TECHNICAL MEMORANDUM

GLENN LUKOS ASSOCIATES

Regulatory Services

PROJECT NUMBER: 03650025CLAY

TO: Hardy Strozier, The Planning Associates

FROM: Jason Fitzgibbon, Biologist

DATE: May 25, 2014

SUBJECT: Update to Biological Constraints Analysis for the 1,400-Acre Alberhill Villages Specific Plan Site Located in Lake Elsinore, Riverside County, California.

On March 24, and May 12, 2014, updated focused plant surveys and general biological surveys were conducted at the approximately 1,420-acre Alberhill Villages Specific Plan (site), in the City of Lake Elsinore, Riverside County, California. Firstly, the purpose of this update was to verify existing biological resources on-site as identified during surveys conducted by Glenn Lukos Associates (GLA) biologists in 2008. Secondly, updated focused plant surveys, general biological surveys, and habitat assessments for sensitive species were conducted to identify and address the potential for the project to impact any sensitive species that may not have been addressed in the 2008 GLA Biological Constraints report.

SUMMARY

In general, relatively few changes were noted at the approximately 1,420-acre site. The majority of the site is still being actively mined and as a result is primarily comprised of ruderal, non-native vegetation, or recently disturbed ground. Significant changes in vegetation/land cover types at the site included the recent removal of a large area of non-native eucalyptus (*Eucalyptus* sp.) woodland along the northern margin of the site adjacent to Temescal Creek Road, the establishment of a few isolated patches of Riversidean sage scrub within the active mine footprint, and the growth of willow riparian forest along the perimeter of multiple water quality basins. Various other small changes were made in the updated vegetation map and are described in detail below.

No new sensitive plant species were detected during biological surveys at the site. The majority of previously documented sensitive plant species were verified during the updated surveys. Species that were not identified during updated surveys included graceful tarplant (*Holocarpha virgate* ssp. *elongata*), and paniculate tarplant (*Deinandra paniculata*), both of which are still presumed to be present but had not yet bloomed during the time of the surveys.

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No new sensitive animal species were detected during biological surveys at the site. However, suitable habitat (willow riparian forest) for the federally and state listed as endangered least Bell's vireo (*Vireo bellii pusillus*), does now occur along the margins of several water quality basins within the active mine footprint. These areas are also more likely to support the yellow-breasted chat and yellow warbler, both California Department of Fish and Wildlife (CDFW) species of special concern.

VEGETATION MAPPING

In general, vegetation/land cover types at the Alberhill Villages Specific Plan (AVSP) site were very similar to those documented and described during the 2008 surveys. The majority of the site is still being actively mined, and as a result is primarily comprised of disturbed/developed areas, non-native grassland, and areas of native vegetation that exhibit some significant level of current and/or past disturbance. Some differences in vegetation/land cover types were documented between site conditions documented during 2008 surveys and those present on-site now (Table 1).

Updates to the vegetation map (Exhibit 1) included the loss of approximately 14.65 acres of eucalyptus woodland along the northern perimeter of the site, approximately 3.36 acres of newly established Riversidean sage scrub within the mine footprint, and approximately 6.83 acres of willow riparian forest and 5.02 acres of mulefat scrub that have grown vigorously within several water quality/siltation basins. Additionally, approximately 70 acres of previously disturbed areas, and 8.21 acres of chaparral have been colonized by non-native grasses since 2008. See Table 1 for a comparison of 2008 and 2014 vegetation/land cover types and acreages. Following is a description of the two new vegetation classifications documented on site; willow riparian forest, and mulefat scrub. Please refer to the 2008 GLA Biological Constraints report for additional information regarding the previously mapped vegetation types and descriptions.

Table 1. 2008/2014 Vegetation/Landcover Types.

2008 Vegetation/Land Cover Types		2014 Vegetation/Land Cover Types	
Type	*Acres*	*Type*	*Acres*
Chaparral	281.26	Chaparral	273.05
Disturbed Chaparral	3.61	Disturbed Chaparral	3.61
Disturbed Mulefat Scrub	26.61	Disturbed Mulefat Scrub	25.74
Disturbed Riversidean Sage Scrub	279.98	Disturbed Riversidean Sage Scrub	277.85
Disturbed Southern Willow Scrub	11.62	Disturbed Southern Willow Scrub	10.74
Disturbed/Developed	670.35	Disturbed/Developed	600.40
Eucalyptus Woodland	44.83	Eucalyptus Woodland	30.18
Mulefat Scrub	N/A	Mulefat Scrub	5.02
Non-Native Grassland	37.66	Non-Native Grassland	126.06
Open Water	46.22	Open Water	39.30
Riversidean Sage Scrub	4.34	Riversidean Sage Scrub	7.70
Unvegetated Wash	14.00	Unvegetated Wash	14.00
Willow Riparian	N/A	Willow Riparian	6.83
Total	**1420.47**	**Total**	**1420.47**

