
14-Aug	Brian Drake	10:00	14:00	74.9	88.1	0%	0%	0.0	3.5	0.0	6.5	calm	SW
16-Aug	Brian Drake	10:00	14:00	74.3	89.9	0%	0%	2.5	3.8	4.6	5.5	W	W
17-Aug	Brian Drake	10:00	14:00	78.9	95.8	0%	10%	0.0	1.3	0.0	3.7	calm	NW
20-Aug	Brian Drake	10:00	14:00	72.3	94.9	0%	0%	0.9	4.6	1.7	7.3	SW	SW
21-Aug	Brian Drake	10:00	14:00	80.3	92.9	0%	10%	4.1	4.9	6.1	6.5	SW	W
23-Aug	Brian Drake	10:00	14:00	87.0	106.3	10%	20%	2.3	3.5	3.3	5.4	SW	W
24-Aug	Brian Drake	10:00	14:00	87.9	100.3	0%	10%	0.0	2.5	0.0	5.4	calm	SW
27-Aug	Brian Drake	10:00	14:00	81.8	97.6	0%	0%	2.4	4.7	3.9	11.5	NW	SW
28-Aug	Brian Drake	10:00	14:00	86.2	102.9	0%	0%	1.7	5.3	3.2	6.7	W	W
30-Aug	Brian Drake	10:00	14:00	82.6	95.9	0%	10%	2.5	3.5	4.0	8.2	SW	SW
31-Aug	Brian Drake	10:00	14:00	89.0	102.1	0%	0%	3.0	4.2	4.8	6.0	SW	SW
3-Sep	Brian Drake	10:00	14:00	87.7	106.4	20%	20%	1.8	2.6	4.0	4.0	SW	W

Date (2006)	Biologist	Start time	End time	Start Temp (°F)	End Temp (°F)	Start Cloud Cover (%)	End Cloud Cover (%)	Start Average Wind Speed (mph)	End Average Wind Speed (mph)	Start Maximum Wind Speed (mph)	End Maximum Wind Speed (mph)	Start Wind Direction	End Wind Direction
4-Sep	Brian Drake	10:00	14:00	91.0	107.7	20%	30%	0.0	5.0	0.0	6.3	calm	SW
6-Sep	Brian Drake	10:00	14:00	85.2	102.7	10%	30%	0.0	3.1	0.0	5.0	calm	NW
7-Sep	Brian Drake	10:00	14:00	83.3	90.9	10%	20%	0.0	6.3	0.0	9.0	calm	W
10-Sep	Brian Drake	10:00	14:00	69.7	87.4	10%	30%	1.5	2.4	2.4	4.8	SW	W
11-Sep	Brian Drake	10:00	14:00	80.3	96.1	10%	20%	3.2	4.0	7.5	6.2	SW	SW
13-Sep	Brian Drake	10:00	14:00	78.6	96.2	10%	20%	2.9	3.7	4.7	5.2	W	SW
14-Sep	Brian Drake	10:00	14:00	67.0	73.7	100%	100%	3.9	2.3	6.2	3.2	W	W
17-Sep	Brian Drake	10:00	14:00	80.1	95.0	0%	0%	2.3	3.8	3.2	5.1	W	SW
18-Sep	Brian Drake	10:00	14:00	81.3	96.3	0%	0%	0.0	7.0	0.0	8.2	calm	W

Table 2. List of Plants Observed During 2006 Survey Season Listed Phylogenetically by Order, Family, and Scientific Name

Scientific Name	Common Name	Non-native
ORDER: DICOTYLEDON	**DICOTS**	
Amaranthaceae	**Amaranth Family**	
Amaranthus albus	Tumbleweed	*
Anacardiaceae	**Sumac Family**	
Anacardiaceae schinus molle	Peruvian pepper tree	*
Ambrosia acanthicarpa	Bur-Sage	
Conyza canadensis	Horseweed	
Cirsium vulgare	Bull Thistle	*
Helianthus annuus	Common Sunflower	
Lactuca serriola	Prickly Leaf	*
Stephanomeria vigata	Twiggy Wreath Plant	
Verbesina enceloides	Golden Crownbeard	
Xanthium strumarium	Cocklebur	
Brassicaceae	**Mustard Family**	
Hirschfeldia incana	Shortpod Mustard	*
Chenopodiaceae	**Goosefoot Family**	
Salsola tragus	Russian Thistle	*
Cucurbitaceae	**Gourd Family**	
Cucurbita foetidissima	Calabazilla	
Cuscutaceae	**Dodder Family**	
Cuscuta sp.	Dodder	
Euphorbiaceae	**Spurge Family**	
Croton californicus	California Croton	
Geraniaceae	**Geranium Family**	
Erodium cicutarium	Redstem Filaree	*
Myrtaceae	**Myrtle Family**	
Eucalyptus sp.	Gum Tree	*
Simaroubaceae	**Simarouba Family**	
Ailanthus altissima	Tree of Heaven	*
Solanaceae	**Nightshade Family**	
Datura stramonium	Jimson Weed	*
Nicotiana glauca	Tree Tobacco	*
Zygophyllaceae	**Caltrop Family**	
Tribulus terrestris	Puncture Vine	*
ORDER: MONOCOTYLEDON	**Monocots**	
Poaceae	**Grass Family**	
Avena sp.	Wild Oat	*
Bromus diandrus	Ripgut Grass	*
Cynodon dactylon	Bermuda Grass	*
Scheuchzeriaceae	**Scheuchzeria Family**	
Typha latifolia	Broadleaved Cattail	

Table 3. List of Invertebrates, Birds, Mammals, and Reptiles Observed During 2006 Survey Season Listed Phylogenetically

		July																	August				
Scientific Name	**Common Name**	2	3	5	6	9	10	12	13	16	17	19	29	23	24	26	27	30	31	2	3	6	7	9
INVERTEBRATES																								
ORDER: ODONATA	**DRAGONFLIES AND DAMSELFLIES**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Libellulidae	**Common Skimmers**				X																			
Libellula saturata	Big Red Skimmer				X																			
Coenagrionidae	**Common Damselflies**																X						X	
Argia sp.																	X						X	
ORDER: ORTHOPTERA	**GRASSHOPPERS, KATYDIDS & CRICKETS**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
Acrididae	**Short-horned Grasshoppers**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
Trimerotropis pallidipennis	Pallid Band-winged Grasshopper	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
Gryllidae	**Crickets**		X		X		X		X		X		X		X		X		X		X		X	
Subfamily: Gryllinae	House and Field Crickets		X		X																			
ORDER: MANTODEA	**MANTIDS**																							
Mantidae	**Mantids**																							
Stagmomantis californica	Calfornia Mantid						X		X		X		X		X		X		X		X		X	
ORDER: HEMIPTERA	**TRUE BUGS**							X	X											X				
Reduviidae	**Assassin Bugs**							X	X															
Zelus tetracanthus	Four-spurred Assassin Bug							X	X															
Pentatomidae	**Stink Bugs**																			X				
Chlorochroa sp.	Stink Bug																			X				

		July																	August				
Scientific Name	**Common Name**	2	3	5	6	9	10	12	13	16	17	19	29	23	24	26	27	30	31	2	3	6	7	9
ORDER: NEUROPTERA	**NERVE-WINGED INSECTS**																							
Myrmeleontidae	**Antlions**																							
Brachynemerus sp.	Antlion																							
ORDER:LEPIDOPTERA	**MOTHS AND BUTTERFLIES**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hesperiidae	**Skippers**		X		X	X	X	X	X		X		X			X	X	X	X	X		X	X	X
Atalopedes campestris	Field Skipper																		X					
Hylephila phyleus	Fiery Skipper										X					X	X	X		X		X	X	X
Pyrgus albescens	Common Checkered Skipper		X		X	X	X	X	X		X		X				X						X	X
Lycaenidae	**Blues**	X					X	X								X		X		X	X	X	X	
Brephidium exilis	Pigmy Blue															X				X		X	X	
Icaricia acmon	Acmon Blue																						X	
Strymon melinus	Common Hairstreak	X					X	X										X			X	X		
Nymphalidae	**Brush-footed Butterflies**				X		X												X	X		X		X
Limenitis lorquini	Mourning Cloak																							
Precis coenia	Buckeye				X		X																	X
Vanessa sp.	Unidentified Lady						X												X	X		X		
Danaidae	**Milkweed Butterflies**											X												X
Danaus plexippus	Monarch											X												X
Pieridae	**Whites and Sulfurs**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Colias eurytheme	Alfalfa Sulphur		X			X	X			X		X		X	X	X	X	X	X	X	X	X	X	
Pieris protodice	Common White	X	X	X	X		X	X	X		X	X	X	X	X		X		X	X	X	X		X
Papilionidae	**Swallowtails and Parnassians**													X										
Papilio rutulus	Western Tiger Swallowtail													X										
ORDER: COLEOPTERA	**BEETLES**	X													X	X	X	X	X	X	X	X	X	X
Tenebrionidae	**Darkling Beetles**	X																						
Eleodes gracilis	Darkling Beetle	X																						

		July																	August				
Scientific Name	**Common Name**	2	3	5	6	9	10	12	13	16	17	19	29	23	24	26	27	30	31	2	3	6	7	9
Scarabaeidae	**Scarab Beetles**	**X**													**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Cotinus mutabilis	Green Fruit Beetle	X													X	X	X	X	X	X	X	X	X	X
ORDER: DIPTERA	**FLIES**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Tipulidae	**Crane Flies**											**X**												
Asilidae	**Robber Flies**		**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**						**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Mallophora fautrix	Bumble Bee Robber Fly																	X						
Promachus aldrichii	Robber Fly		X	X	X	X	X	X	X	X	X						X		X	X	X	X	X	X
Mydidae	**Mydas Flies**	**X**		**X**	**X**	**X**									**X**	**X**								**X**
Nemomydas pantherinus	Mydas Fly	X		X	X	X									X	X								X
Bombyliidae	**Bee Flies**	**X**			**X**	**X**	**X**		**X**		**X**	**X**			**X**	**X**	**X**	**X**	**X**	**X**		**X**	**X**	**X**
Exoprosopa sp.	Bee Fly											X												
Poecilanthrax sp.	Bee Fly	X			X		X				X					X						X	X	X
Villa sp.	Bee Fly				X	X	X		X		X				X	X	X	X	X	X		X		X
Xenox sp.	Bee Fly			X																				
Syrphidae	**Syrphid Flies**																		**X**		**X**	**X**		
Eristalis tenax	Drone Fly																		X		X	X		
Volucella mexicana	Cactus Fly																							
Tephritidae	**Fruit Flies**									**X**														
Ceratitis capitata	Mediteranean Fruit Fly									X														
Muscidae	**Muscid Flies**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Musca domestica	House Fly	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Calliphoridae	**Blow Flies**				**X**																			
Phaenicia sericata	Green Bottle Fly				X																			
Sarcophagidae	**Flesh Flies**											**X**						**X**	**X**		**X**	**X**		
Sarcophaga sp	Flesh Fly											X						X	X		X	X		

		July																		August				
Scientific Name	**Common Name**	2	3	5	6	9	10	12	13	16	17	19	29	23	24	26	27	30	31	2	3	6	7	9
ORDER: HYMENOPTERA	**SAWFLIES, ICHNEUMONS, CHALCIDS, ANTS, WASPS, AND BEES**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chrysididae	**Cuckoo Wasps**			X	X	X	X	X		X	X	X		X		X	X	X	X	X			X	X
Parnopes edwardsii	Cuckoo Wasp			X	X	X	X	X		X	X	X		X		X	X	X	X	X			X	X
Scoliidae	**Scoliid Wasps**																							X
Campsomeris tolteca	Scoliid Wasp																							X
Mutillidae	**Velvet Ants**																		X	X	X		X	
Dasymutilla coccineohirta	Red Velvet Ant																		X	X	X		X	
Formicidae	**Ants**		X	X	X	X	X	X	X	X		X		X			X	X	X	X		X	X	X
Pompilidae	**Spider Wasps**																							X
Pepsis sp.	Tarantula Hawk																							X
Vespidae	**Vespid Wasps**		X				X			X				X										X
Polistes fuscatus	Golden Polistes		X				X																	
Sphecidae	**Sphecid Wasps**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ammophila azteca	Thread-waisted Wasp	X					X		X		X				X		X		X		X		X	
Bembix comata	Western Sand Wasp	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chlorion aerarium	Steel Blue Cricket Hunter					X	X	X	X					X	X			X	X	X		X	X	X
Microbembix californica	Sphecid Wasp			X										X				X		X		X		
Philanthus multimaculatus	Sphecid Wasp	X		X		X		X		X		X		X		X	X	X		X		X		X
Prionyx foxi	Sphecid Wasp															X								
Prionyx sp.	Sphecid Wasp											X		X	X			X	X			X		
Halictidae	**Halictid Bees**																						X	
Agapostemon sp.	Metallic Sweat Bee																						X	
Anthophoridae	**Carpenter Bees**		X			X			X	X		X			X			X				X	X	
Melissodes sp.	Anthophorid Bee		X			X			X	X		X			X			X				X	X	
Apidae	**Honey Bees and Bumble Bees**			X				X		X		X								X		X	X	X
Apis mellifera	Honey Bee			X				X		X		X								X		X	X	X

