

Appendix 1 Biological Resource Assessment (LSA Associates)

December 4, 2008

Mr. Douglas Pope
Napa Industrial LLC
c/o Headwaters Development Company LLC
50 Fullerton Court, Suite 203
Sacramento, CA 95825

Subject: Biological Resources Assessment, Napa Commerce Center, South County Industrial Area, Napa County, CA.

Dear Doug:

The following letter describes the biological resources on the approximately 218 acre Napa Commerce Center site, and provides an assessment of the potential impacts to biological resources resulting from the construction of the proposed project. The proposed project is located in Township 4 North, Range 4 West, Section 11 on the 7.5 minute USGS Cuttings Wharf Quadrangle (38°22'2" N and 122°16'40" W). The project site is located near the City of American Canyon in the Napa County Airport Industrial Park, in Napa County, California. The site's Napa County Assessors Parcel number is 057-090-007-069. Figures 1 and 2 depict the regional location and vicinity of the project site, respectively. Figure 3 is an aerial photograph of the site that has been annotated to show wetland resources,

Based on the results of our onsite studies and review of previously developed information for the Beringer-Blass project, the information contained in the Beringer Blass EIR (ESA 2001) is generally still applicable. The only major exception is the report of, and assumption of, vernal pool fairy shrimp inhabiting the Napa Commerce Center project site in the Beringer Blass EIR. Subsequent analysis has shown that the original assumptions were incorrect and that the fairy shrimp had actually been found on the Napa Airport, over 500 feet to the west and outside the watershed of the project property (Pittman 2003). Furthermore, two years of wet season protocol surveys for fairy shrimp conducted by Pittman in 2002 and 2003 did not find any evidence of any listed fairy shrimp on the subject property (Pittman 2003). Pittman therefore concluded that fairy shrimp were absent from the site (copies attached).

PROJECT DESCRIPTION

The proposed project consists of a new 645,000 square-foot storage and warehousing building with accessory office space and associated infrastructure intended to serve the wine industry (Figure 4). Local approvals for this project are based on the previous environmental review and approvals granted for the Beringer-Blass project by the County of Napa, with some minor modification for minor differences in the project development plans between the two projects. Project components include:

- Construction of the 645,000 square-foot rail and truck accessible warehouse and associated office space and infrastructure;

- Extension of Devlin Road on an existing easement through the adjacent Napa Airport Corporate Centre (NACC) parcel to provide access to the project site;
- Construction of a railroad spur to access the warehouse;
- Construction of a new storm sewer outfall to No Name Creek, and;
- Establishment of 34.2-acre Resource Preserve/Management Area, which includes segments of No Name Creek and associated wetlands in the northwestern corner of the site.

As proposed, the warehouse site will require the removal of earth to provide a flat construction site. This material is proposed to be placed and spread in the middle of the property. No wetlands would be filled by this activity.

Associated infrastructure for the warehouse includes a rail spur, stormwater quality treatment facilities, 362 standard parking spaces and 10 ADA accessible parking spaces to accommodate 231 full-time and 30 part-time employees, as well as customers. The proposed project will also include 48 truck loading docks and 3 railroad loading docks. The project would also involve extension of Devlin Road across the NACC property southwest from the existing Devlin Road-South Kelly Road intersection to gain access to the site. There is currently no public road access to the site. This road extension will fill a total of 0.15 acre of State and federal jurisdictional wetlands on the NACC parcel.

Wastewater disposal is available from the City of American Canyon. A new sewer line pump station is required near the middle of the project site parcel. A gravel road will be installed to allow City of American Canyon personnel to service the pump station. Water will be provided by the City of American Canyon. Reclaimed wastewater will be used for all landscaping and other uses not requiring potable water. Figure 3, attached, presents the proposed project site plan.

PROJECT SITE DESCRIPTION

General Site Conditions

The project site is a relatively flat 218- acre rectangular property bounded by the Napa County Airport to the north, with Airport Road running along its northern border parallel to the project site boundary. It is located north of Highway 29 and east of South Kelly Road and its intersection with Devlin Road. To the northeast of the proposed project are the Devlin Road Waste Transfer Station and Napa County Compost Facility. These facilities are separated from the project site by the California Northern Railroad tracks, which run parallel to the eastern border of the proposed project. To the south and west are undeveloped parcels of land, primarily in use for agriculture and grazing. The site has been used as range for cattle, and is bounded on all sides by barbed wire. Several cattle corals and a barn have been erected in the southeastern corner. The properties surrounding the site to the north and east are undeveloped grazed cattle pasture. The properties to the south of the site are either unused or used for industrial purposes.

Soils

The USDA Natural Resources Conservation Service (formerly the Soil Conservation Service) mapped two soils on the project site (*Soil Conservation Service, 1978*).

Clear Lake clay, drained, is mapped on the majority of the site. Clear Lake clay is a poorly drained soil with slow permeability that occurs on old alluvial fans and in basins. The surface layer is very dark gray, slightly acid to mildly alkaline clay 46 inches thick. Included with this soil mapping unit are areas of Bale, Haire, Cole, Reyes, Tehama, and Yolo soils.

Haire loam, 2 to 9 percent slopes, is mapped on the northwest and southwest corners of the project site, and along the site's southern boundary. Haire loam is a moderately well drained soil with very slow permeability that occurs on old terraces and alluvial fans. The surface layer is a brown and grayish brown medium acid loam 22 inches thick. Included with this soil mapping unit are small areas of Clear Lake, Fagan, Diablo, and Dibble soils.

Hydrology/Topography

The project site is located on an old alluvial terrace between the eastern hills of the Napa Valley and the tidal marshlands along the Napa River. The site is generally flat with typical slopes less than one percent. The entire project site is drained by an un-named creek on the USGS 7.5 minute Cuttings Wharf, California Quad, locally known as No Name Creek. No Name Creek is an intermittent stream that originates south of the project site and flows northward and then westward through the project site in a natural channel. Most of the site slopes toward No Name Creek. A portion of the southwest corner of the site drains westward in a shallow swale that meets No Name Creek west of the site.

Northwest and downstream of the project site, No Name Creek is channelized where it flows past abandoned salt evaporator ponds before draining into Fagan Slough, a tidal, navigable-in-fact water of the United States. Fagan Slough is tributary to the Napa River, a traditional navigable water that is tributary to San Pablo Bay.

BIOLOGICAL RESOURCES

Habitat Types and Vegetation

The dominant plant community on the site is non-native annual grassland, supporting introduced annual grasses, as well as native and non-native forbs (broad-leaved plants). In the upland areas dominant grasses observed by LSA included Italian rye (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), medusa-head (*Taeniatherum caput-medusae*) and soft chess (*Bromus hordeaceus*). Common associate species observed in the pasture included bird's-foot trefoil (*Lotus corniculatus*), hayfield tarweed (*Hemizonia congesta*), English plantain (*Plantago lanceolata*), bindweed (*Convolvulus arvensis*) and bristly ox-tongue (*Picris echioides*). Lower elevation pasture areas support some of the same species, such as Mediterranean barley, Italian rye and bird's-foot trefoil; however, within these low areas are seasonal wetlands that are characterized by the presence of California coyote thistle (*Eryngium aristulatum*), rabbit's-foot grass (*Polypogon monspeliensis*) and curly dock (*Rumex crispus*).

Freshwater marsh vegetation occurs in the northwestern corner of the project site, where freshwater runoff appears to be draining year-round toward No Name Creek from a drainage ditch along the southern airport boundary. Among other wetland plant species, this area supports cattails (*Typha* sp.), water plantain (*Alisma plantago-aquatica*), penny-royal (*Mentha pulegium*), brass buttons (*Cotula*

coronopifolia), flatsedge (*Cyperus* sp.), and iris-leaved or brown-headed rush (*Juncus xiphioides* or *J. phaeocephalus*).

The banks of No Name Creek support sporadic areas of native perennial grassland, dominated by creeping wild rye (*Leymus triticoides*) and a rhizomatous rush (*Juncus balticus* or *J. mexicanus*). There is no woody riparian vegetation on the project site.

Jurisdictional Determination

Waters of the United States on the Napa Commerce Center study area consist of 3.92 acres of seasonal wetlands, wetland stream segments, wetland ditch segments, non-wetland stream and ditch segments, and culverts (Figure 3). Three of these wetlands are isolated from other waters of the United States (Justin Yee, USACOE, pers. comm.). These features, along with sample point locations, are mapped on Figure 3. The dimensions of individual segments and wetlands are provided in Tables A and B. The areas of wetlands and other waters are summarized in Tables C and D.

The extent of waters mapped in LSA's June, 2008 wetland delineation of the project site resembles the extent (4.9 acres) of jurisdictional waters delineated in 2000 (LSA 2008). The most substantial differences between the current and previous delineations are: 1) an intermittent stream was mapped in 2000 where SW1 is located now; and 2) an intermittent stream was mapped in 2000 from the eastern project boundary (railroad) to No Name Creek, where no such feature exists now. The U.S. Army Corps of Engineers field-verified LSA's 2008 delineation on October 16, 2008.

Offsite wetlands along the Devlin Road extension (on the NACC parcel) were mapped by Jones and Stokes Associates in October 2005 and verified by the Corps in January 2008.

Special-status Species

Plant Species. Field surveys were conducted by LSA botanist Tim Milliken, in accordance with USFWS, CDFG, and CNPS protocols. Field surveys were conducted on March 20, April 20, July 16, and August 20, 2008. The surveys identified and inspected the following plant communities on the site; non-native annual grassland; freshwater marsh vegetation; seasonal wetlands; and in-stream wetlands. All surveys were timed to ensure observations during appropriate developmental stages of the target species and were conducted on foot in order to provide visual coverage of the entire project site.

The majority of the species encountered were sight-identified to species level; some were keyed using a dissecting scope and appropriate floristic manuals. Taxonomy and nomenclature follow those in *The Jepson Manual; Higher Plants of California* (Hickman 1993). A list of all species observed during the surveys is attached (Table E).

No special-status plants have been mapped on or adjacent to the project site. However, a search list of 9 special-status plants was compiled for consideration with the project EIR (ESA 2001 and 2001a) by combining the resources of the *California Natural Diversity Data Base* (CDFG 2008), the *Electronic Inventory of Rare and Endangered Plants of California* (CNPS 1994), and informal consultation with the USFWS regarding potential sensitive plant species at the project site. Thus, the

project site provides suitable habitat for 9 special-status plant species. Suitable habitat does not infer presence, only that existing ecological conditions may support these species.

There are 9 special status plant species that have the potential to occur on the project site: Alkali milk vetch (*Astragalus tener* var. *tener*), Suisun marsh aster (*Aster lentus*), Big-scale balsamroot (*Balsamorhiza macrolepis* var. *Macrolepis*), dwarf downingia (*Downingia pusilla*), Delta tule-pea (*Lathyrus jepsonii* var. *jepsonii*), Contra Costa goldfields (*Lasthenia conjugens*), legenere (*Legenre limosa*), showy Indian clover (*Trifolium amoenum*), and Mason's lilaeopsis (*Lilaeopsis masonii*). Two of the species, Contra Costa goldfields and showy Indian clover, are federally-listed as endangered. Alkali milk vetch, Delta tule-pea, legenere, Suisun marsh aster, and Mason's lilaeopsis are federally listed as species of special concern. Eight of the species are on CNPS's List 1B and one plant, Dwarf downingia, is on CNPS's List 2.

Focused sensitive plant species surveys conducted by ESA botanists for the project EIR in 2000 and also by LSA botanists in 2008 did not locate any of the listed sensitive plant species above.