Willow Riparian Forest

Willow riparian forest now comprises an area of approximately 6.83 acres which are associated with roughly five water quality/siltation basins occurring within the active mine footprint. Vegetation in these areas is comprised of various large willow trees (*Salix* sp.) that produce a nearly constant, stratified canopy along the perimeter of the basins. Understory species present in these areas consist primarily of mugwort (*Artemesia douglasiana*), and mulefat (*Baccharis salicifolia*). Tree species present include black willow (*Salix goodingii*), arroyo willow (*Salix lasiolepsis*), western cottonwood (*Populus fremontii*), and sandbar willow (*Salix exigua*).

Mulefat Scrub

Approximately 5.02 acres of mulefat scrub now occurs in two of the larger basins on site. Vegetation in these areas is comprised almost entirely of mulefat, growing at heights of approximately three to eight feet.

SPECIAL-STATUS ANIMALS

No new special-status animals were observed during updated general biological surveys, however, the likelihood of certain special-status species to occur on –site has changed since previous surveys were conducted in 2008. Primarily, newly established riparian habitat in several basins on-site has the ability to support the federally and state listed as endangered least Bell's vireo, yellow warbler, a CDFW species of special concern, and yellow-breasted chat, a CDFW species of special concern.

Table 2 provides a summary of all species considered during the updated surveys. Species were considered based on a number of factors, including: 1) species identified by the March 2014 CNDDB as occurring (either currently of historically) on or in the vicinity of the property, 2) MSHCP species survey areas for which the property occurs within, 3) planning area species designated by the MSHCP that are relevant to the property, and 4) any other special-status species that are known to occur within the vicinity of the property, or for which potentially suitable habitat occurs on site. Following the table, additional discussions are provided for any special-status animals that are now more likely to occur on-site as a result of significant changes in habitat since 2008. Discussions involving the remaining species with the potential to occur on-site can be found in the 2008 GLA constraints analysis report.

Table 2. Special-status wildlife considered during updated general biological surveys.

Species Name	**Status**	**Habitat Requirements**	**Potential for Occurrence**
Arroyo chub *Gila orcutti*	Federal: None State: None CDFW: SSC	Slow-moving or backwater sections of warm to cool streams with substrates of sand or mud.	Not expected to occur due to lack of suitable habitat
Arroyo toad *Bufo californicus*	Federal: FE State: None CDFW: None	Breeds, forages, and/or aestivates in aquatic habitats, riparian, coastal sage scrub, oak, and chaparral habitats. Breeding pools must be open and shallow with minimal current, and with a sand or pea gravel substrate overlain with sand or flocculent silt. Adjacent banks with sandy or gravely terraces and very little herbaceous cover for adult and juvenile foraging areas, within a moderate riparian canopy of cottonwood, willow, or oak.	Not expected to occur due to lack of suitable habitat

Species Name	**Status**	**Habitat Requirements**	**Potential for Occurrence**
Bald eagle *Haliaeetus leucocephalus*	Federal: FT State: SE CDFW: None	Primarily in or near seacoasts, rivers, swamps, and large lakes. Perching sites consist of large trees or snags with heavy limbs or broken tops.	Not expected to occur on site due to a lack of suitable habitat
Burrowing owl *Athene cunicularia*	Federal: FSC State: None CDFW: SSC	Shortgrass prairies, grasslands, lowland scrub, agricultural lands (particularly rangelands), coastal dunes, desert floors, and some artificial, open areas as a year-long resident. Occupies abandoned ground squirrel burrows as well as artificial structures such as culverts and underpasses.	Low to moderate potential for occurence
Coast range newt *Taricha torosa torosa*	Federal: None State: None CDFW: SSC	Frequents terrestrial habitats (grassland, woodland and forest) but breeds in ponds, reservoirs, and slow moving streams.	Low potential to occur on site due to marginal habitat
Coastal cactus wren *Campylorhynchus brunneicapillus couesi*	Federal: None State: None CDFW: SSC	Occurs almost exclusively in cactus (cholla and prickly pear) dominated coastal sage scrub.	Low potential to occur on site due to lack of suitable habitat
Coastal California gnatcatcher *Polioptila californica californica*	Federal: FT State: None CDFW: SSC	Low elevation coastal sage scrub and coastal bluff scrub.	Moderate to high potential to occur on site
Coast patch-nosed snake *Salvadora hexalepis virgultea*	Federal: None State: None CDFW: SSC	Occurs in coastal chaparral, desert scrub, washes, sandy flats, and rocky areas.	High potential to occur on site
Coast (San Diego) horned lizard *Phrynosoma coronatum blainvillei*	Federal: None State: None CDFW: SSC	Occurs in a variety of vegetation types including coastal sage scrub, chaparral, annual grassland, oak woodland, and riparian woodlands.	Observed on site
Cooper's hawk (nesting) *Accipiter cooperi*	Federal: None State: None CDFW: WL	Primarily occurs in riparian areas and oak woodlands, most commonly in montane canyons. Known to use urban areas, occupying trees among residential and commercial.	Moderate potential to occur on site