		July																		August				
Scientific Name	**Common Name**	2	3	5	6	9	10	12	13	16	17	19	29	23	24	26	27	30	31	2	3	6	7	9
ORDER: ARANEAE	**SPIDERS**	X	X		X	X	X		X	X				X	X	X							X	X
Agelinidae	**Funnel Web Spiders**	X	X		X	X	X		X	X				X	X	X							X	X
									BIRDS															
ORDER:CICONIIFORMES	**FLAMINGOS, HERONS AND STORKS**		X		X		X		X		X		X				X						X	
Ardeidae	**Herons**		X		X		X		X		X		X				X						X	
Bubulcus ibis	Cattle Egret		X		X		X		X		X		X				X						X	
Threskiornithidae	**Ibises, Spoonbills**																							
Plegadis chihi	White-faced Ibis																							
ORDER: ANSERIFORMES	**DUCKS, GEESE, AND SWANS**					X																		
Anatinae	**Ducks**					X																		
Anas platyrhynchos	Mallard					X																		
Branta canadensis	Canada Goose																							
ORDER: FALCONIFORMES	**HAWKS AND VULTURES**	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cathartidae	**American Vultures**	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cathartes aura	Turkey Vulture	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accipitiridae	**Hawks**					X	X	X	X		X	X		X	X	X	X	X	X		X	X	X	X
Accipiter cooperii	Cooper's Hawk																				X			
Buteo jamaicensis	Red-tailed Hawk					X	X	X	X		X	X		X	X	X	X	X	X	X	X	X	X	X
Buteo lineatus	Red-shouldered Hawk								X								X			X	X		X	X
Elanus caeruleus	Black-shouldered Kite																			X				
Falconidae	**Falcons**						X								X					X		X		
Falco mexicanus	Prairie Falcon																							
Falco sparverius	American Kestrel						X								X					X		X		
ORDER: CHARADRIIFORMES	**GULLS AND SHOREBIRDS**		X						X				X				X		X					
Charadriidae	**Plovers**		X		X				X								X		X					
Charadrius vociferus	Killdeer		X		X				X								X		X					

		July																		August				
Scientific Name	**Common Name**	2	3	5	6	9	10	12	13	16	17	19	29	23	24	26	27	30	31	2	3	6	7	9
Recurvirostridae	**Stilts and Avocets**		X		X								X											
Himantopus mexicanus	Black-necked Stilt		X		X								X											
Scolopacidae	**Sandpipers and Phalaropes**																							
Calidris mauri	Western Sandpiper																							
Laridae	**Jaegers, Skuas, Gulls, Terns, and Skimmers**		X																					
Larus californicus	California Gull		X																					
ORDER: COLUMBIFORMES	**DOVES AND PIGEONS**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
Columbidae	**Pigeons and Doves**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X
Columba livia	Rock Dove	X	X	X		X		X		X				X	X	X			X				X	X
Zenaida macroura	Mourning Dove			X	X		X	X	X		X	X	X	X		X	X	X	X	X	X		X	
ORDER: STRIGIFORMES	**OWLS**						X	X	X		X	X			X	X	X					X		
Strigidae	**Typical Owls**						X	X	X		X	X			X	X	X					X		
Athene cunicularia	Burrowing Owl						X	X	X		X	X			X	X	X					X		
Tyto alba	Barn Owl														X									
ORDER: PASSERIIFORMES	**PASSERINES AND PERCHING BIRDS**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tyranidae	**Flycatchers**		X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Myiarchus cinerascens	Ash Throated Flycatcher					X															X			
Sayornis nigricans	Black Phoebe		X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Tyrannus verticalis	Western Kingbird		X		X				X	X					X	X			X		X			X
Hirundinidae	**Swallows**													X				X	X		X		X	
Hirundo rustica	Barn Swallow													X				X	X		X		X	
Corvidae	**Jays, Magpies, and Crows**	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Corvus brachyrhynchos	American Crow	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Corvus corax	Common Raven																							

		July																	August				
Scientific Name	**Common Name**	2	3	5	6	9	10	12	13	16	17	19	29	23	24	26	27	30	31	2	3	6	7	9
Mimidae	**Mimic Thrashers**		X		X	X	X		X	X	X		X		X		X		X					
Mimus polyglottos	Northern Mockingbird		X		X	X	X		X	X	X		X		X		X		X					
Laniidae	**Shrikes**	X		X		X				X	X			X			X	X	X	X	X		X	
Lanius ludovicianus	Loggerhead Shrike	X		X		X				X	X			X			X	X	X	X	X		X	
Sturnidae	**Starlings**		X	X	X		X		X				X				X		X				X	
Sturnus vulgaris	European Starling		X	X	X		X		X				X				X		X				X	
Emberizidae	**Emberizids**				X	X							X				X		X		X	X		X
Icterus galbula bullockii	Northern Oriole					X																		
Zonotrichia leucophrys	White-crowned Sparrow																							
Agelaius phoeniceus	Red-winged Blackbird																							
Euphagus cyanocephalus	Brewer's Blackbird				X												X		X		X	X		X
Quiscalus quiscula	Common Grackle						X						X								X			
Fringillidae	**Finches**																				X		X	
Carpodacus mexicanus	House Finch																				X		X	
Passeridae	**Weaver Finches**	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
Passer domesticus	House Sparrow	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
									MAMMALS															
ORDER: RODENTIA	**GNAWING MAMMALS**	X	X	X	X	X	X	X	X	X	X		X		X		X	X	X	X	X	X	X	
Sciuridae	**Squirrels**	X	X				X			X	X				X		X	X	X			X	X	
Spermophilus beecheyi	California Ground Squirrel	X	X				X			X	X				X		X	X	X			X	X	
Geomyidae	**Pocket Gophers**	X	X	X	X	X	X	X	X	X	X		X		X		X		X	X	X	X		
Thomomys bottae	Botta's Pocket Gopher	X	X	X	X	X	X	X	X	X	X		X		X		X		X	X	X	X		
ORDER: LAGOMORPHA	**PIKAS, HARES, AND RABBITS**	X	X				X							X		X	X			X	X	X	X	X
Leporidae	**Hares and Rabbits**	X	X				X							X		X	X			X	X	X	X	X
Lepus californicus	Black-tailed Jackrabbit	X	X				X											X			X			
Sylvilagus auduboni	Audubon's Cottontail		X				X							X		X	X			X	X	X	X	X

		July																	August				
Scientific Name	**Common Name**	2	3	5	6	9	10	12	13	16	17	19	29	23	24	26	27	30	31	2	3	6	7	9
REPTILES																								
ORDER:SQUAMATA	**LIZARDS AND SNAKES**			**X**	**X**				**X**					**X**				**X**		**X**				
Iguanidae	**Iguanids**			**X**	**X**				**X**					**X**				**X**		**X**				
Sceloporus occidentalis	Western Fence Lizard			X	X				X					X						X				
Uta stansburiana	Side-blotched Lizard									X								X		X	X	X	X	X
Colubridae	**Colubrids**								**X**															
Pituophis melanoleucus	Gopher snake								X															

Scientific Name	Common Name	August													September									
		10	13	14	16	17	20	21	23	24	27	28	30	31	3	4	6	7	10	11	13	14	17	18
INVERTEBRATES																								
ORDER: ODONATA	**DRAGONFLIES AND DAMSELFLIES**	X	X	X	X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
Libellulidae	**Common Skimmers**																							
Libellula saturata	Big Red Skimmer																							
Coenagrionidae	**Common Damselflies**																					X		
Argia sp.	Damselfly																					X		
ORDER: ORTHOPTERA	**GRASSHOPPERS, KATYDIDS & CRICKETS**	X	X		X	X	X	X	X	X	X		X		X		X		X		X		X	X
Acrididae	**Short-horned Grasshoppers**	X	X		X	X	X	X	X	X	X		X		X		X		X		X		X	X
Trimerotropis pallidipennis	Pallid Band-winged Grasshopper	X	X		X	X	X	X	X	X	X		X		X		X		X		X		X	X
Gryllidae	**Crickets**	X				X		X																
Subfamily: Gryllinae	House and Field Crickets					X		X																
ORDER: MANTODEA	**MANTIDS**	X																						
Mantidae	**Mantids**	X																						
Stagmomantis californica	Calfornia Mantid	X																						
ORDER: HEMIPTERA	**TRUE BUGS**																							
Reduviidae	**Assassin Bugs**																							
Zelus tetracanthus	Four-spurred Assassin Bug																							
Pentatomidae	**Stink Bugs**																							
Chlorochroa sp.	Stink Bug																							
ORDER: NEUROPTERA	**NERVE-WINGED INSECTS**				X						X				X		X		X		X		X	
Myrmeleontidae	**Antlions**				X						X				X		X		X		X		X	
Brachynemerus sp.	Antlion				X						X				X		X		X		X		X	

		August													September									
Scientific Name	**Common Name**	10	13	14	16	17	20	21	23	24	27	28	30	31	3	4	6	7	10	11	13	14	17	18
ORDER:LEPIDOPTERA	**MOTHS AND BUTTERFLIES**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hesperiidae	**Skippers**	X	X	X	X	X	X	X	X	X	X	X		X					X		X	X	X	X
Atalopedes campestris	Field Skipper																							
Hylephila phyleus	Fiery Skipper		X		X	X			X													X		
Pyrgus albescens	Common Checkered Skipper	X	X	X		X	X	X		X	X	X		X					X		X		X	X
Lycaenidae	**Blues**	X	X	X	X	X	X	X	X	X			X		X	X	X	X	X	X	X	X	X	X
Brephidium exilis	Pigmy Blue			X	X	X	X	X	X	X			X		X	X	X	X	X	X	X	X	X	X
Icaricia acmon	Acmon Blue	X																						
Strymon melinus	Common Hairstreak		X			X				X														
Nymphalidae	**Brush-footed Butterflies**	X		X	X	X		X		X														X
Limenitis lorquini	Mourning Cloak					X																		
Precis coenia	Buckeye				X	X																		
Vanessa sp.	Unidentified Lady	X		X		X		X		X														X
Danaidae	**Milkweed Butterflies**																							
Danaus plexippus	Monarch																							
Pieridae	**Whites and Sulfurs**	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X		X		X	X
Colias eurytheme	Alfalfa Sulphur	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X		X		X	X
Pieris protodice	Common White	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X							
Papilionidae	**Swallowtails and Parnassians**																							
Papilio rutulus	Western Tiger Swallowtail																							
ORDER: COLEOPTERA	**BEETLES**		X	X		X	X	X	X	X	X		X				X		X		X	X	X	
Tenebrionidae	**Darkling Beetles**				X																			
Eleodes gracilis	Darkling Beetle				X																			
Scarabaeidae	**Scarab Beetles**		X	X	X	X	X	X	X	X	X		X				X		X		X	X	X	
Cotinus mutabilis	Green Fruit Beetle		X	X	X	X	X	X	X	X	X		X				X		X		X	X	X	
ORDER: DIPTERA	**FLIES**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tipulidae	**Crane Flies**																							