Wildlife. A total of 37 special-status animal species are known to occur in the region of the project site, but no special-status animal records have ever been mapped on or adjacent to the site, with the exception of vernal pool fairy shrimp. Due to the lack of suitable habitat on or adjacent to the project site for the majority of the listed species mentioned above, LSA consider only five of those species to have any potential to inhabit the site: vernal pool fairy shrimp, northern harrier, Swainson's hawk, burrowing owl, white-tailed kite, and loggerhead shrike.

As previously explained, the Beringer-Blass EIR indicated that vernal pool fairy shrimp had been found on the site, but Pittman concluded that fairy shrimp were absent from the site. In 2002, the US Fish and Wildlife Service designated critical habitat for listed vernal pool species, including vernal pool fairy shrimp, in California and Oregon. The Napa County Airport adjacent to the project site was designated as critical habitat for vernal pool fairy shrimp, but the Napa Commerce Center parcel was not.

The five sensitive bird species listed above have the potential to occur on the project site based on the habitats present. These species could be found along No-Name Creek, within stands of eucalyptus trees located near the site, or within the open grassy fields. Of these, only the Swainson's hawk (*Buteo swainsonii*) is a state listed threatened species pursuant to the California Endangered Species Act.

The Swainson's hawk is generally a summer visitor to California. In the fall months, most Swainson's hawks migrate to Mexico and South America before returning to the United States to breed once again in the late spring. There is a small population of Swainson's hawks that remain resident in California year-round; however, the nesting population of Swainson's hawks in California has declined greatly due primarily to habitat loss. This raptor inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands. It nests almost exclusively in trees and will nest in almost any tree species that is at least 10 feet tall.

Swainson's hawks in California are highly tied to and dependent upon irrigated agricultural habitats. Foraging habitats include alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture, and rice land when not flooded. Its primary prey in the

Central Valley is California meadow vole (*Microtus californicus*). Agricultural areas are often preferred over more natural grassland habitats due to larger prey populations. In addition, agricultural practices (planting, maintenance, harvesting, disking) allow for access to prey, and very likely increase foraging success of Swainson's hawks by flushing prey.

There is a current nesting record for Swainson's hawk located 2.5 miles north of the Project site along the south bank of Suscol Creek, in south Napa (CNDDB Occurrence Number 1619). These birds are reportably highly tied to the waste-water disposal/irrigation fields north of the Napa County Airport. The grasslands on the project site provide potential foraging habitat, but small mammal and meadow vole populations are likely to be relatively limited given the grassland characteristics and historic levels of livestock grazing.

IMPACTS AND MITIGATION ASSESSMENT

Impacts to Threatened and Endangered Species

Nesting Swainson's hawks have been recorded less than a mile from the project site, and several of the large eucalyptus trees adjacent to the project provide potential nesting habitat. The neighboring grassland areas could be used by these and other raptors as foraging grounds. The grassland areas are small, disturbed, and surrounded by development, making them less valuable as foraging habitat than larger grasslands; therefore, the loss of this area as foraging habitat is considered a less than significant impact to the species. However, due to the proximity of previously recorded Swainson's hawks, the presence of this species on the site cannot be ruled out. Although no nesting activity has been documented on the site, northern harrier, Swainson's hawk, burrowing owl, white-tailed kite, and loggerhead shrike could also forage or nest on the site.

Impacts to Riparian or Wetland Habitats or Other Sensitive Natural Community

The project will result in the loss of 0.34 acre of seasonal wetlands regulated only by the State, and loss of an additional 0.15 acre of wetlands regulated by both State and federal agencies. These impacts could not be avoided by project planners.

Interfere Substantially with the Movement of Any Native Resident or Migratory Fish or Wildlife Species or With Established Native Resident or Migratory Wildlife Corridors

The property is surrounded by parcels that are developed or are in the process of being developed for commercial and residential use. The primary potential for movement is likely centered along No Name Creek. The No Name Creek corridor will only be affected by a small rip-rap outfall, and much of the length of No Name Creek will be placed in a permanent conservation preserve. The No Name Creek corridor will provide continued connectivity from upstream areas on the Giovanni Property to the south out to Fagan Slough/Napa River on the west. The proposed project is unlikely to affect the movement or nursery sites of any native wildlife species.


RECOMMENDED MITIGATION MEASURES AND DISCUSSION

The potentially significant impacts described in the previous section have not changed substantially since the Draft and Final EIR for the Beringer Bliss Project. Mitigation Measures F1 a-d, F2, F3, and F6 provide applicable mitigation for the above effects. Mitigation for impacts to wetlands and habitat for special status species (Measure F1c and F2) will be implemented within a 34.2 acre preserve area. Mitigation measure F5a and b are not applicable to the current project. The one change in conclusions from the original EIR would be the change from significant unavoidable finding for impacts to vernal pool fairy shrimp. As described above, the previous EIR presumed the vernal pool fairy shrimp to have been captured/present on the project site. Subsequent surveys and assessment determined the previous record was from a nearby area on the Napa County Airport and none were found on the site during two years of protocol surveys approved by the US Fish and Wildlife for determining species presence. This species was therefore considered to be absent from the site.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

LSA ASSOCIATES, INC.

 FOR

Steve Foreman
Principal/Wildlife Biologist

cc: Mark Phillips and Kevin Teague
Dickenson, Peatman and Fogarty, 809 Coombs Street, Napa, CA 94559

Attachments Figure 1 – Regional Location
 Figure 2 – Site Location
 Figure 3 – Potential Waters of the United States
 Figure 4 – Site Plan and Impacts

 Table A – Jurisdictional Wetlands
 Table B – Jurisdictional Ditch and Stream Segments
 Table C – Summary of Potentially Jurisdictional Wetlands and Other Waters
 Table D – Isolated Waters
 Table E – Plant Species Observed at the Napa Commerce Center Project Site

Pittman, Brian. 2003. Environmental Science Associates. Wet Season Sampling for Federally Listed Large Branchiopods at the Beringer-Blass Wine Estates Devlin Road Facilities Project Site, Napa County California. TE Permit Number TE0027422-0. Prepared for Beringer-Blass Wine Estates, St Helena, California.

Literature Cited

California Natural Diversity Database (CNDDB). 2008. Federally listed species occurrences. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Game, Sacramento.

California Native Plant Society (CNPS). 2008. Inventory of Rare and Endangered Plants of California. 7th ed. California Native Plant Society, Sacramento.

ESA. 2001. Beringer Wine Estates Devlin Road Facility Final Environmental Impact Report. County of Napa Conservation, Development and Planning Department, State Clearing House No. 00032043, Use Permit No. 98597. Napa County, California.

_____. 2001a. Beringer-Blass Wine Estates Wetland and Water Associated Permit Applications. Prepared for Beringer-Blass Wine Estates. Corps File #25176N.

Hickman, J.C., ed. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, CA. 1400 pp.

LSA Associates, Inc. 2008. Delineation of Waters of the United States, Napa Commerce Center. 9 June. Napa County, California.

U.S. Department of Agriculture Soil Conservation Service (now Natural Resources Conservation Service) in Cooperation with the University of California Agricultural Experiment Station. 1978. *Soil Survey of Napa County, California*.

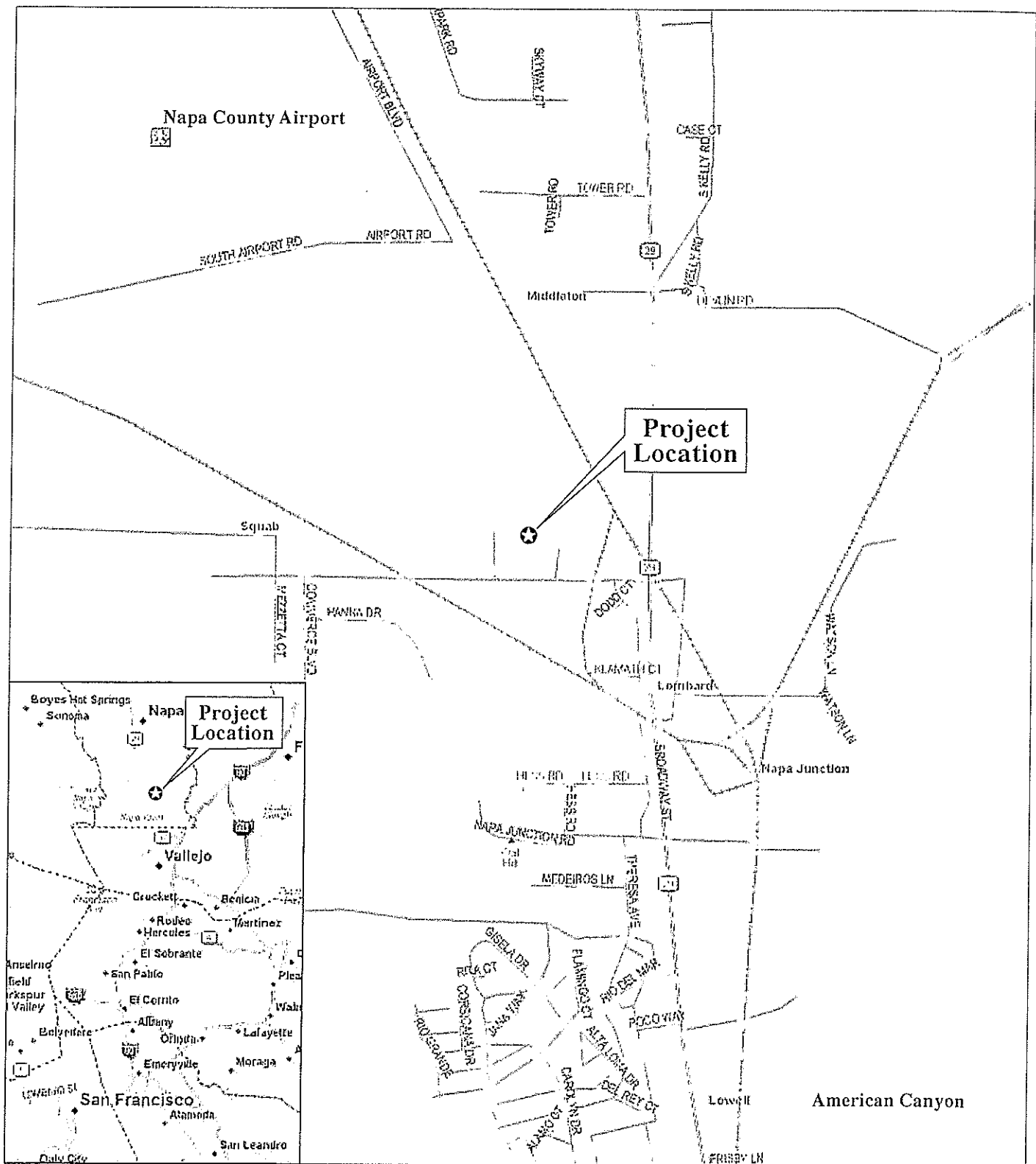
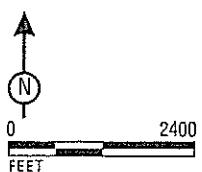


FIGURE 1

*Napa Airport Haul Route
Napa County, California
Regional Location*

LSA



SOURCE: ©2006 DELORME. STREET ATLAS USA® 2006

PAHDD0701\g\Figures\Figure1_RegionalLocationInset.cdr (9/9/08)