Species Name	**Status**	**Habitat Requirements**	**Potential for Occurrence**
Golden eagle *Aquila chrysaetos*	Federal: None State: None CDFW: FP/WL	In southern California, occupies grasslands, brushlands, deserts, oak savannas, open coniferous forests, and montane valleys. Nests on rock outcrops and ledges.	Moderate potential to forage on site
Least Bell's vireo *Vireo bellii pusillus*	Federal: FE State: SE CDFW: None	Dense riparian habitats with a stratified canopy, including southern willow scrub, mule fat scrub, and riparian forest.	Moderate potential to occur on site in areas of newly established riparian habitat
Loggerhead shrike *Lanius ludovicianus*	Federal: None State: None CDFW: SSC	Areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs.	Moderate potential to occur on site
Northern red-diamond Rattlesnake *Crotalus ruber ruber*	Federal: None State: None CDFW: SSC	Habitats with heavy brush and rock outcrops, including coastal sage scrub and chaparral.	High potential to occur on site
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	Federal: None State: None CDFW: SSC	Coastal sage scrub, sage scrub/grassland ecotones, and chaparral.	High potential to occur on site
Orange-throated whiptail *Aspidoscelis hyperythrus*	Federal: None State: None CDFW: SSC	Coastal sage scrub, chaparral, non-native grassland, oak woodland, and juniper woodland.	Observed on site
Quino checkerspot butterfly *Euphydryas editha quino*	Federal: FE State: None CDFW: None	Larval and adult phases each have distinct habitat requirements tied to host plant species and topography. Larval host plants include *Plantago erecta* and *Castilleja exserta*. Adults occur on sparsely vegetated rounded hilltops and ridgelines, and are known to disperse through disturbed habitats to reach suitable nectar plants.	Low to moderate potential to occur on site

Species Name	**Status**	**Habitat Requirements**	**Potential for Occurrence**
Pallid bat *Antrozous pallidus*	Federal: None State: None CDFW: SSC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting.	Low potential to occur on site
Pocketed free-tailed bat *Nyctinomops femorosaccus*	Federal: None State: None CDFW: SSC	Variety of arid areas in Southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, and desert riparian areas.	Not expected to occur on site due to a lack of suitable habitat
Riverside fairy shrimp *Streptocephalus woottoni*	Federal: FE State: None CDFW: None	Restricted to deep seasonal vernal pools, vernal pool-like ephemeral ponds, and stock ponds.	Low potential to occur on site
San Bernardino ringneck snake *Diadophis punctatus modestus*	Federal: None State: None CDFW: None Locally rare	Moist habitats including woodlands, forest, grasslands, chaparral, farms, and gardens.	Moderate potential to occur on site
San Diego black-tailed Jackrabbit *Lepus californicus bennettii*	Federal: None State: None CDFW: SSC	Occupies a variety of habitats, but is most common among shortgrass habitats. Also occurs in sage scrub, but needs open habitats.	Moderate to high potential to occur on site
San Diego desert woodrat *Neotoma lepida intermedia*	Federal: None State: None CDFW: SSC	Occurs in a variety of shrub and desert habitats, primarily associated with rock outcrops, boulders, cacti, or areas of dense undergrowth.	High potential to occur on site
San Diego fairy shrimp *Branchinecta sandiegonensis*	Federal: FE State: None CDFW: SSC	Seasonal vernal pools.	Low potential to occur on site
Santa Ana speckled dace *Rhinichthys osculus*	Federal: None State: None CDFW: SSC	Occurs in the headwaters of the Santa Ana and San Gabriel Rivers. May be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temperatures of 17-20 C. Usually inhabits shallow cobble and gravel riffles.	Not expected to occur on site due to a lack of suitable habitat