		August													September									
Scientific Name	**Common Name**	10	13	14	16	17	20	21	23	24	27	28	30	31	3	4	6	7	10	11	13	14	17	18
Asilidae	**Robber Flies**										**X**				**X**		**X**				**X**	**X**	**X**	
Mallophora fautrix	Bumble Bee Robber Fly																							
Promachus aldrichii	Robber Fly										X				X		X				X	X	X	
Mydidae	**Mydas Flies**						**X**		**X**		**X**										**X**		**X**	
Nemomydas pantherinus	Mydas Fly						X		X		X										X		X	
Bombyliidae	**Bee Flies**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Exoprosopa sp.	Bee Fly																							
Poecilanthrax sp.	Bee Fly	X			X	X	X		X	X	X	X		X	X	X	X	X		X	X	X		X
Villa sp.	Bee Fly	X	X	X	X	X		X	X		X		X		X		X		X		X		X	X
Xenox sp.	Bee Fly																							
Syrphidae	**Syrphid Flies**		**X**		**X**		**X**	**X**														**X**		
Eristalis tenax	Drone Fly		X				X	X														X		
Volucella mexicana	Cactus Fly				X																			
Tephritidae	**Fruit Flies**																							
Ceratitis capitata	Mediterranean Fruit Fly																							
Muscidae	**Muscid Flies**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Musca domestica	House Fly	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Calliphoridae	**Blow Flies**																							
Phaenicia sericata	Green Bottle Fly																							
Sarcophagidae	**Flesh Flies**			**X**			**X**		**X**				**X**		**X**		**X**	**X**		**X**				
Sarcophaga sp	Flesh Fly			X			X		X				X		X		X	X		X				
ORDER: HYMENOPTERA	**SAWFLIES, ICHNEUMONS, CHALCIDS, ANTS, WASPS, AND BEES**		**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Chrysididae	**Cuckoo Wasps**		**X**	**X**	**X**	**X**		**X**			**X**	**X**		**X**											**X**
Parnopes edwardsii	Cuckoo Wasp		X	X	X	X	X	X			X	X		X											X
Scoliidae	**Scoliid Wasps**																							
Campsomeris tolteca	Scoliid Wasp																							

		August													September									
Scientific Name	**Common Name**	10	13	14	16	17	20	21	23	24	27	28	30	31	3	4	6	7	10	11	13	14	17	18
Mutillidae	**Velvet Ants**																					**X**		
Dasymutilla coccineohirta	Red Velvet Ant																					X		
Formicidae	**Ants**		**X**	**X**	**X**	**X**	**X**	**X**		**X**	**X**								**X**		**X**	**X**	**X**	**X**
Pompilidae	**Spider Wasps**																							
Pepsis sp.	Tarantula Hawk																							
Vespidae	**Vespid Wasps**						**X**																	
Polistes fuscatus	Golden Polistes																							
Sphecidae	**Sphecid Wasps**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Ammophila azteca	Thread-waisted Wasp	X				X				X						X		X		X		X		X
Bembix comata	Western Sand Wasp	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chlorion aerarium	Steel Blue Cricket Hunter	X	X		X		X		X		X													
Microbembix californica	Sphecid Wasp																							
Philanthus multimaculatus	Sphecid Wasp				X		X	X	X		X				X		X							X
Prionyx foxi	Sphecid Wasp	X																						
Prionyx sp.	Sphecid Wasp			X		X										X								
Halictidae	**Halictid Bees**		**X**		**X**			**X**																
Agapostemon sp.	Metallic Sweat Bee		X		X			X																
Anthophoridae	**Carpenter Bees**				**X**																			
Melissodes sp.	Anthophorid Bee				X																			
Apidae	**Honey Bees and Bumble Bees**	**X**	**X**	**X**	**X**	**X**		**X**	**X**	**X**														**X**
Apis mellifera	Honey Bee	X	X	X	X	X		X	X	X														X
ORDER: ARANEAE	**SPIDERS**						**X**	**X**				**X**		**X**										
Agelinidae	**Funnel Web Spiders**						**X**	**X**				**X**		**X**										
BIRDS																								
ORDER:CICONIIFORMES	**FLAMINGOS, HERONS AND STORKS**	**X**						**X**		**X**									**X**		**X**	**X**		**X**
Ardeidae	**Herons**	**X**						**X**		**X**												**X**		**X**
Bubulcus ibis	Cattle Egret	X						X		**X**												X		X

		August													September									
Scientific Name	**Common Name**	10	13	14	16	17	20	21	23	24	27	28	30	31	3	4	6	7	10	11	13	14	17	18
Threskiornithidae	**Ibises, Spoonbills**							**X**											**X**		**X**			
Plegadis chihi	White-faced Ibis							X											X		X			
ORDER: ANSERIFORMES	**DUCKS, GEESE, AND SWANS**																					**X**		**X**
Anatinae	**Ducks**																							**X**
Anas platyrhynchos	Mallard																							X
Branta canadensis	Canada Goose																					X		
ORDER: FALCONIFORMES	**HAWKS AND VULTURES**	**X**	**X**	**X**	**X**	**X**		**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Cathartidae	**American Vultures**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**		**X**			**X**		**X**	**X**	**X**	**X**	**X**	**X**	**X**
Cathartes aura	Turkey Vulture	X	X	X	X	X	X	X	X	X	X		X			X		X	X	X	X	X	X	X
Accipitiridae	**Hawks**	**X**	**X**	**X**		**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**		**X**					**X**		**X**
Accipiter cooperii	Cooper's Hawk					X		X																
Buteo jamaicensis	Red-tailed Hawk	X		X		X	X	X	X	X	X	X		X								X		X
Buteo lineatus	Red-shouldered Hawk		X					X	X	X	X		X		X		X							
Elanus caeruleus	Black-shouldered Kite				X																			
Falconidae	**Falcons**				**X**				**X**	**X**		**X**		**X**								**X**		
Falco mexicanus	Prairie Falcon									X		X		X										
Falco sparverius	American Kestrel				X				X													X		
ORDER: CHARADRIIFORMES	**GULLS AND SHOREBIRDS**									**X**		**X**												
Charadriidae	**Plovers**																							
Charadrius vociferus	Killdeer																							
Recurvirostridae	**Stilts and Avocets**									**X**														
Himantopus mexicanus	Black-necked Stilt									**X**														
Scolopacidae	**Sandpipers and Phalaropes**									**X**		**X**												
Calidris mauri	Western Sandpiper									**X**		X												
Laridae	**Jaegers, Skuas, Gulls, Terns, and Skimmers**																							
Larus californicus	California Gull																							

		August													September									
Scientific Name	**Common Name**	10	13	14	16	17	20	21	23	24	27	28	30	31	3	4	6	7	10	11	13	14	17	18
ORDER: COLUMBIFORMES	**DOVES AND PIGEONS**	**X**	**X**	**X**	**X**	**X**		**X**	**X**		**X**					**X**		**X**		**X**		**X**		**X**
Columbidae	**Pigeons and Doves**	**X**	**X**	**X**	**X**	**X**		**X**	**X**		**X**					**X**		**X**		**X**		**X**		**X**
Columba livia	Rock Dove	X	X		X				X		X													
Zenaida macroura	Mourning Dove	X		X		X		X			X					X		X		X		X		X
ORDER: STRIGIFORMES	**OWLS**			**X**		**X**			**X**															
Strigidae	**Typical Owls**			**X**		**X**			**X**															
Athene cunicularia	Burrowing Owl			X		X																		
Tyto alba	Barn Owl								X															
ORDER: PASSERIIFORMES	**PASSERINES AND PERCHING BIRDS**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Tyranidae	**Flycatchers**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**		**X**	**X**	**X**	**X**	**X**
Myiarchus cinerascens	Ash Throated Flycatcher	X		X				X																X
Sayornis nigricans	Black Phoebe	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
Tyrannus verticalis	Western Kingbird			X	X					X		X				X								
Hirundinidae	**Swallows**			**X**		**X**	**X**	**X**		**X**									**X**		**X**	**X**	**X**	
Hirundo rustica	Barn Swallow			X		X	X	X		X									X		X	X	X	
Corvidae	**Jays, Magpies, and Crows**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**		**X**		**X**		**X**	**X**	**X**	**X**	**X**	**X**	**X**
Corvus brachyrhynchos	American Crow	X	X	X	X	X	X	X	X	X	X	X		X		X		X	X	X	X	X	X	X
Corvus corax	Common Raven															X								
Mimidae	**Mimic Thrashers**	**X**						**X**																**X**
Mimus polyglottos	Northern Mockingbird	X						X																X
Laniidae	**Shrikes**	**X**		**X**				**X**																**X**
Lanius ludovicianus	Loggerhead Shrike	X		X				X																X
Sturnidae	**Starlings**	**X**				**X**		**X**		**X**												**X**		**X**
Sturnus vulgaris	European Starling	**X**				X		X		X												X		X

		August													September									
Scientific Name	**Common Name**	10	13	14	16	17	20	21	23	24	27	28	30	31	3	4	6	7	10	11	13	14	17	18
Emberizidae	**Emberizids**			X			X				X	X										X		
Icterus galbula bullockii	Northern Oriole																							
Zonotrichia leucophrys	White-crowned Sparrow																							X
Agelaius phoeniceus	Red-winged Blackbird											X												
Euphagus cyanocephalus	Brewer's Blackbird			X			X				X											X		
Quiscalus quiscula	Common Grackle																							
Fringillidae	**Finches**	X		X		X		X		X						X						X		X
Carpodacus mexicanus	House Finch	X		X		X		X		X						X						X		X
Passeridae	**Weaver Finches**	X		X			X	X		X	X	X		X								X		X
Passer domesticus	House Sparrow	X		X			X	X		X	X	X		X								X		X
MAMMALS																								
ORDER: RODENTIA	**GNAWING MAMMALS**	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X
Sciuridae	**Squirrels**		X	X	X	X		X	X	X	X		X			X	X	X		X		X		X
Spermophilus beecheyi	California Ground Squirrel		X	X	X	X		X	X	X	X					X		X		X		X		X
Geomyidae	**Pocket Gophers**	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X
Thomomys bottae	Botta's Pocket Gopher	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X
ORDER: LAGOMORPHA	**PIKAS, HARES, AND RABBITS**				X		X		X							X								
Leporidae	**Hares and Rabbits**	X	X		X		X		X							X								
Lepus californicus	Black-tailed Jackrabbit	X	X		X																			
Sylvilagus auduboni	Audubon's Cottontail				X		X		X							X								

		August													September									
Scientific Name	**Common Name**	10	13	14	16	17	20	21	23	24	27	28	30	31	3	4	6	7	10	11	13	14	17	18
REPTILES																								
ORDER:SQUAMATA	**LIZARDS AND SNAKES**	**X**		**X**	**X**	**X**		**X**	**X**	**X**			**X**						**X**					
Iguanidae	**Iguanids**	**X**		**X**	**X**	**X**		**X**	**X**	**X**			**X**						**X**					
Sceloporus occidentalis	Western Fence Lizard							X	X	X			X											
Uta stansburiana	Side-blotched Lizard	X		X	X	X			X		X					X			X			X		X
Colubridae	**Colubrids**																							
Pituophis melanoleucus	Gopher snake																							