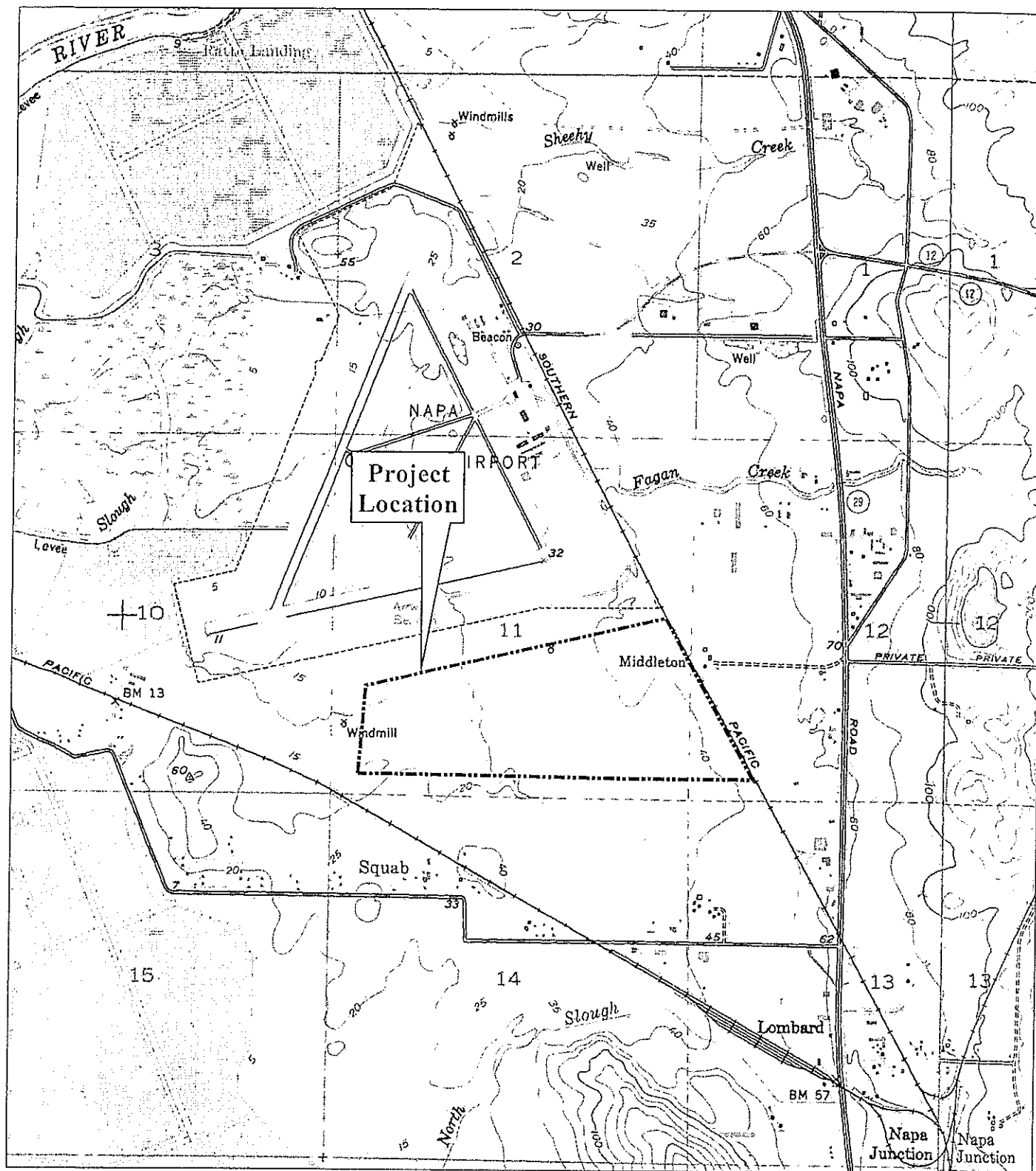
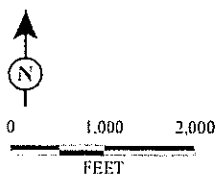


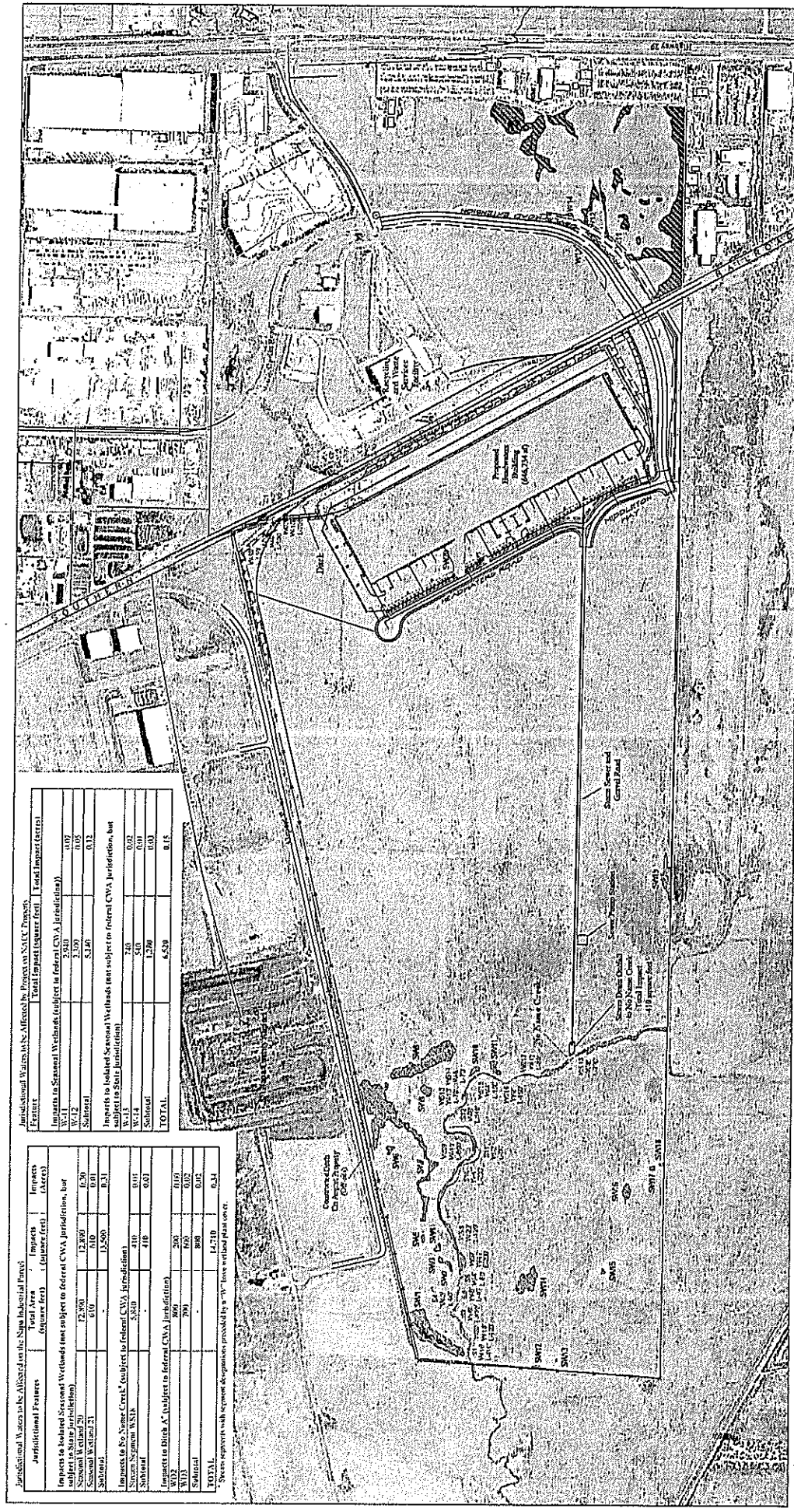
FIGURE 2

LSA



*Napa Industrial Park
Napa County, California*

Project Location



Jurisdictional Wetlands to be Affected by Project on NACU Property			
Feature	Total Impact (square feet)	Loss Impact (acres)	
Impacts to Seasonal Wetlands (subject to federal CWA jurisdiction)			
W-11	5,510	0.10	
W-12	2,309	0.05	
Subtotal	7,819	0.15	
Impacts to Isolated Seasonal Wetlands (not subject to federal CWA jurisdiction, but subject to State jurisdiction)			
W-13	740	0.02	
W-14	540	0.01	
Subtotal	1,280	0.03	
TOTAL	9,099	0.18	

Jurisdictional Wetlands to be Affected on the Napa Industrial Park			
Jurisdictional Features	Total Area (square feet)	Impacts (square feet)	Impacts (acres)
Impacts to Isolated Seasonal Wetlands (not subject to federal CWA jurisdiction, but subject to State jurisdiction)			
Seasonal Wetland 20	12,550	12,550	0.29
Seasonal Wetland 21	0.00	0.00	0.00
Subtotal	12,550	12,550	0.29
Impacts to Non-Seasonal Wetlands (subject to federal CWA jurisdiction)			
Seasonal Wetland 22	3,510	3,510	0.08
Subtotal	3,510	3,510	0.08
Impacts to Ditch A (subject to federal CWA jurisdiction)			
W-15	200	200	0.00
W-16	290	290	0.01
Subtotal	490	490	0.01
TOTAL	16,550	16,550	0.38

Notes: Impact is with respect to wetlands provided by a "W" line wetland plan on file.

FIGURE 3

Napa Commerce Center
Napa County, California
Site Plan and Impacts

LEGEND

□ STUDY AREA (219 acres)

--- NON-JURISDICTIONAL STREAM SEGMENT

POTENTIALLY JURISDICTIONAL FEATURE

○ SEASONAL WETLAND OR WETLAND STREAM SEGMENT

— STREAM OR DITCH SEGMENT

— CULVERT

WZ SEGMENT WIDTH

LW SEGMENT LENGTH

○ FEATURE TO BE PERMANENTLY FILLED

LSA

0 500 FEET

SOURCE: AERIAL PHOTOGRAPHY FROM AIRPHOTO USA (2003) DELINEATION COMPLETED NOVEMBER 2007 BY L. ALLEN

P:\J000701\GIS\figure3\figure3.mxd

Table A: Jurisdictional Wetlands

Seasonal Wetlands	Area (sq. ft.)	Area (acres)
SW 1	25,490	0.59
SW 2	3,230	0.07
SW 5	490	0.01
SW 6	1,020	0.02
SW 7	45,020	1.03
SW 8	2,130	0.05
SW 9	23,170	0.53
SW10	1,300	0.03
SW11	2,120	0.05
SW12	630	0.01
SW13	120	0.00
SW14	8,400	0.19
SW15	280	0.01
SW16	2,290	0.05
SW17	920	0.02
Total	116,610	2.68

Table B: Jurisdictional Ditch and Stream Segments

Segment	Width (ft.)	Length (ft.)	Area (Sq. Ft)	Area (acres)	Non- Wetland Segments Area (acres)	Wetland Segments Area (acres)
Ditch A						
D1	10	120	1,200	0.03	0.03	--
WD2	8	100	800	0.02	--	0.02
WD3	10	70	700	0.02	--	0.02
WD4	8	420	3,360	0.08	--	0.08
D5	3	80	240	0.01	0.01	--
Total Ditch A			6,300	0.14	0.03	0.11
Ditch A Culverts						
C1	3	30	90	0.002	0.002	--
C2	2	30	60	0.001	0.001	--
C3	2	30	60	0.001	0.001	--
Total Ditch A Culverts			210	0.01	0.01	
No Name Creek						
S1	10	110	1,100	0.03	0.03	--
WS2	15	120	1,800	0.04		0.04
S3	6	120	720	0.02	0.02	--
S4	3	90	270	0.01	0.01	--
S5	6	40	240	0.01	0.01	--
S6	4	50	200	0.00	0.00	--
WS7	17	200	3,400	0.08	--	0.08
WS8	22	120	2,640	0.06	--	0.06
WS9	10	800	8,000	0.18	--	0.18
S10	4	230	920	0.02	0.02	--
S11	2	80	160	0.00	0.00	--
S12	6	110	660	0.02	0.02	--
WS13	13	70	910	0.02	--	0.02
WS14	6	70	420	0.01	--	0.01
WS15	4	150	600	0.01	--	0.01
WS16	2	150	300	0.01	--	0.01
WS17	4	80	320	0.01	--	0.01
WS18	8	730	5,840	0.13	--	0.13
Total No Name Creek		3,320	28,500	0.65	0.10	0.56
TOTAL OTHER WATERS					0.14	
TOTAL WETLAND STREAM/DITCH SEGMENTS						0.67