FIGURES

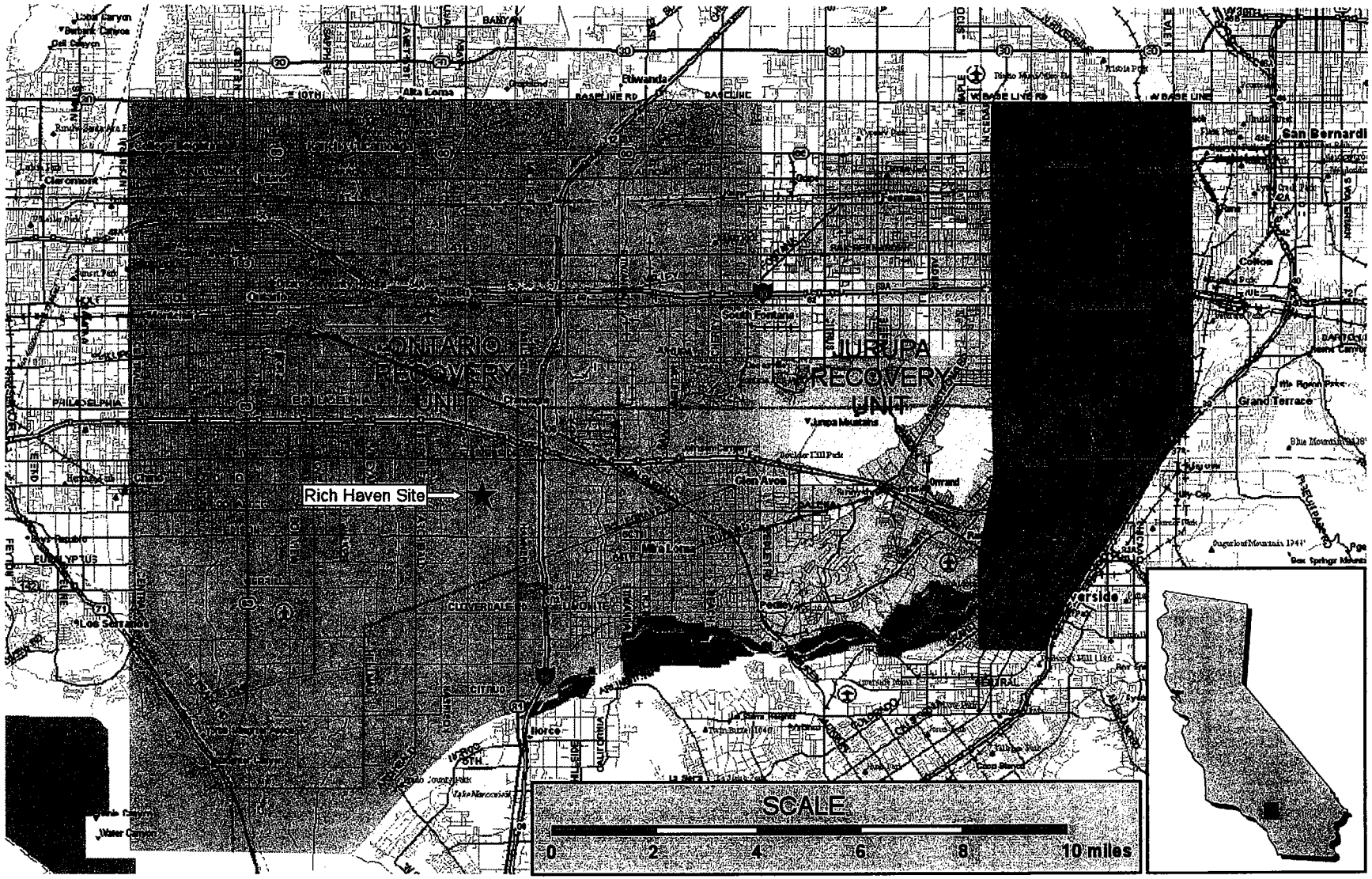


Figure 1. Project Vicinity and Recovery Unit Map

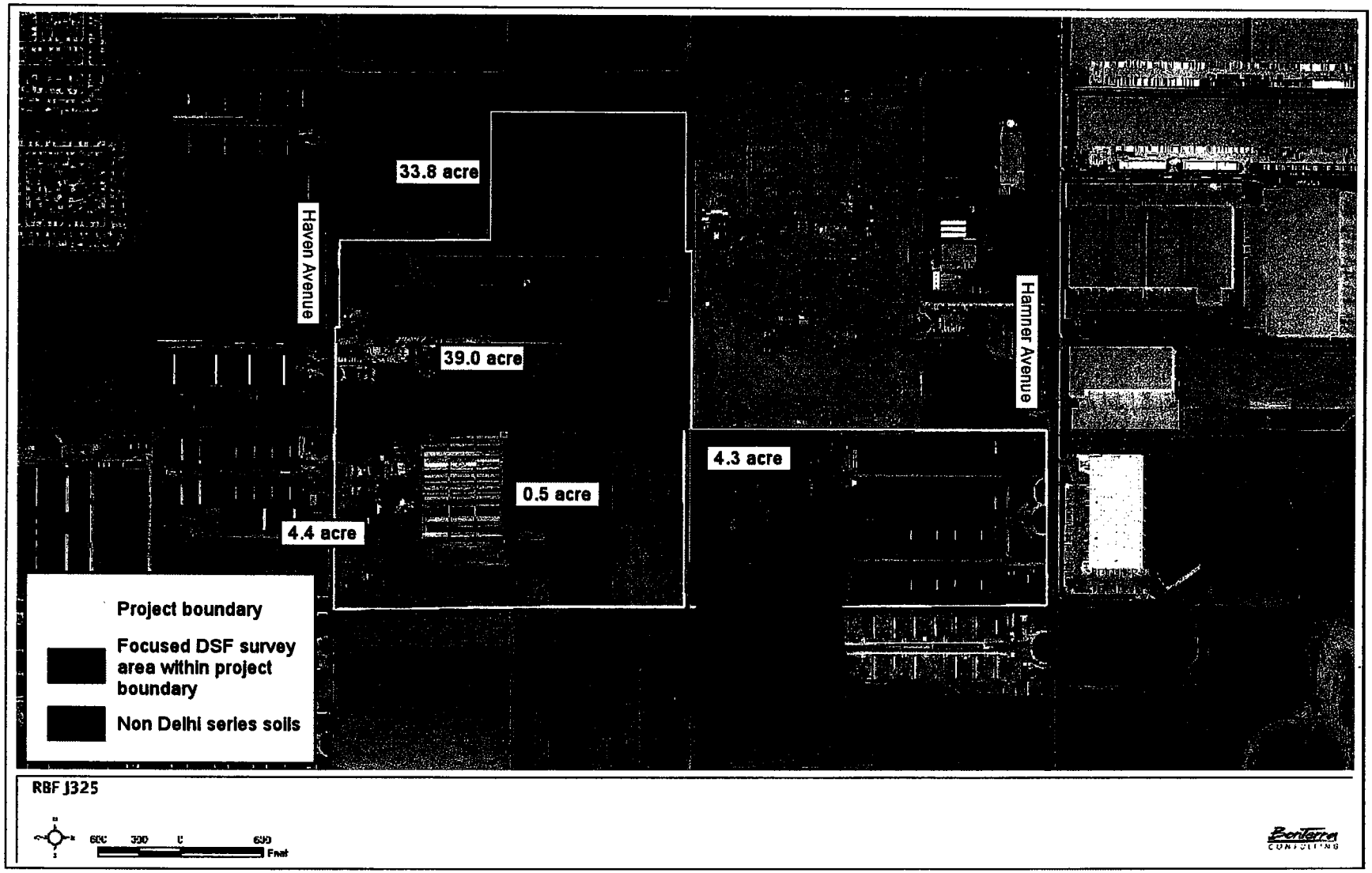
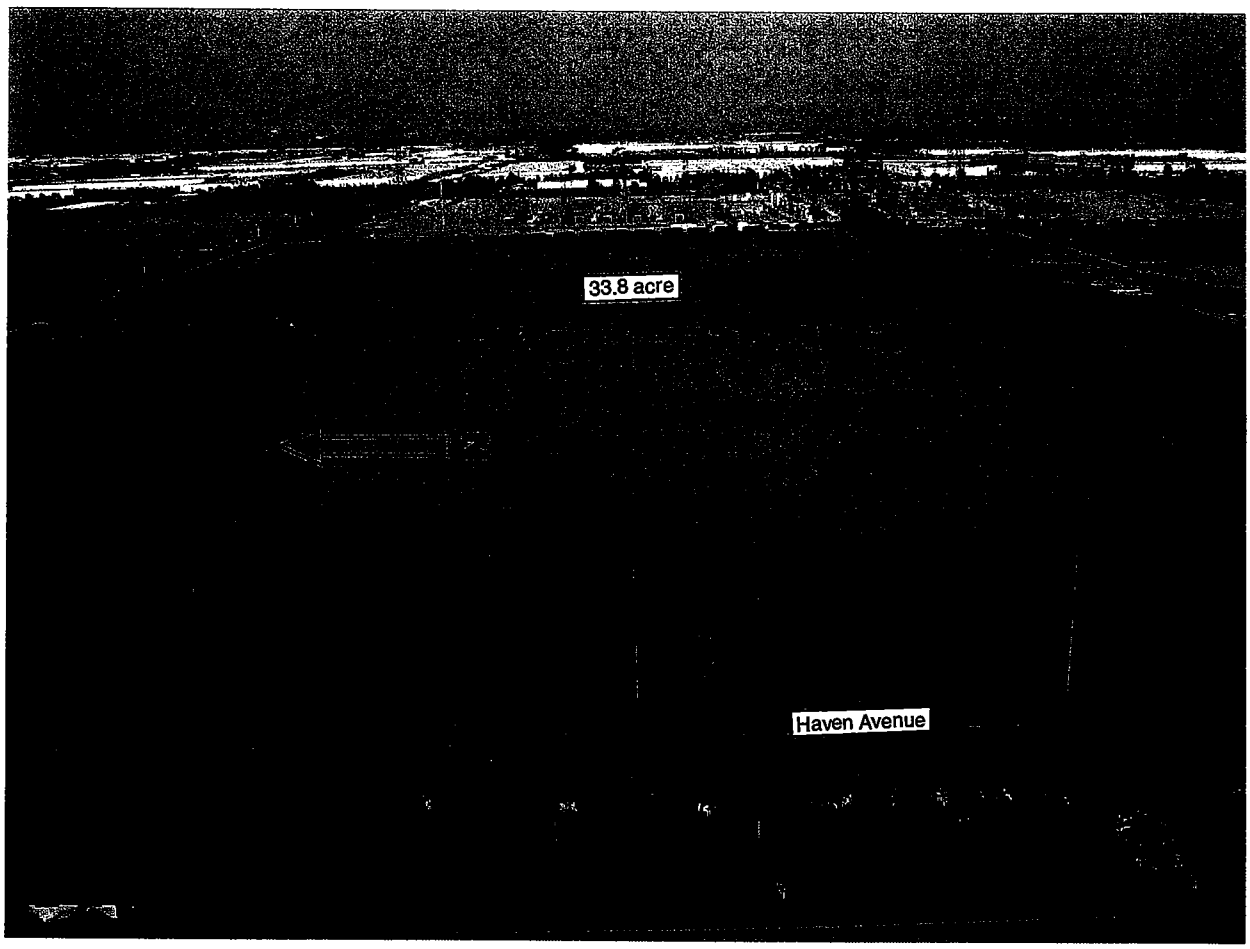


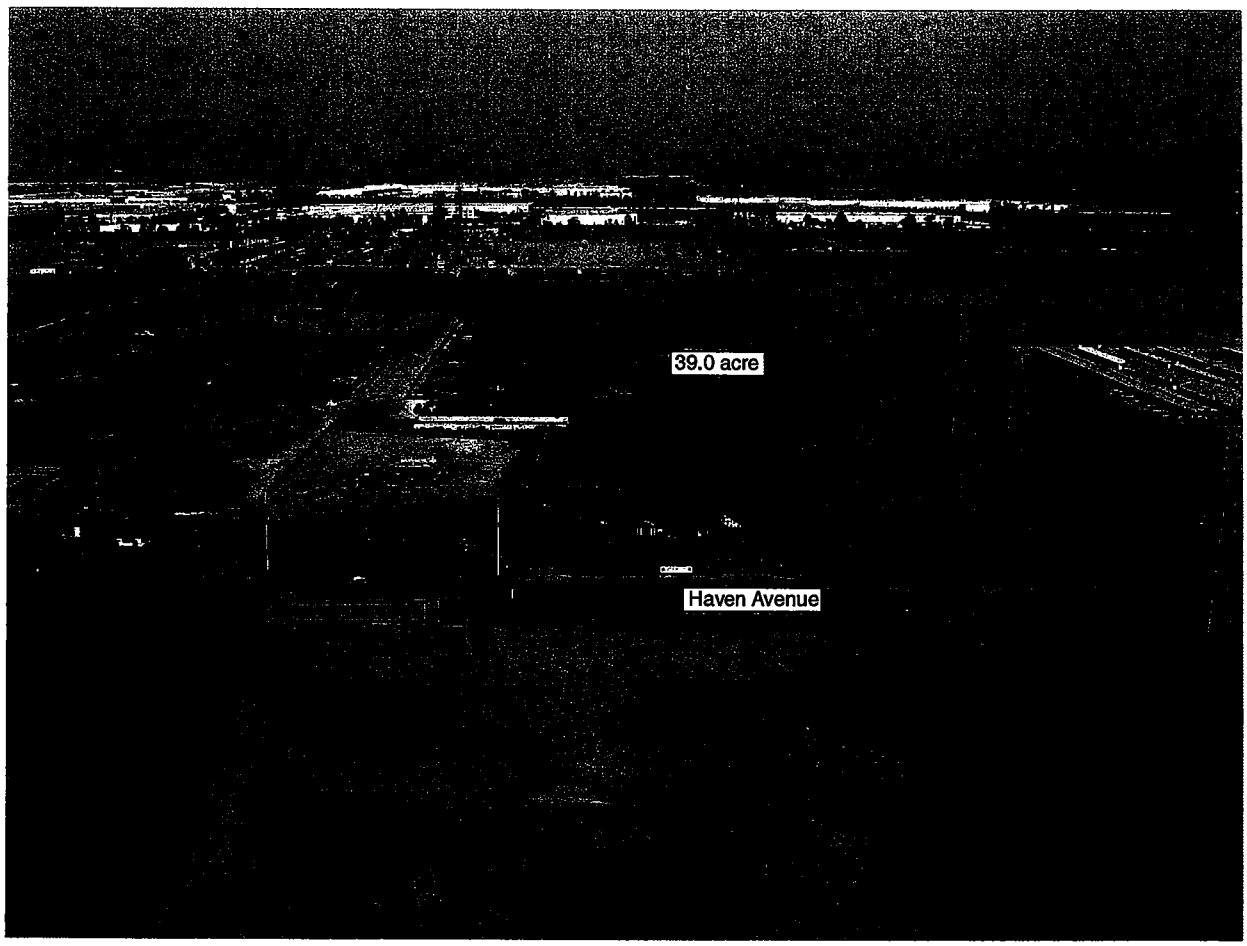
Figure 2. Site Map Showing Boundary, Individual Survey Areas, and Soils

APPENDICES

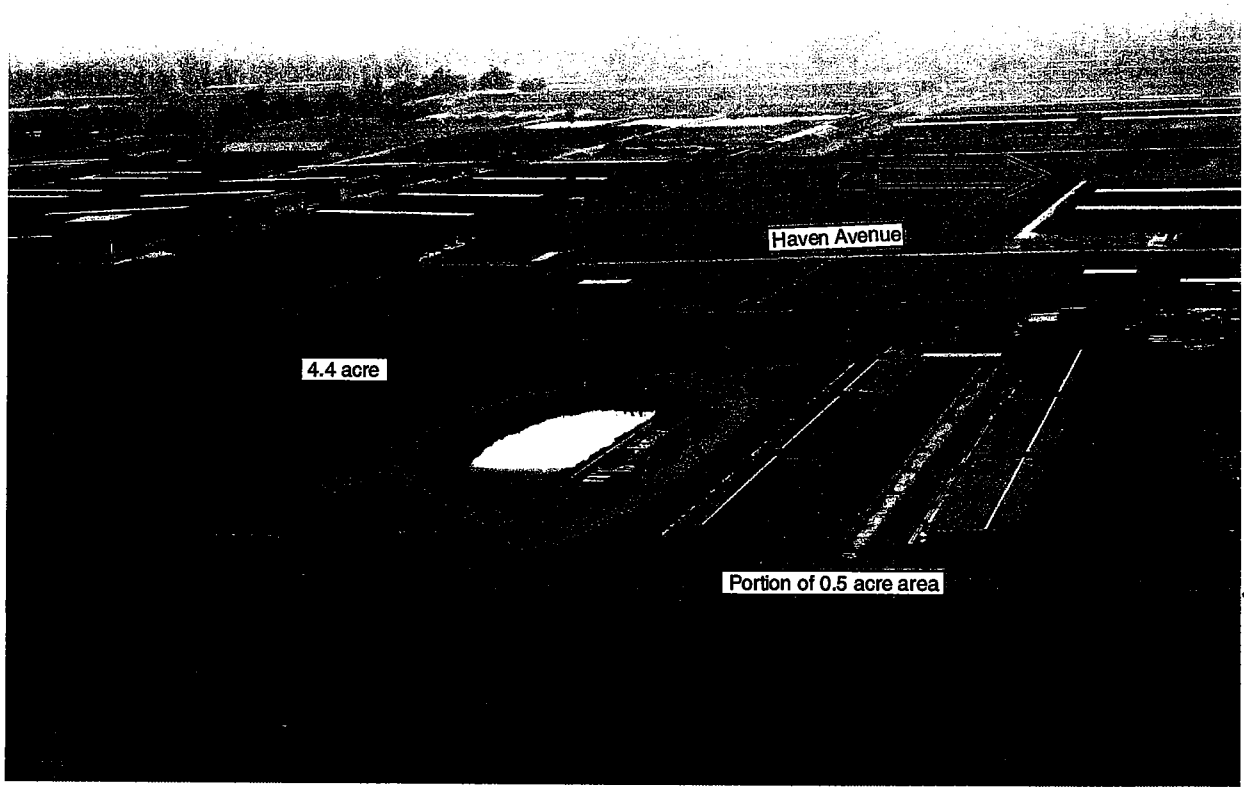
APPENDIX 1. SITE PHOTOGRAPHS



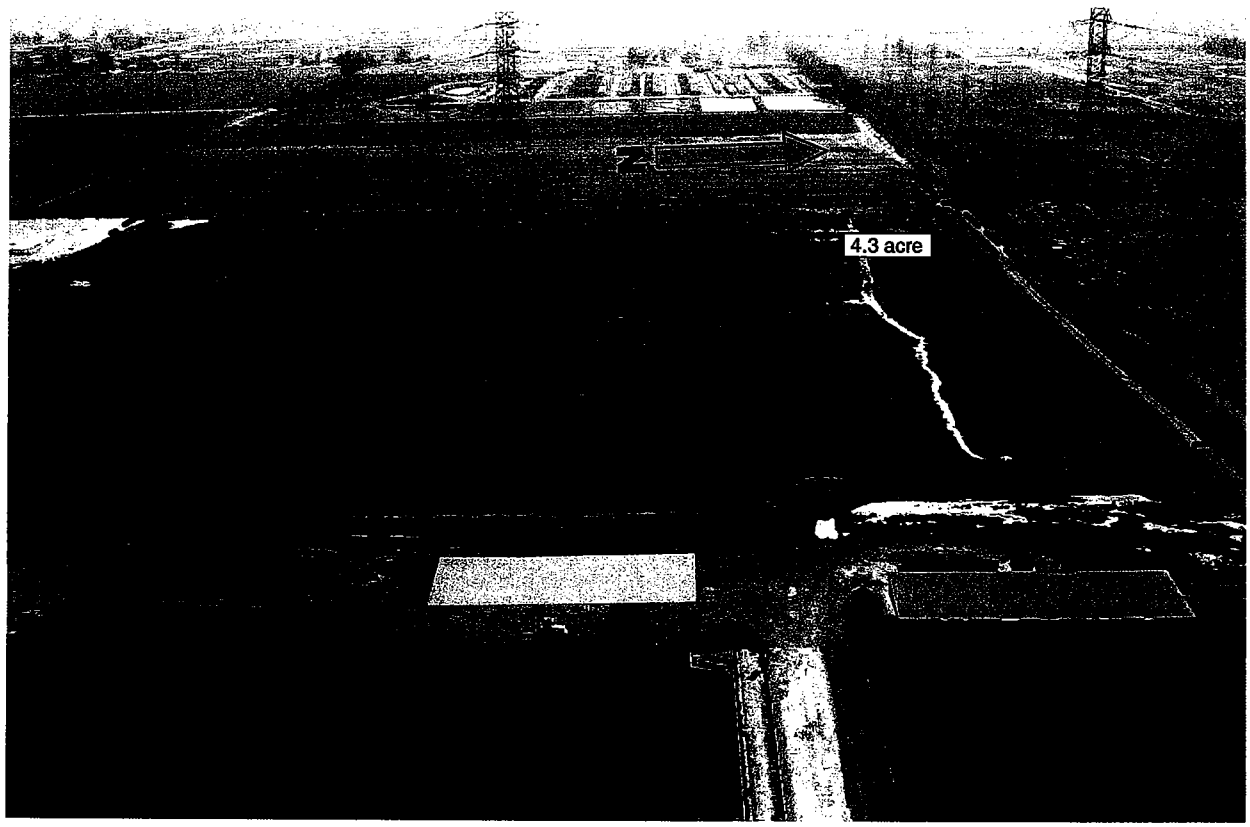
Photograph 1. Aerial oblique view of the Rich Haven 33.8 acre focused survey area.



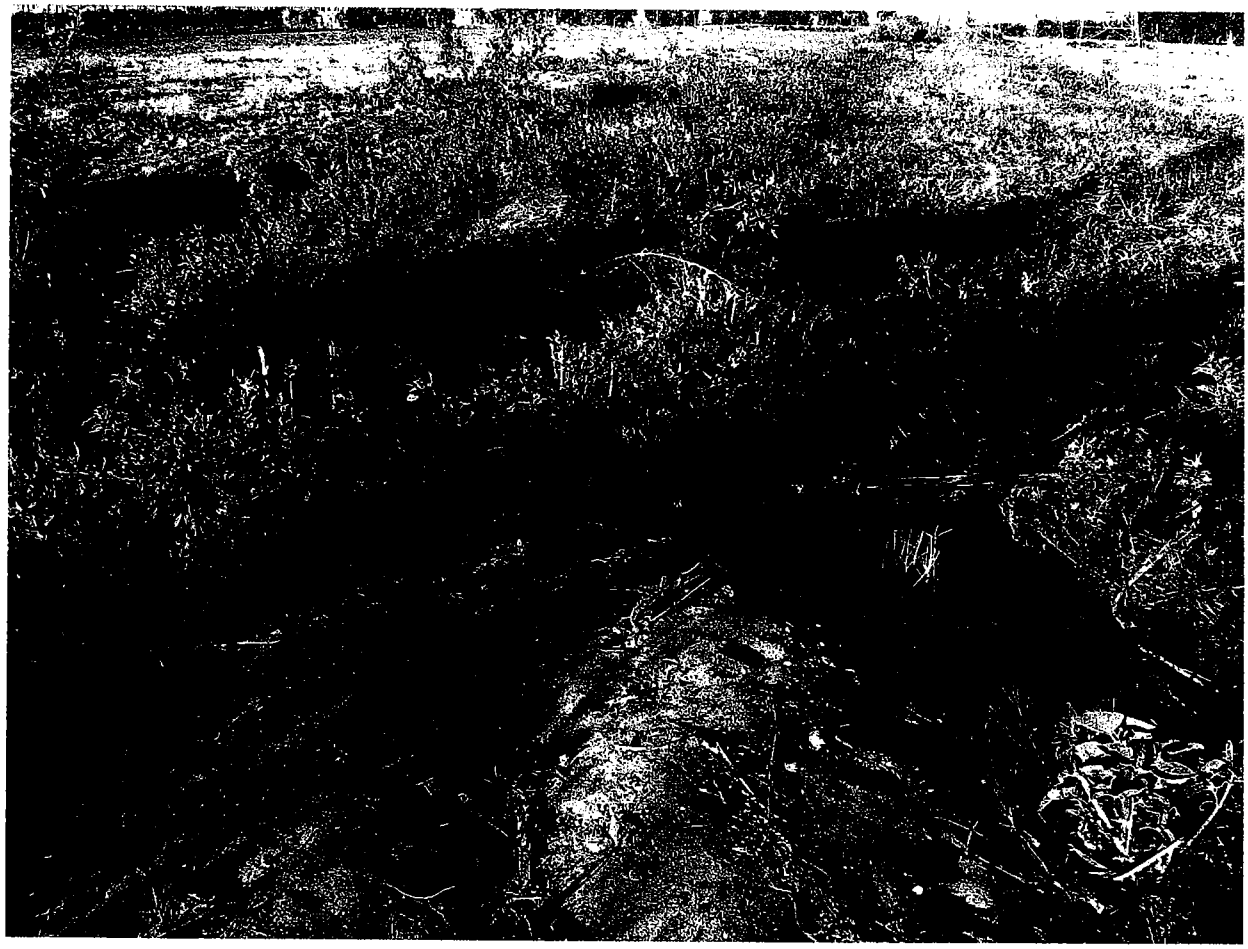
Photograph 2. Aerial oblique view of the Rich Haven 39.0 acre focused survey area.