Table C: Summary of Potentially Jurisdictional Wetlands and Other Waters

Jurisdictional Features	Length (feet)	Area (sq. ft.)	Area (acres)
Wetlands			
Seasonal Wetlands	-	116,610	2.68
Wetland Stream and Ditch Segments	3,080	29,090	0.67
Total	3,080	145,700	3.35
Other Waters			
Streams	830	4,270	0.10
Ditches	200	1,440	0.03
Culverts	90	210	0.01
Total	1,120	5,920	0.14

Table D: Isolated Wetlands

Seasonal Wetlands	Area (sq. ft.)	Area (acres)
SW19	6,320	0.15
SW20	12,890	0.30
Total	19,210	0.45

**Table E: Plant Species Observed at the Napa Commerce Center Project Site
(Spring and Summer 2008¹)**

Scientific Name	Common Name	Native
<i>Achillea millefoil</i>	Common yarrow	Yes
<i>Achyrrachaena mollis</i>	Blow-wives	Yes
<i>Alisma plantago-aquatica</i>	Water plantain	Yes
<i>Amsinckia menziesii</i> var. <i>intermedia</i>	Fiddleneck	Yes
<i>Anagallis arvensis</i>	Scarlet pimpernel	No
<i>Anthemis cotula</i>	Mayweed	No
<i>Atriplex triangularis</i>	Spearscale	Yes
<i>Baccharis pilularis</i>	Coyote brush	Yes
<i>Bellardia trixago</i>	Linseed	No
<i>Briza minor</i>	Little quakinggrass	No
<i>Bromus diandrus</i>	Ripgut brome	No
<i>Bromus hordeaceus</i>	Soft chess	No
<i>Calandrinia ciliata</i>	Redmaids	Yes
<i>Callitriche</i> sp.	Water starwort	Yes
<i>Camissonia ovata</i>	Sun cups	Yes
<i>Castilleja exerta</i>	Purple owl's clover	Yes
<i>Carex occidentalis</i>	Western sedge	Yes
<i>Centaurea calcitrapa</i>	Purple star-thistle	No
<i>Centaurea solstitialis</i>	Yellow star-thistle	No
<i>Cerastium glomeratum</i>	Mouse-ear chickweed	No
<i>Chlorogalum pomeridianum</i>	Soap plant	Yes
<i>Cichorium intybus</i>	Chicory	No
<i>Cirsium vulgare</i>	Bull thistle	No
<i>Convolvulus arvensis</i>	Bindweed	No
<i>Cotula coronopifolia</i>	Brass buttons	No
<i>Croton setigerus</i>	Turkey mullein	Yes
<i>Cuscuta</i> sp.	Dodder	Yes
<i>Cyperus eragrostis</i>	Nut sedge	Yes
<i>Danthonia californica</i>	California oat grass	Yes
<i>Distichlis spicata</i>	Salt grass	Yes
<i>Eleocharis macrostachya</i>	Spikerush	Yes
<i>Elymus glaucus</i>	Blue wildrye	Yes
<i>Erodium botrys</i>	Broadleaf filaree	No
<i>Eryngium aristulatum</i>	California coyote thistle	Yes

Scientific Name	Common Name	Native
<i>Foeniculum vulgare</i>	Fennel	No
<i>Hemizonia congesta</i>	Hayfield tarweed	Yes
<i>Holcus lanatus</i>	Velvet grass	No
<i>Hordeum brachyantherum</i>	Meadow barley	Yes
<i>Hordeum marianum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	No
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Hare barley	No
<i>Hypochoeris radicata</i>	Hairy cat-s-ear	No
<i>Juncus balticus</i>	Baltic rush	Yes
<i>Juncus bufonius</i>	toad rush	Yes
<i>Juncus occidentalis</i>	Western rush	Yes
<i>Juncus ziphioides</i>	Iris-leaved rush	Yes
<i>Lasthenia glaberrima</i>	Rayless goldfield	Yes
<i>Leymus triticoides</i>	Creeping wildrye	Yes
<i>Lolium multiflorum</i>	Italian wildrye	No
<i>Lotus corniculatus</i>	Bird's-foot trefoil	No
<i>Lotus purshianus</i>	Spanish clover	Yes
<i>Lupinus bicolor</i>	Miniature lupine	Yes
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	No
<i>Malva neglecta</i>	Buttonweed	No
<i>Medicago polymorpha</i>	Burclover	No
<i>Mentha pulegium</i>	Pennyroyal	No
<i>Parentucellia viscosa</i>	Parentucellia	No
<i>Paspalum dilatatum</i>	Dallasgrass	No
<i>Perideridia kelloggii</i>	Yampa	Yes
<i>Phalaris paradoxa</i>	Hood canarygrass	No
<i>Picris echioides</i>	Prickly ox-tongue	No
<i>Plagiobothrys stipitatus</i>	Slender popcorn-flower	Yes
<i>Plantago lanceolata</i>	English plantain	No
<i>Pleuropogon californicus</i>	Semaphore grass	Yes
<i>Polygonum aviculare</i> ssp. <i>depressum</i>	Common knotweed	No
<i>Polypogon monspeliensis</i>	Rabbit-s-foot grass	No
<i>Ranunculus muricatus</i>	Spiny-fruit buttercup	No
<i>Raphanus sativus</i>	Wild radish	No
<i>Roripa nasturtium-aquaticum</i>	Watercress	Yes
<i>Rumex acetosella</i>	Sheep sorrel	No
<i>Rumex pulcher</i>	Fiddle dock	No

Scientific Name	Common Name	Native
<i>Scandix pecten-veniris</i>	Venus' needle	No
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Yes
<i>Silybum marianum</i>	Milk thistle	No
<i>Sisyrinchium bellum</i>	Blue eye grass	Yes
<i>Sonches asper</i>	Sow thistle	No
<i>Symphotrichum chilense</i>	Common California aster	Yes
<i>Taeniatherum caput-medusae</i>	Medusa-head	No
<i>Taraxacum officinale</i>	Common dandelion	No
<i>Trifolium fragiferum</i>	Strawberry clover	No
<i>Trifolium incarnatum</i>	Crimson clover	No
<i>Trifolium subterraneum</i>	Subterranean clover	No
<i>Triphysaria eriantha</i>	Johnny-tuck	Yes
<i>Triteleia hyacinthine</i>	White brodiaea	Yes
<i>Typha angustifolia</i>	Narrow-leaved cattail	Yes
<i>Typha latifolia</i>	Cattail	Yes
<i>Urtica dioica</i>	Stinging nettle	Yes
<i>Wyethia angustifolia</i>	Narrow-leaf mule's ear	Yes
<i>Xanthium spinosum</i>	Cocklebur	Yes

NOTES:

¹ Survey dates: March 26, 2007; April 16, 2007; May 18, 2007; March 28, 2008; April 18, 2008; May 27, 2008; July 16, 2008

**Wet Season Sampling for Federally Listed Large Branchiopods at the
Beringer-Blass Wines Estates Devlin Road Facilities Project Site,
Napa County, California**

Winter 2003 Survey Results for TE Permit Number TE0027422-0

Prepared for: Monty Maglinte
Beringer-Blass Wine Estates
1000 Pratt Ave., P.O. Box 111
St. Helena, CA 94574
(707) 963-7115

Prepared by: Brian Pittman
Environmental Science Associates
436 14th Street, Suite 600
Oakland, CA 94612
(510) 839-5066

Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

Introduction

This report provides an evaluation of special status crustaceans collected by Brian Pittman under FWS permit number TE-027422-0 during the 2003 survey year. The site described in this report is the Beringer-Blass Wine Estates (BBWE) project site in Napa County, California.

The BBWE project site is located immediately south of the Napa County Airport and approximately 1/3 mile east of the Napa River. The location of the project site is Township 4N, Range 4W, Section 11. Figure 1 shows the general location of the project site in Napa County. Mr. Pittman notified the U.S. Fish and Wildlife Service by letter on December 5, 2002 to request approval under the above permit to conduct protocol-level surveys at this location.

In summary, no listed or otherwise special status vernal pool crustaceans were identified in sampled locations on the BBWE project site during winter 2003 surveys. The 2003 survey is the second year of the two-year U.S. Fish and Wildlife Service survey protocol, with no large branchiopods identified on the project site in either 2002 or 2003. The sampled areas included 0.41 acres of low to moderate quality habitat for large branchiopod species on the BBWE project site.

Vernal pool fairy shrimp (*Branchinecta lynchi*)(VPFS) were identified by URS Griner biologists Steve Leach and Laura Cholodenko in February 2000 in the local project vicinity. Using a handheld Garmin GPS unit, the pool where VPFS were identified was located and measured relative to the BBWE Project site. This pool is located 520 feet west of the BBWE project site (+/- 18 feet). Site activities on the BBWE site are proposed at a distance of greater than 750 feet from this pool. Additionally, water flows from the BBWE site drain to No-name Creek and not into the area identified to harbor VPFS.

Project activities on the 218-acre BBWE project site include the construction of a large-scale winery facility and wastewater treatment facility, and vineyard planting. A roughly 25 to 30-acre open space preserve would be created on the northwest portion of the site as a buffer for the identified VPFS location.

This report discusses the methods and results of wet-season surveys to determine the presence or absence of large branchiopods on the BBWE project site.