Photograph 3. Aerial oblique view of the Rich Haven 4.4 acre and a portion of the 0.5 acre focused survey area.



Photograph 4. Aerial oblique view of the Rich Haven 4.3 acre focused survey area.



Photograph 5. Closeup of typical soils at the Rich Haven focused survey area.

APPENDIX 2. CALIFORNIA NATIVE SPECIES FIELD SURVEY FORM

California Native Species Field Survey Form

Mailto:
Natural Diversity Database
California Dept. of Fish and Game
1807 13th Street, Suite 202
Sacramento, CA 95814

For Office Use Only
Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Date of Field Work: 7/1 to 9/20 - 2006 (month (mm) date (dd) year (yyyy))

Scientific Name: *Rhaphiomidas terminatus abdominalis*

Common Name: Delhi Sands Flower-loving Fly

Species Found? ☐ yes ☒ no — If not, why? 46 total

Total No. Individuals 0 Subsequent Visit? ☒ yes ☐ no

Is this an existing NDDB occurrence? _____ ☐ no ☒ unk. (Yes, Occ. #)

Collection? If yes: _____ Number Museum / Herbarium

Reporter: Gilbert Goodlett
Address: 1660 West Franklin Avenue
Ridgecrest, California 93555

Email Address: torthunter@aol.com
Phone: (760) 371-3592

Plant Information

Phenology: 60 % vegetative 40 % flowering 20 % fruiting
Phenology data was not collected and these data are speculative

Animal Information

Age Structure: 0 # adults 0 # juveniles 0 # unknown
☐ breeding ☐ wintering ☐ burrow site ☐ rookery ☐ nesting ☐ other

Location (please also attach or draw map on back)

County: San Bernardino Landowner/Mgr.: Chambers Group
Quad Name: Guasti and Corona North 1:24,000 Elevation: 718 ft.
T 2S R 7W N 1/2 1/4 of __ 1/4 of Section 14 T ____ R ____ ____ 1/4 of ____ 1/4 of Section ____
UTM Zone: 11 (10, 11) Datum: NAD27 (NAD83, NAD27, WGS84, other)
Source: GPS (GPS, map & type, etc.) Point Accuracy: 10 Meters
UTM Coordinates 04 45 837E, 37 61 987N

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)
Ruderal area located on Delhi Series fine soils.

Other rare species? None observed

Site Information Overall site quality ☐ Excellent ☐ Good ☐ Fair ☒ Poor

Current/surrounding land use: Dairies, chicken egg farm, rural residential

Visible disturbances/ possible threats: Development

Comments: This form submitted as per U.S. Fish and Wildlife Service protocols for Delhi Sands Flower-loving Fly surveys

Determination: (check one or more, and fill in blanks)
☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☒ Other: Extensive field experience in ID of species

Photographs: (check one or more) Slide Print
Plant / animal ☐ ☐
Habitat (Digital format) ☐ ☒
Diagnostic feature ☐ ☐
May we obtain duplicates at our expense? ☒ yes ☐ no

FG/WHDAB /1747 Rev.11/99

B-2 Delineation of Jurisdictional Waters

DELINEATION OF JURISDICTIONAL WATERS

Rich Haven Specific Plan
Ontario, California

Prepared For:

Richland Communities, INC.
4100 Newport Place, Suite 800
Newport Beach, California 92660
Contact: Mr. Jim Powers

Prepared By:

RBF Consulting
14725 Alton Parkway
Irvine, California 92618
Contact: Mr. Richard Beck
949/855-3687

January 6, 2006
JN 65-100102

DELINEATION OF JURISDICTIONAL WATERS

Rich Haven Specific Plan
Ontario, California

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a jurisdictional "waters of the U.S." (including wetlands) and "waters of the State" determination for the above-referenced project.

RBF CONSULTING

Richard Beck
Regulatory Manager

Bruce R. Grove, Jr.
Senior Associate, REA
Environmental Services-Special Projects

January 2006

TABLE OF CONTENTS

1.0 INTRODUCTION AND PURPOSE

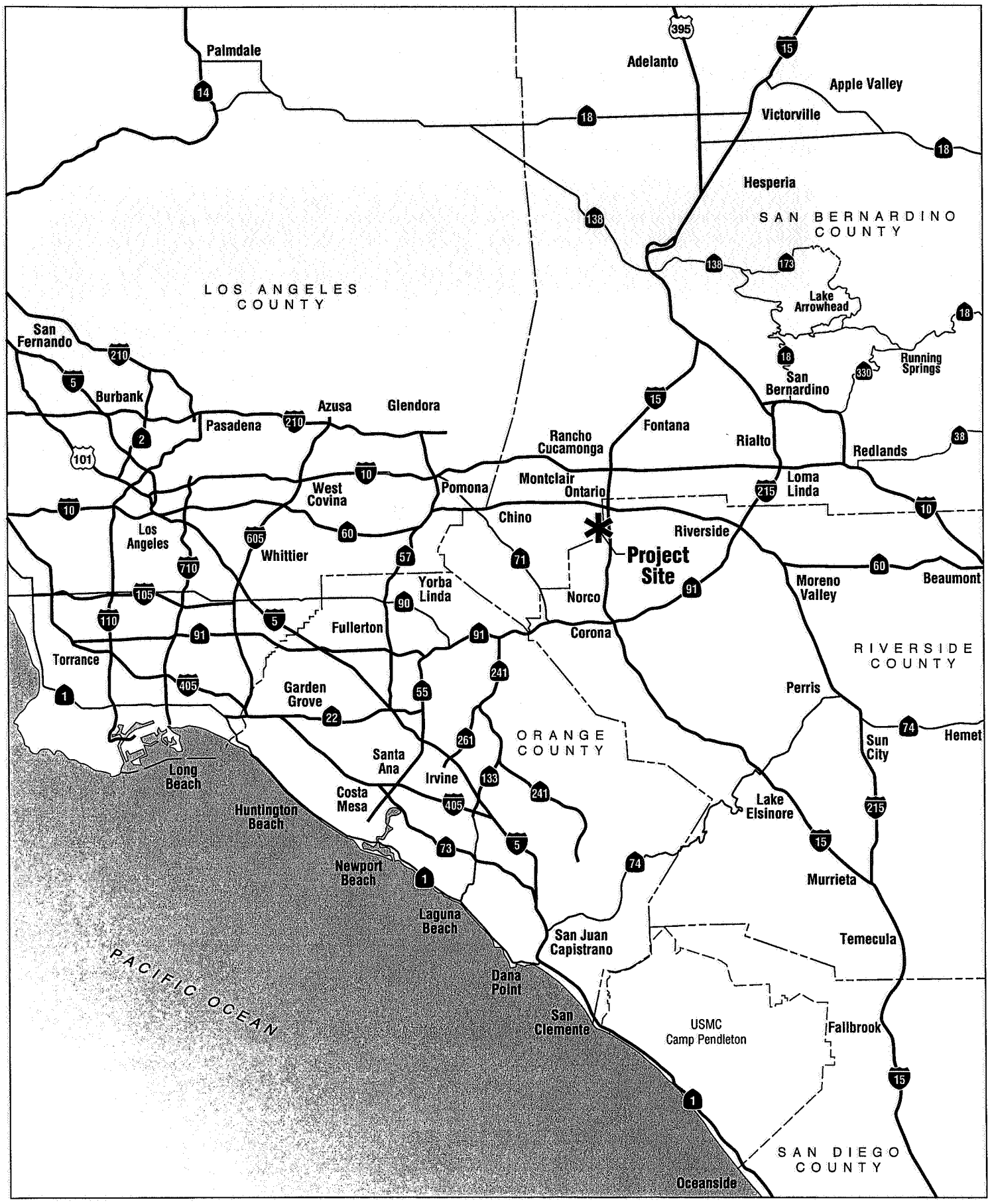
This delineation was prepared for Richland Communities, LLC, in order to delineate the U.S. Army Corps of Engineers' (ACOE), Regional Water Quality Control Board's (RWQCB), and California Department of Fish and Game's (CDFG) jurisdictional authority for drainages located within the Rich-Haven Specific Plan, herein referred to as the project site.

The project site is located south of State Route 60 (SR-60) in the City of Ontario, County of San Bernardino. More specifically, the project site is located north of Edison Avenue, south of Riverside Drive, east of Haven Avenue and west of Hamner (also known as Milliken) Avenue (refer to Exhibits 1-2).

This delineation has been designed to document the authority of the regulatory agencies, the methodology undertaken by RBF Consulting (RBF) to document jurisdictional authority, and the findings made by RBF within the boundaries of the project site. This report presents our best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies; however, only the regulatory agencies can make a final determination of jurisdictional boundaries.

1.1 Project Description

Specific land uses currently remain undefined; however, uses shall be consistent with those identified within the Rich-haven Specific Plan. The Rich-Haven Specific Plan uses include residential, park, and commercial development.



RBF CONSULTING

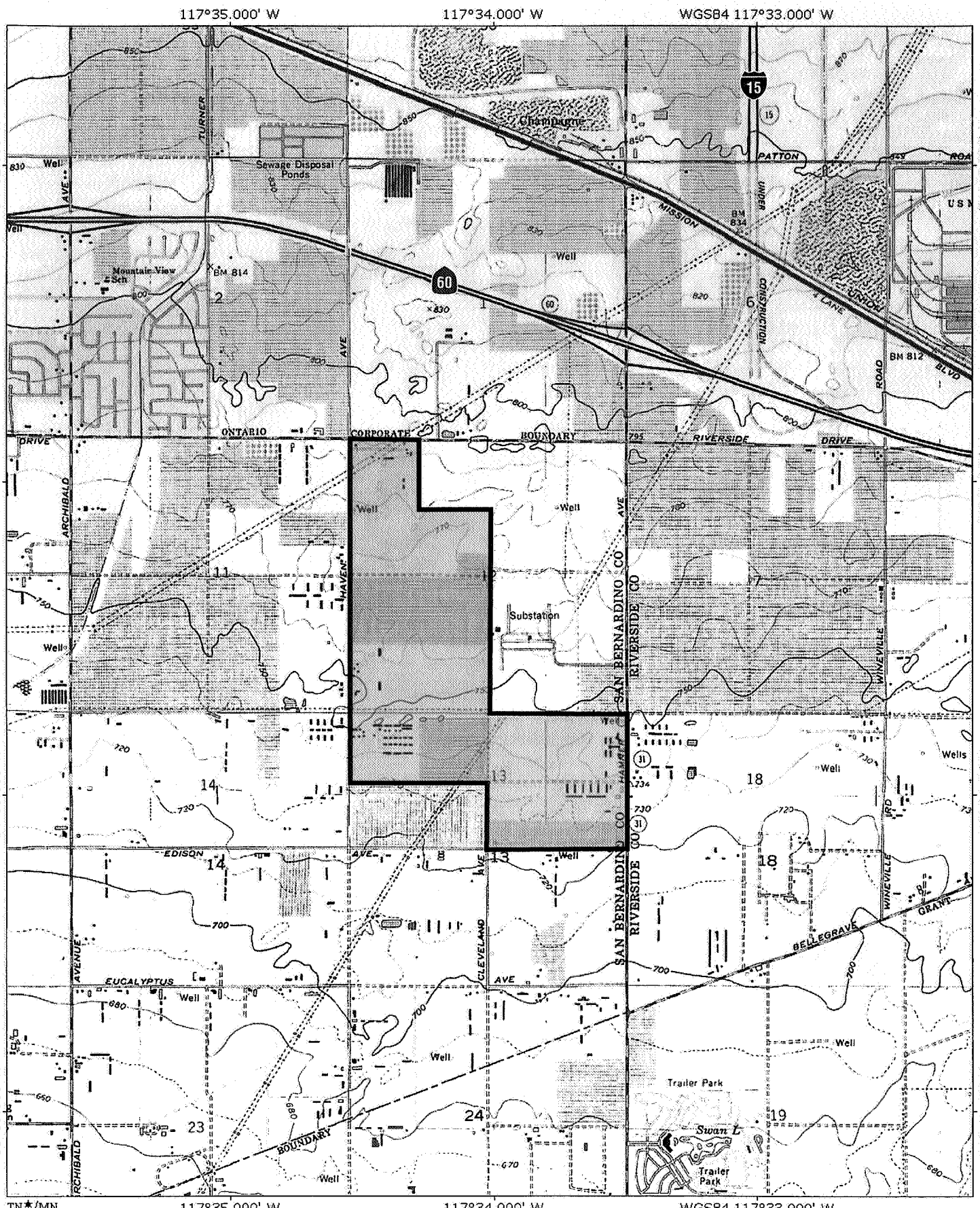
0 5 11 miles
APPROXIMATE

1/10/06 JN 65-100102-12561

RICH-HAVEN • DELINEATION

Regional Vicinity

Exhibit 1



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RBF CONSULTING

0 2500'
APPROXIMATE

1/10/06 JN 65-100102-12561

RICH-HAVEN • DELINEATION

Site Vicinity

Exhibit 2

RBF CONSULTING

0 4500'
APPROXIMATE

1/10/06 JN 65-100102-12561

RICH-HAVEN • DELINEATION

Project Site Aerial

Exhibit 3

2.0 SUMMARY OF REGULATIONS

There are three (3) key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The ACOE Regulatory Branch regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA), and Section 10 of the Rivers and Harbors Act. Of the State agencies, CDFG regulates activities under the Fish and Game Code Section 1600-1616, and the RWQCB pursuant to Section 401 of the CWA and the California Porter-Cologne Act.

2.1 Army Corps of Engineers

The ACOE has regulatory authority over the discharge of dredged or fill material into the waters of the United States under Section 404 of the CWA. The ACOE and Environmental Protection Agency (EPA) recently clarified and simplified the definition of "fill material" to include any "material placed in waters of the United States where the material has the effect of: (i) Replacing any portion of a water of the United States with dry land; or (ii) Changing the bottom elevation of any portion of the waters of the United States." Examples include, but are not limited to sand, rock, clay, construction debris, wood chips, and "materials used to create any structure or infrastructure in the waters of the United States." The term "waters of the United States" includes the following:

(1) all waters that have, are, or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide;

(2) wetlands;

(3) all waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds; the use, degradation or destruction of which could affect interstate or foreign commerce;

(4) all impoundments of water mentioned above;

(5) all tributaries of waters mentioned above;

(6) the territorial seas; and

(7) all wetlands adjacent to the waters mentioned above.

Under this definition, and in the absence of wetlands, the limits of the ACOE's jurisdiction in non-tidal waters extend to the ordinary high water mark (OHWM), which is defined as "*...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a 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* (33 CFR §328.3(e))."

Wetlands, a subset of jurisdictional waters, are jointly defined by the ACOE and EPA as *"those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions* (33 CFR §328.3(b))". Wetlands generally include swamps, marshes, bogs, and similar areas. The process in which jurisdictional areas (if any) are identified is further discussed in Section 3.0, *Methodology*.

It should be noted that a major change in wetland regulation occurred on January 9, 2001, when the U.S. Supreme Court issued the decision, *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers et al* (SWANCC). The SWANCC decision limited the scope of the ACOE's Section 404 CWA regulatory permitting program as applied to isolated waters. The Supreme Court struck down the ACOE's jurisdictional authority over isolated, non-navigable, intrastate waters that are not tributary or adjacent to navigable waters or tributaries (i.e., wetland conditions). Overall, the Court held that Congress did not intend for isolated, non-navigable water conditions to be covered within Section 404 of the CWA, since they are not considered to be true "waters of the U.S."

2.2 Regional Water Quality Control Board

The RWQCB is the primary agency responsible for protecting water quality in California. The RWQCB regulates discharges to surface waters under the Federal CWA and the California Porter-Cologne Water Quality Control Act. The RWQCB's jurisdiction extends to all waters of the State and to all waters of the United States, including wetlands (isolated and non-isolated conditions).

Section 401 of the CWA gives the RWQCB the authority to regulate through 401 Certification any proposed federally permitted activity, which may affect water quality. Among such activities are discharges of dredged or fill material permitted by the ACOE pursuant to Section 404 of the CWA. Section 401 requires the RWQCB to provide "certification that there is reasonable assurance that an activity which may result in the discharge to waters of the United States will not violate water quality standards." Water Quality Certification must be based on a finding that the proposed discharge will comply with water quality standards, of which are found as numeric and narrative objectives in each of the nine (9) Regional Board's Basin Plan.

The Porter-Cologne Water Quality Control Act gives the State very broad authority to regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. The Porter-Cologne has become an important tool in the post SWANCC era, with respect to the State's authority over isolated waters. Generally, any person proposing to discharge waste into a water body that could affect its water quality must file a Report of Waste Discharge (should there be no Section 404 nexus). Although "waste" is partially defined as any waste substance associated with human habitation, the RWQCB also interprets this to *include fill* discharged into water bodies.

2.3 California Department of Fish and Game

Historically, the State of California regulated activities in rivers, streams, and lakes pursuant to Sections 1600-1607 of the California Fish and Game Code. Legislation that took effect on January 1, 2004 repealed Fish and Game Code sections 1600-1607 and added Fish and Game Code sections 1600-1616. The most important issue to note with this change is that now there is no separation between private/public notifications (previously 1601/1603). Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify the CDFG before beginning any activity that will do one or more of the following:

1) substantially obstruct or divert the natural flow of a river, stream, or lake;
2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or

3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

This notification process is referred to as a 1602 Streambed Alteration Agreement (SAA). Fish and Game Code section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state.

Jurisdictional limits of the CDFG are not as clearly defined by regulation as those of the ACOE. While they closely resemble the limits described by ACOE regulations, they include riparian habitat supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFG takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation.

2.4 Activities Requiring Permits

Any development proposal that involves impacting drainages, streams, or wetlands on the site through filling, stockpiling, conversion to a storm drain, channelization, bank stabilization, road or utility line crossings, or any other modification would require permits from the ACOE, the RWQCB, and the CDFG before any development could commence on the project site. Both *permanent* and *temporary* impacts are regulated and would therefore trigger the need for permits.

There are two (2) different permit categories utilized by the ACOE, which include either a Nationwide Permit (NWP) or Individual Permit (IP). The specific permit required is primarily based on project description and jurisdictional impacts. The ACOE will not issue its authorization until the RWQCB completes the Section 401 Water Quality Certification. Processing of the 401 Certification with the RWQCB and SAA with the CDFG can occur concurrently with the ACOE permit process, since the agencies can utilize the same information and analysis. Applications to both the RWQCB and the CDFG require submittal of a valid California Environmental Quality Act (CEQA) document along with the application.

3.0 METHODOLOGY

Prior to visiting the project site, RBF conducted a review of United States Geological Survey (USGS) topographic maps, *aerial photographs*, the *Soil Survey of San Bernardino County (Southwestern Part), California* (dated 1980); and the *State of California Hydric Soils List*, (dated 1995), to identify areas that ***may*** fall under an agency's jurisdiction (refer to Section 3.4, *Literature Review*, for a complete discussion).

ACOE jurisdictional wetlands are delineated using the methods outlined in the *ACOE Wetland Delineation Manual* (1987). The methodology set forth in the 1987 Manual is based on the following **three (3)** indicators that are normally present in wetlands: (1) hydrology providing permanent or periodic inundation by groundwater or surface water, (2) hydric soils, and (3) hydrophytic vegetation. In order to be considered a wetland, an area must exhibit at least minimal hydric characteristics within these three parameters. As described in Section 2.0, ACOE non-wetland waters of the U.S. are delineated based on the limits of the OHWM as determined by erosion, the deposition of vegetation or debris, and changes in the vegetation. The RWQCB shares ACOE jurisdiction, unless isolated conditions are present. In the presence of isolated conditions, the RWQCB takes jurisdiction via the OHWM and/or the 3-parameter wetland methodology utilized by the ACOE. CDFG's jurisdiction is defined to the top of bank of the stream/channel or to the limit of the adjacent riparian vegetation.

Analysis presented in this document consists of field surveys and verification of current conditions conducted on July 7, 2005. While in the field, jurisdictional areas were recorded onto a base map at an approximate scale of 1"= 100' using the topographic contours and visible landmarks as guidelines. Once in the field, vegetation, soils, and evidence of hydrology were examined via the methodology listed below:

3.1 Vegetation

Nearly 5,000 plant types in the United States may occur in wetlands. These plants, known as hydrophytic vegetation, are listed in regional publications of the U.S. Fish and Wildlife Service (USFWS). Cover of vegetation is estimated and is ranked according to their dominance. Species that contribute to a cumulative total of 50% of the total dominant coverage, plus any species that comprise at least 20% (also known as the "50/20 rule") of the total dominant coverage are recorded on a wetland data sheet. Wetland indicator status is assigned to each species using *The List of Plant Species that Occur in Wetlands* (USFWS, 1988). If greater than 50% of the dominant species from all strata were Obligate, Facultative-wetland, or Facultative species, the criteria for wetland vegetation was considered to be met. Plant indicator status categories are described below:

- *Obligate Wetland (OBL):* Plants that occur almost always (estimated >99 percent) in wetlands under natural conditions, but which may also occur rarely (estimated <1 percent) in non-wetlands (i.e., cattail or pickleweed).

- *Facultative Wetland (FACW):* Plants that occur usually (estimated >67 to 99 percent) in wetlands, but also occur (estimated 1 to 33 percent) in non-wetlands (i.e., mulefat or willow).

- *Facultative (FAC):* Plants with similar likelihood (estimated 33 to 67 percent) of occurring in both wetlands and non-wetlands.

- *Facultative Upland (FACU):* Plants that occur sometimes (estimated 1 to <33 percent) in wetlands, but occur more often (estimated >67 to 99 percent) in non-wetlands.

- *Obligate Upland (UPL):* Plants that occur rarely (estimated 1 percent) in wetlands, but occur almost always (estimated >99 percent) in non-wetlands under natural conditions.

3.2 Hydrology

If wetland vegetation criteria is met, the presence of wetland hydrology is evaluated at each transect by recording the extent of observed surface flows, depth of inundation, depth to saturated soils, and depth to free water in the soil test pits. In addition, indicators of wetland or riverine hydrology are recorded including the OHWM, drift lines, rack, debris, and sediment deposits. The lateral extent of the hydrology indicators are used as a guide for locating soil pits for evaluation of hydric soils and jurisdictional areas. In portions of the stream where the flow is divided by multiple channels with intermediate sand bars, the entire area between the channels is considered within the OHWM and the wetland hydrology indicator is considered met for the entire area.

3.3 Soils

There are approximately 2,000 named soils in the United States that occur in wetlands. Such soils, called hydric soils, have characteristics that indicate they were developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season.

Once in the field, soil characteristics are verified by digging soil pits along each transect to a depth of at least 16 inches. Soil pit locations are usually placed within the drainage invert or within adjoining vegetation. At each soil pit, the soil texture and color are recorded by comparison with standard plates within a *Munsell Soil Chart* (1994). Munsell Soil Charts aid in designating color labels to soils, based by degrees of three simple variables-hue, value, and chroma. Any indicators of hydric soils, such as redoximorphic features, buried organic matter, organic streaking, reduced soil conditions, gleyed or low-chroma soils, or sulfuric odor are also recorded. A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions (as previously listed) in the upper 16 inches. The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. It should also be noted that the limits of wetland hydrology indicators are used as a guide for locating soil pits. If any hydric soil features are located, progressive pits are dug moving laterally away from the active channel until hydric features are no longer present within the top 16 inches of the soil profile.