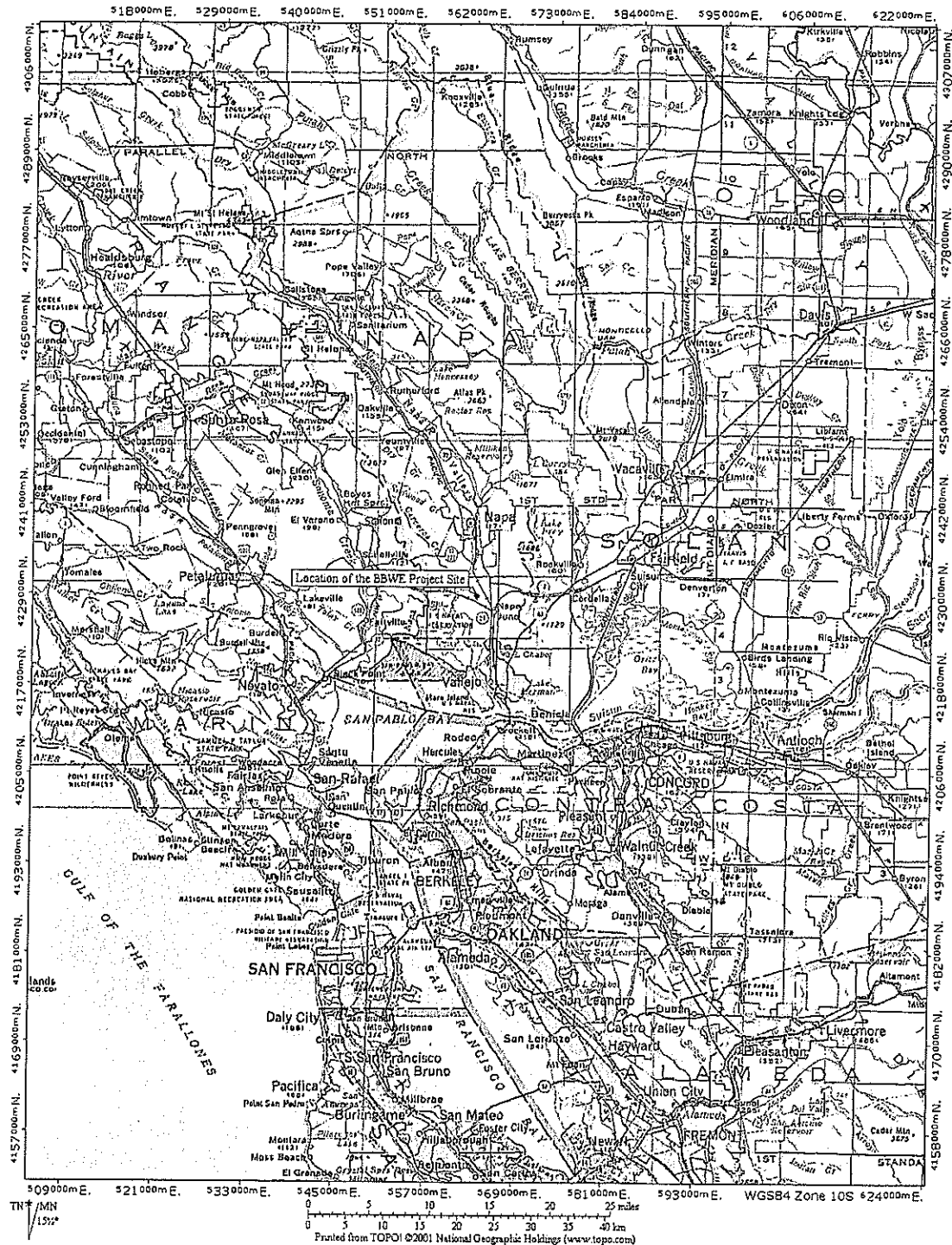
Habitat Description

The U.S. Army Corps of Engineers verified a wetland delineation of the BBWE site on December 20, 2000. The delineation identified 3.886 acres of seasonal wetlands of the BBWE project site, a portion of which were identified to provide habitat for VPFS. The current surveys focused on 0.41 acres of seasonally ponding basins and pools on the BBWE site. A summary of the sampled basins on the site is provided in Table 1.

Several unvegetated, non-wetland ponding areas were included in the sampling effort. These included two moderate sized basins (Feature B' and a small basin located near Wetland C) and a number of intermittently flooded cattle trails, all of which were sampled for the presence of VPFS during this and the previous years' survey. The project site boundary, locations of the sampling sites, and location of the CNDDDB-reported vernal pool fairy shrimp occurrence are shown in Figure 2. The pool locations shown in Figure 2 were generated using a handheld GPS unit and are considered accurate to within 3 meters.

Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

Figure 1. General Regional Location of the BBWE Project Site



Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

TABLE 1. FEATURES ON THE BBWE SITE THAT WERE SAMPLED DURING WINTER 2003 WET SEASON SURVEYS

Map Symbol	Site	Habitat Type ^a	Included in Surveys?	Wetland Area in Acres ¹
A	Seasonal wetland	Seasonal Wetland (SW)	YES	0.101 ac.
B	Seasonal wetland	SW	NO	0.067 ac.
B'	Non-jurisdictional	Unvegetated basin	YES	N/A
C	Seasonal wetland	SW	YES	0.013 ac.
D	Seasonal wetland	SW	YES	0.003 ac.
E	Seasonal wetland	SW	YES	0.040 ac.
F	Seasonal wetland	SW	YES	0.271 ac.
G	Seasonal wetland	SW	NO	0.204 ac.
H	Wetland seep	Freshwater Seep	NO	0.232 ac.
I	Large swale -- tributary to No-name Creek	SW	NO	1.397 ac.
J	On-site flood control channel -- contiguous with Site K	Freshwater Marsh (FM)	NO	0.145 ac.
K	Off-site flood control channel -- contiguous with Site J	FM	NO	0.365 ac.
L	No-name Creek south of the BBWE site -- seasonal drainage	SW	NO	0.002 ac. temporary fill area
M	No-name Creek	FM	NO	0.802 ac.
N	Seasonal Wetland	SW	NO	0.123 ac.
O -- Wet Portion	1-foot Wide Channel	SW	YES	0.017 ac.
O -- Dry Portion	1-foot Wide Channel	SW	YES	0.058 ac.
O-2	Seasonal Wetland	SW	YES	0.048 ac.

a: Habitat Types:

SW -- seasonal wetlands; FM -- freshwater marsh; SEEP -- freshwater seep

¹ Shaded rows indicate features that were included in wet season samples by Brian Pittman in winter 2003.

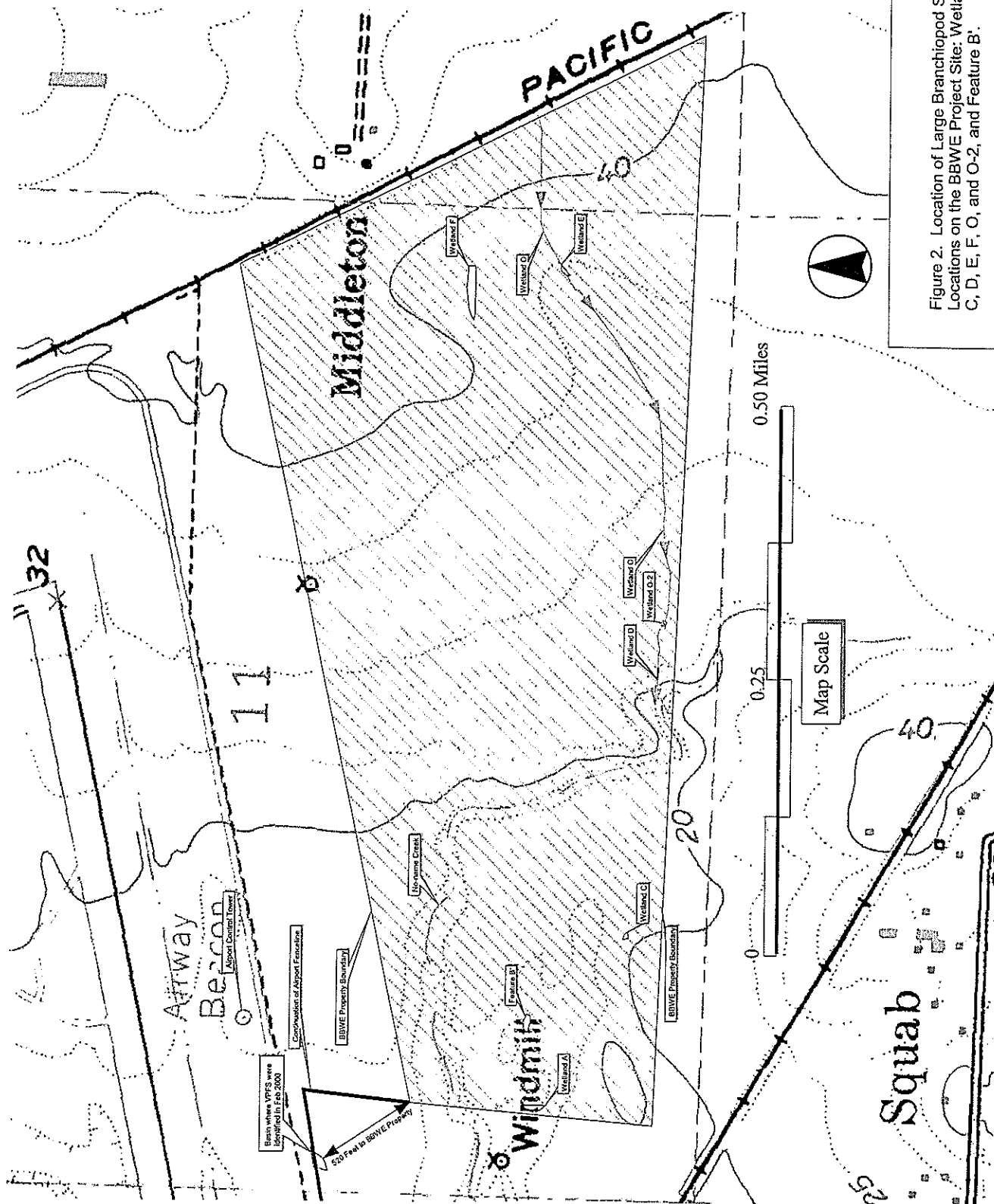


Figure 2. Location of Large Branchiopod Sampling Locations on the BBWE Project Site: Wetlands A, C, D, E, F, O, and O-2, and Feature B.

Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

Adjacent Land Uses.

The vicinity of the project site support the following land uses:

- North: To the immediate north of the site is the Napa County Airport. Airport Road, located on the Airport, parallels the northern BBWE site boundary. The Devlin Road Transfer Station and Napa County Compost Facility are located to the northeast of the proposed project site, near the intersection of South Kelly Road and Devlin Road. Further to the north and to the east (greater than 1/2 mile) are several existing or planned hotel/resort projects.
- East: The California Northern Railroad tracks define the eastern BBWE site boundary. Beyond the railroad corridor are several undeveloped parcels that consist of grazed and ungrazed non-native grasslands. Various industrial sites border the site on the southern half of its eastern border. Further to the east, commercial/industrial uses abut State Highway 29.
- South: The area to the south is undeveloped (non-native grassland used for pasture). Another California Northern Railroad line runs skew to the project site at the southwest corner (the two rail rights-of-way were previously owned by Southern Pacific Railroad, as indicated in maps of the site area, but California Northern acquired all assets of Southern Pacific in a merger completed in 1998).
- West: The area to the west is undeveloped non-native grassland used for pasturelands. The Napa River is located approximately 1/3 mile west of the BBWE project site.

Description of the Vernal Pool Community on the BBWE Site

Plant species observed in sampled basins include loosestrife (*Lythrum hyssopifolium*), dock (*Rumex crispus* and *R. pulcher*), spike rush (*Juncus* sp.), and coyote thistle (*Eryngium yaseyi*). Vegetation is sparse to dense in the pools, depending largely on cattle use and proximity to their preferred gathering areas (i.e., near salt licks). A master list of plant species observed on the BBWE project site is provided in Appendix A. Three of the "pools" on the site are small expansions of the one-foot wide, hand-excavated drainage channel: Wetland O. Wetland O runs from the eastern boundary of the site to No-name Creek. Along its length there are several areas that balloon out into larger ponding features. These are Wetland D, Wetland E, and Wetland O-2. Water flows through Wetland O and Wetland D during storm events and throughout the winter months, thus these features are considered minimally suitable for VPFS. Wetland A, Wetland C, Wetland F, and Feature B' are more characteristic static pools that receive runoff through sheet flows from the surrounding landscape.

The location of the cattle salt lick on the site and associated distribution of cattle, appear to contribute to eutrophic conditions in Wetland C and Feature B' (i.e., cattle feces and urine concentrate in these features). These features had tea-colored water during all sampling visits in winter 2002 and winter 2003. Both features experienced dense red algae growth that covered the entire pool surface. Such conditions could be seen to a lesser degree in Wetland A.

Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

The BBWE site has been grazed extensively for decades and is highly “pocked” with cow hoof depressions. The many small depressions created by passing cows are especially prevalent in low-lying wet areas. All wetlands and ponding features on the site, including No-name Creek, show extensive cattle use.

Survey Methodology

Wet-season sampling was conducted by Brian Pittman under permit TE-027422-0 of Section 10(a)(1)(a) of the federal Endangered Species Act, 16 U.S.C. 1531 *et seq.*, and its implementing regulations. Methods followed the U.S. Fish and Wildlife Service (USFWS) *Interim Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* (1996).