3.4 Literature Review

As previously mentioned, RBF conducted a review of USGS topographic maps, *Corona North, and Guasti, California Quadrangles, photorevised 1981*; *aerial photographs*, provided by Eagle Aerial (dated 2004); the *Soil Survey of San Bernardino County Southwestern Part, California*

(1980); and the *State of California Hydric Soils List*, (1995) prior to visiting the site. Review of relevant literature and materials often help preliminarily identify areas that ***may*** fall under an agency's jurisdiction. Examples of relevant information include, USGS blueline streams, vegetation map or aerial photographs, and hydric soils as listed within the U.S. Department of Agriculture (USDA) Soil Surveys. A summary of RBF's literature review is provided below (refer to *Section 7.0*, for a complete list of references used during the course of this delineation):

- *USGS Topographic Quadrangles, Corona North, and Guasti, CA (photorevised 1981):* The USGS maps show geological formations and their characteristics, describing the physical setting of an area through contour lines and major surface features including lakes, rivers, streams, buildings, landmarks, and other factors that may fall under an agency's jurisdiction. Additionally, the maps depict topography through color and contour lines, which are helpful in determining elevations and latitude and longitude within a project site.

Table 1
Topographic Summary

Map Name	Corona North, Guasti, California
Map Year	Photorevised 1981
Map Provider	USGS
Property Elevation (feet)	Ranges from 720 to 790 feet above msl
Property Slope Type	Flat to minor sloping
Property Slope Direction	South
Map Contour Interval (feet)	10

The project site is located south of State Route 60 (SR-60) in the City of Ontario, County of San Bernardino and primarily consists of agricultural land. Based on the USGS California Quadrangles, on-site topography ranges from approximately 720 to approximately 790 feet above mean sea level (msl) and gently slopes to the south. The surrounding uses consist of agricultural, industrial, and single-family residential uses. No on-site pits, ponds, or lagoons were noted during the review of the USGS topographic map. No blueline streams or other waters (other than dairy ponds) were noted.

- *Aerial Photograph:* Prior to the July 19, 2005 field visit, RBF reviewed an existing aerial photograph, provided by Eagle Aerial (flown in 2004) for the project site. Aerial photographs can be useful during the delineation process, as the photographs often indicate drainages and vegetation (i.e. riparian vegetation) present within the boundaries of the project site (if any).

  According to the aerial photograph, the project site consists of agricultural uses and vacant land. Unimproved dirt roads, associated with past and present land uses are visible. Dairy ponds appear to be present within the central portion of the project site; no other waters were noted.

- *Soil Survey of San Bernardino County Southwestern Part, California (1980):* On-site and adjoining soils were researched prior to the July 19, 2005 field visit. The presence of hydric soils is initially investigated by comparing the mapped soil series for the site to the County list of hydric soils. Soil surveys furnish soil maps and interpretations originally needed in giving technical assistance to farmers and ranchers; in guiding other decisions about soil selection, use, and management; and in planning, research, and disseminating the results of the research. In addition, soil surveys are now heavily utilized in order to obtain soil information within respect to potential wetland environments and jurisdictional areas (i.e., soil characteristics, drainage, and color).

  According to the San Bernardino County Southwestern Part, California Soil Survey, dated 1980, the proposed project site is situated on the Delhi association. The Delhi association consists of nearly level to strongly sloping, somewhat excessively drained, very deep soils on alluvial fans. Four (4) soil series are present on the subject site and are briefly described below:

  Delhi fine sand (Db). This nearly level to strongly sloping soil is on alluvial fans that have been reworked by wind action. About 5,700 acres of this soil, along Pepper Street west of Colton, is moderately to strongly sloping and is on fans. In these areas there are wind deposited hummocks that are about 18 to 36 inches high. Included with this soil in mapping are small areas of Tujunga loamy sand, 0 to 5 percent slopes. Also included are about 25 acres, one-fourth mile west of Milliken Avenue and 200 feet north of Riverside Drive, where a horizon of loam that is weakly cemented with lime is between depths of 18 and 28 inches. Runoff is generally moderate. In unprotected areas, however, the hazard of soil blowing is high. The Delhi soil is used mainly for grapes, pasture plants, alfalfa, and some citrus. It is also used as a source for sand and road fill.

  Hanford coarse sandy loam, 2 to 9 percent slopes (HaC). This gently sloping to moderately sloping soil occupies alluvial fans. It has a profile similar to the one described as representative of the series, but the surface layer is light brownish-gray coarse sandy loam about 10 inches thick. Included with it in mapping are areas of Greenfield sandy loam that make up as much as 10 percent of the total mapped areas. Also included are patches of Tujunga loamy sand, 0 to 5 percent slopes. Runoff is slow to medium, and the hazard of erosion is slight to moderate where the soil is left unprotected. This Hanford soil is used for irrigated crops such as citrus and alfalfa. It also is used for dryfarmed small grains and pasture plants. Home sites and other related uses are also important.

  Hilmar loamy fine sand (Hr). This nearly level soil is on valley floors and alluvial fans. Included with it in mapping are areas of Delhi fine sand that make up about 10 percent of each area. Also included are patches of Tujunga loamy sand, 0 to 5 percent slopes, and small areas where slopes are 2 to 3 percent. Runoff is slow, and the hazard of water erosion is slight. If the soils are left without a protective cover of vegetation, the hazard of soil blowing is high. The Hilmar soil is used chiefly for irrigated alfalfa, grapes, small grains, and pasture plants.

  Tujunga loamy sand, 0 to 5 percent slopes (TuB). This nearly level to gently sloping soil is on broad, long alluvial fans. It has the profile described as representative of the series. Included with it in mapping are areas of Tujunga gravelly loamy sand, 0 to 9

percent slopes, that generally are 10 to 20 acres in size. Also included are areas of Hanford sandy loam, 0 to 2 percent slopes. Runoff is slow to very slow. The hazard of water erosion is slight, but the soil will blow if left unprotected. The hazard of soil blowing is moderate to high on bare soil. Available water capacity is 4 to 5 inches. This soil is used for such irrigated crops as citrus, grapes, small grains, and pasture plants.

- *Hydric Soils List of California (1995):* RBF reviewed the Hydric Soils List of California, provided by the Natural Resources Conservation Service (NRCS), dated December 15, 1995 in an effort to verify whether or not on-site soils are considered to be hydric. Lists of hydric soils along with soil survey maps are good off-site ancillary tools to assist in wetland determinations, but as expected, they are not a substitute for on-site investigations. According to list, none of the above-mentioned soil series are listed as hydric.

- *Local Climate*: The local climate is typical of a mild Mediterranean climate. Winters are cool and moist with mild wintertime temperatures averaging in the mid 60's. Summers are mild, warm, and dry with average temperatures between the mid 80's or the mid 90's. Light fog or clouds, or both, are common along the coast late in spring and early in summer, but rarely remain during the entire day. Some fog generally occurs every month of the year. Maximum summer temperatures seldom exceed 90°F, and nights are generally cool throughout the year. Winter temperatures seldom drop below freezing. Average annual rainfall for the region is approximately 14 inches and nearly all falls in winter. For this purposes of this delineation, the growing season is considered to be 365 days a year.

- *Flood Zone:* The project site is not located within the 100-year flood zone.

Table 2
Project Site Summary

Is the Project Site...	Yes	No	Unknown
within a 100-year floodplain?		X	
a blue line stream?		X	
within the California Coastal Zone?		X	
reported groundwater level <6 feet bgs?		X	

4.0 SITE CONDITIONS

As described in Section 1.0, the proposed project is located south of State Route 60 (SR-60) in the City of Ontario, County of San Bernardino. Refer to Sections 4.1 through 4.3, below, for discussion with respect to the three (3) wetland parameters defined in Section 3.0.

4.1 Vegetation

The project site has been under agricultural production for several decades. The majority of the project site consists of areas under current production or areas that have been abandoned. Areas containing water and sufficient growing conditions are either irrigated or associated with the on-site dairy waste ponds. These constructed areas have a mix of non-native and native species habitat, primarily dominated by ornamentals in developed portions of the project site.

4.2 Hydrology

No flowing water was noted within the project site. Standing water (approximately 2-10 inches in depth) was observed within the central portion of the project site. The standing water and evidence of hydrology appeared to be associated with past and present dairy operations; no inlets or outlets were noted within the dairy ponds. No flows appeared to continue off-site.

4.3 Soils

Due to the lack of dominant hydrophytic vegetation and the existing uses (dairy ponds), no formal soil pits were warranted within the boundaries of the project site. Overall, soils on-site appeared to be routinely disturbed; debris was intermixed with soils near and within the dairy ponds. No evidence of hydric soils was noted onsite.

5.0 FINDINGS

This delineation was prepared for Richland Communities, LLC, in order to delineate the ACOE's, RWQCB's, and CDFG's jurisdictional authority for drainages located within the Rich-Haven Specific Plan project site. This report presents RBF's best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any jurisdictional delineation, only the regulatory agencies can make a final determination of jurisdictional boundaries within a project site/property. Jurisdictional boundaries are broken down specifically by agency and are described below.

5.1 U.S. Army Corps of Engineers (ACOE)

Wetland Determination:

As previously noted in Section 2.1, an area must exhibit **all three (3)** of the wetland parameters described in the ACOE *Wetland Delineation Manual* to be considered a jurisdictional wetland. Based on the results of the field investigations, it was determined that no portion of the project site contained all three parameters. Based on the literature review and existing conditions during the field visit, no ACOE jurisdictional wetlands are present. As previously mentioned, dairy ponds are present within the project site and are not typically considered to be jurisdictional.

"Waters of the U.S." (non-wetland) Determination:

Evidence of hydrology was noted within the project site; however, as mentioned in Section 4.0, these areas are associated with dairy ponds and agricultural irrigation. RBF observed no evidence of flows continuing off-site, nor were inlets/outlets present within the dairy ponds. No ACOE jurisdiction is anticipated within the Rich-Haven Specific Plan project site.

5.2 California Regional Water Quality Control Board Determination (RWQCB)

Isolated conditions were observed within the boundaries of the project site; however, these areas were consistent with the dairy ponds and agricultural irrigation activities as mentioned above. Although the RWQCB can regulate isolated conditions, the RWQCB does not considered dairy or waste ponds to be "waters of the state." No RWQCB jurisdiction is anticipated within the Rich-Haven Specific Plan project site.

5.3 California Department of Fish and Game Determination (CDFG)

As with the ACOE and RWQCB, no areas on-site displayed evidence typical of streambeds. Vegetation was often not present within the dairy areas and the majority of the project site appeared to be dominated by non-native species. No CDFG jurisdiction is anticipated within the Rich-Haven Specific Plan project site.

6.0 REGULATORY APPROVAL PROCESS

The following is a summary of the various permits, agreements, and certifications required before construction activities take place within the above-mentioned jurisdictional areas (if needed).

6.1 U.S. Army Corps of Engineers (ACOE)

The ACOE regulates discharges of dredged fill materials into "waters of the United States" pursuant to Section 404 of the CWA. No federal permit requirement is anticipated from the ACOE Regulatory Branch-Los Angeles District Office since the project site consists of upland areas and dairy ponds associated with past and present day agricultural and dairy activities. No other drainages or "waters" were noted on-site; no flows from the project site continued off-site to adjacent areas.

6.2 Regional Water Quality Control Board (RWQCB)

Since no ACOE jurisdiction is anticipated on-site, there is no CWA Section 404 nexus; therefore, a Section 401 Water Quality Certification would not be required prior to construction. However, as a State regulatory agency, the RWQCB does have a mandate to require a Waste Discharge Permit (WDR, also known as a Report of Waste Discharge), via the California Porter-Cologne Act/Water Code Section 13260, for isolated conditions. This mandate does not typically include dairy ponds and therefore, should not be warranted. Refer to Section 6.4 for concurrence recommendations.

6.3 California Department of Fish and Game (CDFG)

Due to the lack of streambeds and associated resources on-site, no 1602 Streambed Alteration Agreement is anticipated at this time.

6.4 Global Recommendations

Agency Concurrence:

It is highly recommended that the delineation be forwarded to the RWQCB for their concurrence. The RWQCB concurrence would be focused on the dairy pond "non-jurisdictional" designation and RBF's professional opinion.

7.0 REFERENCES

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