The BBWE project site comprises a 218-acre site, of which roughly 25 to 30 acres are proposed for conservation. The remaining roughly 185 acres would be developed and are the focus of the current survey assessment. All potential habitat for large branchiopod species on the BBWE site was sampled at two-week intervals as per the USFWS *Interim Survey Guidelines*. Thus, surveys concentrated on the following basins, which totaled 0.41 acres: Wetlands A, C, D, E, F, O, O-2, and “Feature B’.” The location of these features is mapped in Figure 2. Surveys were initiated on December 18, 2002, within two weeks of initial pool inundation and were completed on April 8, 2003.

Potential habitat for large branchiopods includes any seasonally inundated depression that on average ponds water 3 centimeters or greater in depth for 14 or more consecutive days. Habitats that flow water (e.g., creeks, streams and ephemeral drainages) or semi-to-permanently inundated areas were not considered suitable habitat for federally listed large branchiopods.

Sampling at the BBWE project site was conducted on the following dates:

December 18, 2002
January 3, 16 and 31, 2003
February 14 and 24, 2003
March 11 and 25, 2003
April 8, 2003 (Wetland F and Feature B’ only)

As several pools were dry at the time of the December 18, 2002 survey, a ninth site visit was required to complete the eight-survey USFWS survey protocol at Wetland F and Feature B’.

Wet season sampling entailed dip netting within all potential habitats for large branchiopods at two week intervals from the time the habitats first ponded water until they dried (or until the 8th site survey). Surveys employed both a 12-inch dip net and 6-inch hand net with a fine mesh. All organisms captured in the dipnet were identified to the lowest necessary taxonomic group and then released in the field.

Special Status Species List

The BBWE site is geographically situated in southern Napa County, within the identified range of the VPFS. Based on the known distribution of other listed branchiopod species, VPFS is the only listed branchiopod species known from the Napa County project vicinity. This determination was made by

Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

consulting the CNDDDB (CDFG, 2002), resource experts (Cholodenko, pers. comm.), reviewing pertinent scientific literature (Eriksen and Belk, 1999); and review of Federal Register notices to determine the range of vernal pool crustaceans with potential to occur in the project region (Fed. Reg., 1994; 2002).

The VPFS was identified in February 2000 at a single location in Napa County (CDFG, 2002; Fed. Reg., 2002). Mr. Pittman verified the location of this sighting in a basin located 520 feet northwest of the BBWE project site.

The next nearest occurrence of VPFS reported by the CNDDDB is greater than ten miles east of the project study area. Specifically, the next nearest reported sighting occurs 14.4 miles east of the project site in a railroad borrow pit in Tolenas, Solano County (CNDDDB Occ #331). The second closest occurrence, reported in 1996, is 15.4 miles from the BBWE site at the Potrero Hills Landfill in Solano County (CNDDDB Occ #184)(CNDDDB, 2002).

Results

No federally listed large branchiopods were observed in the sampled locations on the BBWE site. Representative photographs of these basins are provided in Appendix B. As pool conditions have not changed since the 2002 sampling period, the site photos in this report are identical to those presented in the 2001-2002 report. No common vernal pool branchiopods were found in any basins sampled on the BBWE site. Data sheets that describe site conditions at each pool during the monitoring effort are provided in Appendix C.

Discussion and Conclusions

Results of the 2003 wet season survey did not yield any listed or non-listed branchiopods. A summary of ponding conditions in sampled pools during the winter 2003 season is provided in Table 2. The 2002 BBWE large branchiopod monitoring report is provided in Appendix D.

Wet season surveys were conducted during both 2002 and 2003. Since no listed branchiopods were observed during either the 2002 or 2003 wet season surveys, I conclude that no listed branchiopods inhabit the surveyed seasonal wetland habitats on the project site. The combination of two wet season surveys in consecutive years completes the survey requirements for sampled wetlands site per the USFWS protocol.

Mr. Pittman verified the CNDDDB-reported location of VPFS in the local site vicinity. This feature is located 520 feet west of the BBWE site at a 325-degree bearing from the northwestern corner of the site. This basin straddles the fenceline between the Napa County Airport and the adjoining property to the west. The location is properly identified by the CNDDDB, and is mapped in Figure 2.

As no large branchiopod specimens were identified or collected in the field, the preservation and laboratory analysis of specimens was not necessary. No voucher specimens were collected in association with these surveys, thus a CNDDDB reporting form has not been prepared.

Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

Table 2. Sampling Locations and Ponding Conditions²

	Wetland A	Feature B'	Wetland C	Wetland D	Wetland E	Wetland F	Wetland O	Wetland O-2
18 Dec 2002	X	Dry	X	X	X	Dry	X	X
3 Jan 2003	X	X	X	X	X	X	X	X
16 Jan 2003	X	X	X	X	X	X	X	X
31 Jan 2003	X	X	X	X	X	X	X	X
14 Feb 2003	X	X	X	X	X	X	X	X
24 Feb 2003	X	X	X	X	X	X	X	X
11 Mar 2003	Dry	Dry	X	X	Dry	X	Dry	Dry
25 Mar 2003	Dry	Dry	X	X	X	X	X	X
8 Apr 2003	--	Dry	--	--	--	Dry	--	--

"X" indicates water present; Wetland F and Feature B' were the only features sampled on 8 April 2003

² Refer to Appendix C for data sheets that describe the physical conditions at each site.

Literature Cited and Personal Communications

- California Department of Fish and Game (CDFG). 2002. California Natural Diversity Database, Rarefind 2. CDFG, Sacramento, CA, updated December 2002.
- Cholodenko, Laura. 2001. Personal communication with B. Pittman, spring 2001.
- Eriksen, C. and D. Belk. 1999. *Fairy Shrimps of California's Puddles, Pools, and Playas*. Mad River Press, Eureka, CA, 196 pp.
- Federal Register. 1994. *Final Rule: Endangered and Threatened Wildlife and Plants: Determination of Endangered Status for the Conservancy Fairy Shrimp, Longhorn Fairy Shrimp, and the Vernal Pool Tadpole Shrimp; and Threatened Status for the Vernal Pool Fairy Shrimp*. Fed. Reg. 59 FR 48136, U.S. Fish and Wildlife Service, September 19, 1994.
- Federal Register. 2002. *Proposed Critical Habitat Designation for Four Vernal Pool Crustaceans (Conservancy Fairy Shrimp, Longhorn Fairy Shrimp, Vernal Pool Fairy Shrimp, and Vernal Pool Tadpole Shrimp) and Eleven Vernal Pool Plants (Butte County meadowfoam, Contra Costa Goldfields, Hoover's Spurge, Succulent (or Fleshy) Owl's-clover, Colusa Grass, Greene's Tuctoria, Hairy Orcutt Grass, Sacramento Orcutt Grass, San Joaquin Valley Orcutt Grass, Slender Orcutt Grass, and Solano Grass) in California and Southern Oregon*. Fed. Reg. 67 FR 59883-59932, U.S. Fish and Wildlife Service, September 24, 2002.
- Pittman, Brian. 2002. Annual Monitoring Report for Brian Pittman under FWS Permit # TE-027422-0.

Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

Appendix A. Beringer-Blass Wine Estates Project Site Plant List

Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

BERINGER-BLASS WINE ESTATES, DEVLIN ROAD PROJECT SITE PLANT LIST³

Family (Dicotyledonae)					
	Species	Common name	NNG ⁴	SW	Creek
Apiaceae					
	<i>Eryngium yaseyi</i>	Coyote thistle		*	
⊕	<i>Foeniculum vulgare</i>	Fennel	*		
	<i>Perideridia kelloggii</i>	Yampah	*		
Asteraceae					
⊕	<i>Anthemis cotula</i>	Dog-fennel	*		
	<i>Aster lentus</i>	Suisun marsh aster (see note)			*
	<i>Baccharis pilularis</i>	Coyote thistle	*		
⊕	<i>Centaurea calitrapa</i>	Purple star thistle	*		
⊕	<i>Centaurea solstitialis</i>	Yellow star thistle	*		
⊕	<i>Chamomilla suaveolens</i>	Pineapple weed	*		
⊕	<i>Cichorium intybus</i>	Chicory	*		
⊕	<i>Cotula coronopifolia</i>	Brass buttons			*
⊕	<i>Hieracium albiflorum</i>	hawkweed	*		
⊕	<i>Hemizonia congesta</i> ssp. <i>congesta</i>	Hayfield tarweed	*		
⊕	<i>Hemizonia congesta</i> ssp. <i>luzulifolia</i>	Tarweed	*		
⊕	<i>Lactuca saligna</i>	Willow lettuce	*		
⊕	<i>Lactuca serriola</i>	Prickly lettuce	*	*	
⊕	<i>Picris echioides</i>	Prickly ox-tongue	*	*	
⊕	<i>Silybum marianum</i>	Milk thistle	*		
⊕	<i>Sonchus asper</i> var. <i>asper</i>	Prickly sow thistle	*		
⊕	<i>Sonchus oleraceus</i>	Common sow thistle	*		
⊕	<i>Taraxacum officinale</i>	dandelion	*		
⊕	<i>Xanthium spinosum</i>	Spiny cocklebur	*		
⊕	<i>Xanthium strumarium</i>	cocklebur	*		*
Boraginaceae					
	<i>Plagiobothrys fulvus</i>	Popcorn flower	*		
Brassicaceae					
⊕	<i>Brassica rapa</i>	Field mustard	*		
⊕	<i>Brassica nigra</i>	Black mustard	*		
⊕	<i>Raphanus sativus</i>	Wild radish	*		
⊕	<i>Sisymbrium officinalis</i>	Hedge mustard	*		
Callitrichaceae					
	<i>Callitriche</i>			*	
Caryophyllaceae					
⊕	<i>Cerastium viscosum</i>	Chickweed			

³ Plants marked by a "⊕" are not native to California.

Source: ESA field observations (March 30, April 2000; Kjeldsen Biological Consulting, 1999).

⁴ Species locations on the BBWE site: NNG = non-native grasslands; SW = seasonal wetlands (seasonal pools); Creek = No-name Creek.

Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

	<i>Spergularia</i>				
Convolvulaceae					
⊕	<i>Convolvulus arvensis</i>	Field bindweed	*		
Cyperaceae					
	<i>Carex</i> sp.	Sedge			*
⊕	<i>Cyperus eragrostis</i>	Umbrella scdgc			*
Euphorbiaceae					
	<i>Eremocarpus setigerus</i>	Turkey mullein	*		
Fabaceae					
	<i>Lotus corniculatus</i>	Birdsfoot trefoil	*		
	<i>Lotus humistratus</i>		*		
	<i>Lupinus bicolor</i>	Annual lupine	*		
⊕	<i>Medicago polymorpha</i>	Bur clover	*		
⊕	<i>Trifolium</i>	Tomcat clover	*		
⊕	<i>Trifolium subterraneum</i>		*		
⊕	<i>Vicia sativa</i>	Common vetch	*		
Gentianaceae					
	<i>Centaurea muhlenbergii</i>	canchalagua	*		
Geraniaceae					
⊕	<i>Erodium cicutarium</i>	Filaree	*		
⊕	<i>Geranium dissectum</i>	Storksbill	*		
Juncaginaceae					
	<i>Lilaea scilloides</i>			*	*
Lythraceae					
⊕	<i>Lythrum hyssopifolium</i>	Loosestrife		*	*
Myrtaceae					
⊕	<i>Eucalyptus globulus</i>	Blue gum	*		
Onagraceae					
	<i>Camissonia ovata</i>	Suncups	*		
	<i>Epilobium ciliatum</i>	Willow herb			
Plantaginaceae					
⊕	<i>Plantago erecta</i>	English plantain	*		
Polygonaceae					
*	<i>Polygonum arenastrum</i>	Common knotweed	*		
*	<i>Rumex acetocella</i>	Sheep sorrel	*		
*	<i>Rumex crispus</i>	Curly dock	*	*	
*	<i>Rumex pulcher</i>	Dock	*	*	
Primulaceae					
	<i>Anagallis arvensis</i>	Scarlet pimpernel			
Ranunculaceae					
	<i>Ranunculus bonariensis</i>				

Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

	<i>Ranunculus muricatus</i>				
Rosaceae					
✧	<i>Rubus discolor</i>	Himalayan blackberry			
Salicaceae					
	<i>Salix laevigata</i>	Red willow			*
	<i>Salix hindsiana</i>	Sandbar willow			*
Scrophulariaceae					
	<i>Bellardia trixago</i>		*		
	<i>Orthocarpus pusillus</i>	Dwarf owl clover	*		
	<i>Triphysaria erianthus</i>	Butter and eggs	*		
	<i>Triphysaria sp.</i>		*		
Family (Monocotyledonae)					
Alismataceae					
	<i>Alisma plantago-aquatica</i>	Water plantain			*
Cyperaceae					
	<i>Carex sp.</i>	Sedge			*
✧	<i>Cyperus eragrostis</i>	Umbrella sedge			*
Juncaceae					
	<i>Eleocharis macrostachya</i>	Spikerush			*
	<i>Juncus balticus</i>	Baltic rush		*	*
	<i>Juncus xiphioides</i>	Iris-leaved rush		*	*
Poaceae					
✧	<i>Avena barbata</i>	Slender oat	*		
✧	<i>Avena sativa</i>	Cultivated oat	*		
✧	<i>Briza minor</i>	Small quaking grass	*		
✧	<i>Bromus diandrus</i>	Ripgut brome	*		
✧	<i>Deschampsia californica</i>	California hairgrass			*
	<i>Distichlis spicata</i>	saltgrass			*
✧	<i>Lolium multiflorum</i>	Italian ryegrass	*		
✧	<i>Lolium perenne</i>	Perennial ryegrass	*		
✧	<i>Hordeum murinum ssp. leporinum</i>	foxtail barley	*		
	<i>Polypogon monspeliensis</i>	Rabbitfoot grass			*
✧	<i>Vulpia microstachys</i>	Fescue	*		

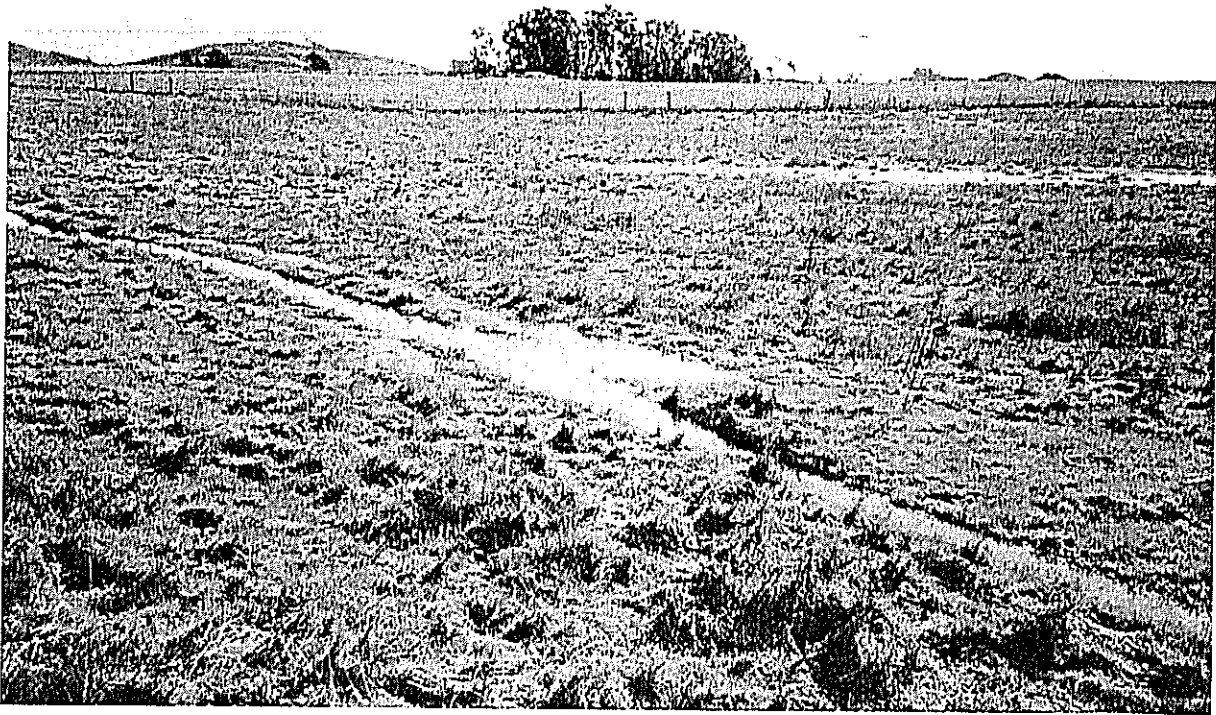
Appendix B. Representative Photographs of Sampled Basins on the BBWE Project Site.



Wetland A. This feature is located on the western BBWE property line. View is to the northwest.



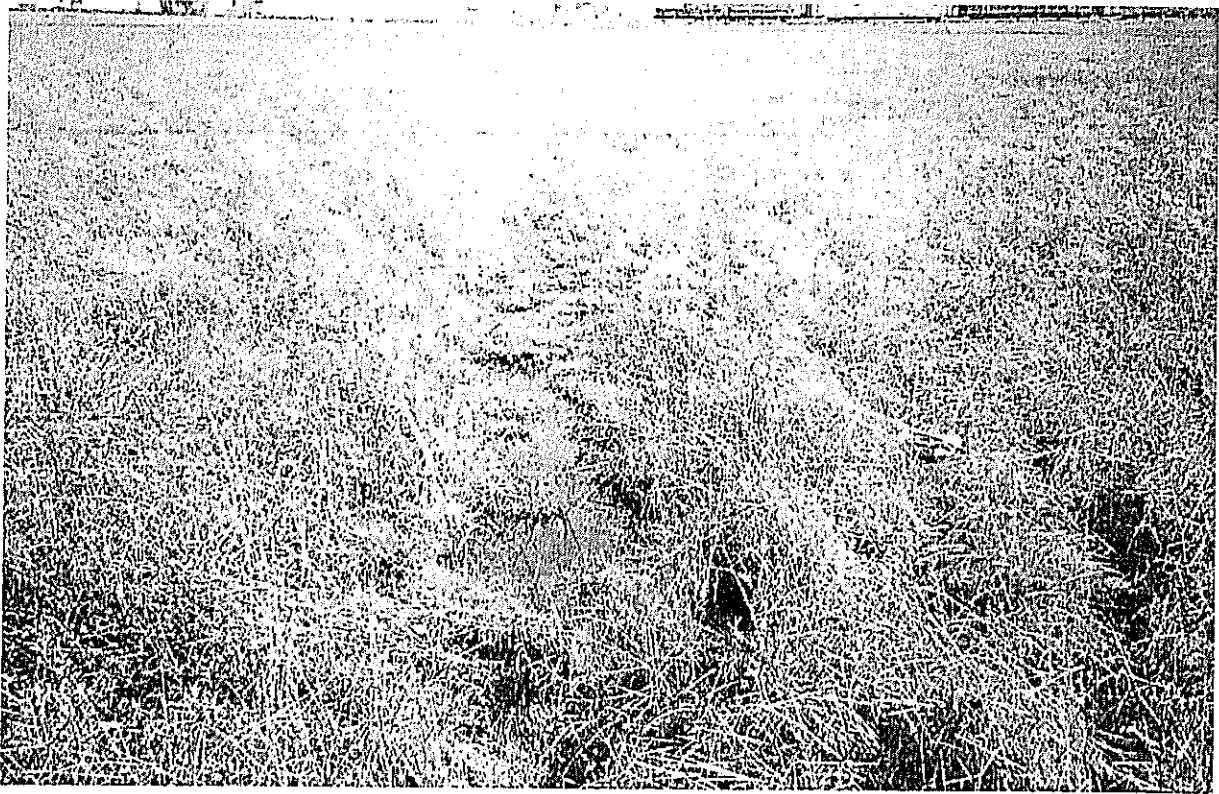
Feature B Prime. This feature is located roughly between Wetland B and Wetland C, west of No-name Creek.



Wetland C. This feature is located on the southern BBWE project boundary. A flooded cattle path is visible in the foreground and was included in wet season sampling.



Wetland D. This feature is located within Wetland O and experiences heavy water flows at times. The view in this photo is to the southwest.



Wetland E. This feature is located on the southeast portion of the project site along the length of Wetland O. Several small non-wetland cattle trails were also included in the sampling effort.



Wetland F. This feature straddles a fenceline in the middle portion of the project site. The view in this photo is to the southeast.



Wetland O. The portion of this feature that provides habitat for VPFS is located on the eastern boundary of the BBWE project site. This photo shows the channel as it exits the railroad right of way. The one-foot wide Wetland O channel was dug by hand at some point to drain water away from the railroad alignment. This feature traverses the BBWE site; however, habitat for VPFS only occurs in isolated portions of this feature (i.e. near the railroad alignment, at Wetland E, Wetland O-2, and near Wetland D).



Wetland O-2. This feature was identified during the January 22, 2002 sampling visit. This detail photo shows the cattle hoof prints that collectively make up Wetland O-2.

Beringer-Blass Wine Estates Devlin Road Facility
2003 Large Branchiopod Survey Results

Appendix C. Data Sheets (Available upon request)

Appendix D. 2001-2002 Beringer-Blass Wine Estates Survey Report

Annual Monitoring Report for Brian Pittman, FWS Permit # TE 027422-0
February 13, 2003

Brian Pittman
Environmental Science Associates
436 14th Street, Suite 600
Oakland, CA 94612
(510) 839-5066

Introduction

This annual report provides an evaluation of special status crustaceans collected by Brian Pittman under FWS permit number TE-027422-0 during 2002. One site was surveyed during the 2002 survey year, the Beringer-Blass Wine Estates (BBWE) project in Napa County, California.

The BBWE project site is located immediately south of the Napa County Airport and approximately 1/3 mile east of the Napa River. The location of the project site is Township 4N, Range 4W, Section 11. The attached figures show the boundaries of the project site. Mr. Pittman notified the U.S. Fish and Wildlife Service by letter on December 18, 2001 to request approval under the above permit to conduct protocol-level surveys at this location.

In summary, no listed or otherwise special status vernal pool crustaceans were identified in sampled locations on the BBWE project site during winter 2002 surveys. Potential habitat for the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*) occurs in 0.41 acres of low to moderate quality seasonal wetlands that were sampled on the project site.

VPFS were identified by URS Griner biologists Steve Leach and Laura Cholodenko in February 2000 in the local project vicinity. Using a handheld Garmin GPS unit, the pool where VPFS were identified was located and measured relative to the BBWE Project site. This pool is located 520 feet west of the BBWE project site (+/- 18 feet). Site activities on the BBWE site are proposed at a distance of greater than 750 feet from this pool.

Methodology

All potential habitat for listed branchiopod species on the BBWE site, with the exception of seasonal pools that were located within a 30-acre conservation area (see attached map) were sampled at two-week intervals as per the April 19, 1996, *Interim Survey Guidelines*. Surveys were initiated during the week of January 1, 2002, within two weeks of initial pool inundation. The location of these pools is provided in the attached maps.

The BBWE project site comprises a 218-acre site, of which roughly 30 acres are proposed for conservation. The remaining roughly 185 acres would be developed and are the focus of the current survey assessment.

Within the BBWE property, the following wetlands were sampled for the presence of listed branchiopod species: Wetlands A, C, D, E, F, O, O-2, and "Feature B'." These features are mapped in the attached figures.

The following activities were performed as part of my evaluation:

- Compilation of a list of listed branchiopod species with potential to occur on or adjacent to the project site;
- Review of existing project information, including examination of aerial photographs, coordination with URS Griner biologists, the California Natural Diversity Database, and other background materials to identify habitat types, topographical features, and other factors that would influence the presence or absence of listed branchiopod species;
- Review of historical and recent distribution records for these invertebrates obtained from various databases and pertinent literature⁵; and
- Wet season sampling visits were conducted at two-week intervals on January 4, January 22, February 11, February 20, March 3, 2002 to survey for special status branchiopods and to evaluate the suitability of habitats on the project site to support VPFS. Due to warm, dry weather conditions in the months following January 2002, the sampled pools on the site were dry following the fifth survey in March 2002. Thus, five surveys were possible under the USFWS survey protocol (four surveys in Wetland O-2).

Special Status Species List

The BBWE site is geographically situated in southern Napa County, within the identified range of one listed branchiopod species, vernal pool fairy shrimp. Based on the known distribution of other listed branchiopod species, VPFS is the only listed branchiopod species with a known range in the Napa County project vicinity. This determination was made by consulting the California Natural Diversity Database⁶, which summarizes special status species occurrences statewide and is maintained by the California Department of Fish and Game; reviewing pertinent scientific literature; and review of Federal Register notices to determine the range of vernal pool crustaceans with potential to occur in the project region⁷.

The VPFS was identified in February 2002 at a single location in Napa County. This sighting was verified by Brian Pittman at a seasonal wetland located 520 west of the BBWE project site. The next nearest occurrence of this species is greater than 5 miles from the project study area in Solano County.

⁵ Eriksen, C. and D. Belk. 1999. Fairy Shrimps of California's Puddles, Pools, and Playas. Mad River Press, Eureka, CA, 196 pp.

⁶ California Department of Fish and Game. 2002. California Natural Diversity Database, Rarefind 2. CDFG, Sacramento, CA, updated December 2002.

⁷ Federal Register. 1994. Final Rule: Endangered and Threatened Wildlife and Plants: Determination of Endangered Status for the Conservancy Fairy Shrimp, Longhorn Fairy Shrimp, and the Vernal Pool Tadpole Shrimp; and Threatened Status for the Vernal Pool Fairy Shrimp. Fed. Reg. 59 FR 48136, U.S. Fish and Wildlife Service, September 19, 1994.

The wetland delineation for the project site was verified by the U.S. Army Corps of Engineers on December 20, 2000. A description of the pools on the site is provided in Table 1. All seasonal wetlands identified in the verified delineation (outside of a designated conservation area) were included in wet season sampling. Additionally, two non-wetland pools were included in the sampling effort (Feature B' and a pool located near Wetland C) and an additional wetland identified in January 2002 (Wetland O-2) was included in the

**TABLE 1. FEATURES ON THE BBWE SITE THAT WERE SAMPLED DURING WINTER 2002
WET SEASON SURVEYS**

Map Symbol	Site	Habitat Type ^a	Sampled during Winter 2002?	Wetland Area ⁸		Listed Species Habitat ^b
				Square feet	Acres	
A	Seasonal wetland	Seasonal Wetland (SW)	YES	4,415 sq. ft.	0.101 ac.	VPFS
B	Seasonal wetland	SW	NO	2,910 sq. ft.	0.067 ac.	VPFS
B'	Non-jurisdictional		YES	N/A	N/A	VPFS
C	Seasonal wetland	SW	YES	550	0.013 ac.	VPFS
D	Seasonal wetland	SW	YES	133 sq. ft.	0.003 ac.	None
E	Seasonal wetland	SW	YES	1,731	0.040 ac.	VPFS
F	Seasonal wetland	SW	YES	11,810	0.271 ac.	VPFS
G	Seasonal wetland	SW	NO	8,906 sq. ft.	0.204 ac.	VPFS
H	Wetland seep	Freshwater Seep	NO	10,116 sq. ft.	0.232 ac.	None
I	Large swale – tributary to No-name Creek	SW	NO	60,855 sq. ft.	1.397 ac.	VPFS
J	On-site flood control channel – contiguous with Site K	Freshwater Marsh (FM)	NO	6,320 sq. ft.	0.145 ac.	None
K	Off-site flood control channel – contiguous with Site J	FM	NO	15,900 (50 linear feet; 300 sq. ft. fill area)	0.365 ac. (0.007 ac. shading area)	None
L	No-name Creek south of the BBWE site – seasonal drainage	SW	NO	10 linear feet at 10 feet wide; 100 sq. ft. fill area	0.002 ac. temporary fill area	None
M	No-name Creek	FM	NO	34,930 sq. ft. total creek area on BBWE site (shading will affect 15 linear feet; 60 sq. ft.)	0.802 ac. (0.001 ac. fill area)	None
N	Seasonal Wetland	SW	NO	5,374 sq. ft.	0.123 ac.	VPFS
O – Wet Portion	1-foot Wide Channel	SW	YES	720 linear feet – 720 sq. ft.	0.017 ac.	None
O – Dry Portion	1-foot Wide Channel	SW	YES	2,274 linear feet; 2,538 sq. ft.	0.058 ac.	VPFS in upstream-most 500 ft ² area
O-2	Seasonal Wetland	SW	YES	2,075 sq. ft.	0.048 ac.	VPFS

a: Habitat Types: SW – seasonal wetlands; FM – freshwater marsh; SEEP – freshwater seep

b: Listed species habitat: VPFS – Vernal pool fairy shrimp (*Branchinecta lynchi*); a federal Threatened species.

⁸ Shaded rows indicate features that were included in wet season samples by Brian Pittman in winter 2002.

sampling effort. The locations of the sampling sites are shown in the attached figures. Wet season surveys were performed at all seasonally ponded areas in the study area as previously described on January 4, January 22, February 11, February 20, and March 3, 2002 following the current (1996) USFWS survey protocol⁹. All pools were dry by mid-March, thus additional surveys were not possible.

Results

The BBWE project site is located on the Cuttings Wharf USGS quadrangle in Napa County, California. Seven Corps'-jurisdictional seasonal pools and two additional ponded features were sampled on the BBWE project site for the presence of large branchiopods.

No listed or otherwise special status vernal pool crustaceans were identified during the course of U.S. Fish and Wildlife Service surveys at this site in winter 2002.

Weather conditions during sampling were clear to partially cloudy during all sampling visits. Water temperatures in the pools during the sampling period ranged from 13° C in early January to 21° C in early March (in the warmest pool). Photographs of the sampled pools are provided as an attachment to this report.

Adjacent Land Uses.

The vicinity of the project site supports a variety of land uses.

North: Immediately to the north of the site is the Napa County Airport, with Airport Road adjacent to and paralleling the northern boundary of the project site. The Devlin Road Transfer Station and Napa County Compost Facility are located to the northeast of the proposed project site, near the intersection of South Kelly Road and Devlin Road. Further to the north and to the east (greater than ½ mile) are several existing or planned hotel/resort projects.

East: The California Northern Railroad tracks lie adjacent and parallel to the east boundary; beyond that are undeveloped parcels that consist of grazed and ungrazed non-native grasslands. Various industrial sites border the site on the southern half of its eastern border. Further to the east, commercial/industrial uses abut State Highway 29.

South: The area to the south is undeveloped (non-native grassland used for pasture) up to the commercial/industrial uses fronting on Green Island Road. Another California Northern Railroad line runs skew to the project site at the southwest corner (the two rail rights-of-way were previously owned by Southern Pacific Railroad, as indicated on existing maps of the site area, but California Northern acquired all assets of Southern Pacific in a merger completed in 1998).

West: The area to the west is undeveloped non-native grassland used for pasturelands.

⁹ U.S. Fish and Wildlife Service. 1996. Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods. Sacramento Field Office, April 19, 1996.

Description of the Vernal Pool Community

Plant species observed in the seasonal wetlands during the sampling period include loosestrife (*Lythrum hyssopifolium*), dock (*Rumex crispus* and *R. pulcher*), spike rush (*Juncus* sp.), and coyote thistle (*Eryngium yaseyi*). Vegetation is sparse to dense in the pools, depending largely on cattle use and proximity to their preferred gathering areas (i.e., near salt licks). Three of the “pools” on the site are small expansions of one-foot wide, hand-excavated drainage channel, Wetland O. Wetland O runs from the eastern boundary of the site to No-name Creek. Along its length there are several areas that balloon out into larger ponding features. These are Wetland D, Wetland E, and Wetland O-2. Water visibly flows through Wetland O and Wetland D during storm events and throughout the winter months, thus these features are considered minimally suitable for VPFS. Wetland A, Wetland C, Wetland F, and Feature B’ are more characteristic static pools that rely on their water through collected sheet flows from the surrounding landscape.

The location of the salt lick on the site and associated distribution of cattle, appear to contribute to eutrophic conditions in Wetland C and Feature B’ (i.e., cattle feces and urine concentrate in these features). These features had tea-colored water during all sampling visits in winter 2002, and were generally devoid of animal life. Both of these features also experienced extensive growth of a red algae that covered the entire surface of the pools. As a result, water temperatures were substantially higher in these features. Such conditions could be seen to a lesser degree in Wetland A.

Vertebrate and invertebrate species observed in the pools include pacific chorus frog (*Hyla regilla*) eggs and larvae (Wetland F), ostracods (Wetland F, Wetland D, and Wetland O), and copepods (all wetlands except Wetland C and Feature B’). Planarians were observed on the surface of all wetlands, and in abundance in Wetland D and Wetland O.

The BBWE site has been grazed extensively for decades and is highly “pocked” with cow hoof depressions. The many small depressions created by passing cows are especially prevalent in low-lying areas and fill and dry between rainstorms in November and December, before the pools on the site begin to fill. All wetlands and ponding features on the site, including No-name Creek, show extensive cattle use.

Conclusion

Based on the presence of suitable habitat, it is possible that VPFS could occur in seasonally ponding areas in the study area. Due to the flowing characteristics of Wetland O and Wetland D during much of the study period, these features are not considered to provide habitat for this species. However, because these features were studied in the winter 2002 surveys they will be included in later year (winter 2003) surveys.

Based on the survey findings of the BBWE study area for winter 2002, VPFS were not identified on the project site. However, an additional year of surveys will be required to establish species presence or absence in the BBWE study area.

The CNDDDB-reported location of VPFS was verified by locating the identified pool location relative to the BBWE project site. The pool was located in the field using a Garmin GPS receiver using the coordinates provided by the CNDDDB. The distance to the project site was verified by GPS, and is considered accurate to within 6 meters (i.e., +/- ~18 feet). Though dipnetting was not performed in this pool, two fairy shrimp (*Branchinecta* sp.) were identified after only about 20 seconds of visual observations in a one square meter area. Based on the large size of the pool, the fairy shrimp population likely still approaches that reported by Brian Pittman, TE 027422-0
2002 Annual Report

Leach and Cholodenko in the CNDDDB (100's of shrimp). Because this pond was not located on the BBWE project site, the unidentified Branchinectids were not collected or identified to species and are thus considered unidentified.

This feature is located 520 feet west of the BBWE site, at a 325-degree bearing from the northwestern corner of the BBWE site. The pool straddles the fenceline between the Napa County Airport and the adjoining property to the south, and is properly mapped in the CNDDDB.