Species Name	**Status**	**Habitat Requirements**	**Potential for Occurrence**
Southwestern pond turtle *Actinemys marmorata pallida*	Federal: None State: None CDFW: SSC	Slow-moving permanent or intermittent streams, small ponds and lakes, reservoirs, abandoned gravel pits, permanent and ephemeral shallow wetlands, stock ponds, and treatment lagoons. Abundant basking sites and cover necessary, including logs, rocks, submerged vegetation, and undercut banks.	Low potential to occur on site
Southwestern willow flycatcher *Empidonax traillii extimus*	Federal: FE State: SE CDFW: None	Riparian woodlands along streams and rivers with mature dense thickets of trees and shrubs.	Low to moderate potential to occur on site
Stephens' kangaroo rat *Dipodomys stephensi*	Federal: FE State: ST CDFW: None	Open grasslands or sparse shrublands with less than 50% vegetation cover during the summer.	Moderate to high potential to occur on site
Tricolored blackbird *Agelaius tricolor*	Federal: None State: None CDFW: SSC	Breeding colonies require nearby water, a suitable nesting substrate, and open-range foraging habitat of natural grassland, woodland, or agricultural cropland.	Not expected occur on site
Two-striped garter snake *Thamnophis hammondii*	Federal: None State: None CDFW: SSC	Aquatic snake typically associated with wetland habitats such as streams, creeks, and pools.	Low potential to occur on site
Western mastiff bat *Eumops perotis californicus*	Federal: None State: None CDFW: SSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Moderate potential to occur on site
Western snowy plover *Charadrius alexandrinus nivosus*	Federal: FT State: None CDFW: SSC	Sandy or gravelly beaches along the coast, estuarine salt ponds, alkali lakes, and at the Salton Sea.	Not expected to occur on site
Western spadefoot *Spea hammondii*	Federal: None State: None CDFW: SSC	Seasonal pools in coastal sage scrub, chaparral, and grassland habitats.	Moderate potential to occur on site
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	Federal: None State: SE CDFW: None	Dense, wide riparian woodlands with well-developed understories.	Not expected to occur on site

Species Name	Status	Habitat Requirements	Potential for Occurrence
White-faced ibis (rookery site) *Plegadis chihi*	Federal: WL State: None CDFW: None	Winter foraging occurs in wet meadows, marshes, ponds, lakes, rivers, and agricultural fields. Requires extensive marshes for nesting.	Moderate potential to occur on site
White-tailed kite (nesting) *Elanus leucurus*	Federal: FSC State: None CDFW: CFP	Low elevation open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands. Dense canopies used for nesting and cover.	Moderate potential to nest on site, Moderate to high potential to forage on site
Yellow-breasted chat (nesting) *Icteria virens*	Federal: None State: None CDFW: SSC	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush with well-developed understories.	Moderate to high potential to occur on site in willow riparian habitat
Yellow warbler (nesting) *Dendroica petechia brewsteri*	Federal: None State: None CDFW: SSC	Lowland and foothill riparian woodlands dominated by cottonwoods, alders, or willows and other small trees and shrubs typical of low, open-canopy riparian woodland.	Moderate to high potential to occur on site
Yuma myotis *Myotis yumanensis*	Federal: None State: None CDFW: SSC	Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.	Low potential to occur on site

Federal
FE – Federally Endangered
FT – Federally Threatened
FPT – Federally Proposed Threatened
FSC – Federal Species of Concern

State
SE – State Endangered
ST – State Threatened

CDFW
SSC – California Species of Special Concern
CFP – California Fully-Protected Species

Least Bell's vireo

Least bell's vireo is a state and federally listed endangered migratory songbird that breeds in riparian habitats in southern California. This vireo nests and forages almost exclusively in multi-layered riparian woodland habitats. Least Bell's vireo winter in southern Baja California, Mexico, and typically migrates between mid-March and early April to Southern California and northwestern Baja California, where they remain until late September.

Historically, least Bell's vireo was abundant in riparian habitats throughout the central valley, coastal Southern California, and in scattered oases and canyons in California deserts. Populations have declined dramatically this century owing to widespread destruction and degradation of riparian habitats and brood-parasitism by the brown-headed cowbird *(Molothrus ater*). The USFWS listed the least Bell's vireo as an endangered species in 1986. The largest LBV populations in Southern California are currently located at the Prado Basin in Riverside County, and along the Tijuana River, the San Luis Rey River, the San Diego River, the Santa Margarita River and other drainages in Camp Pendelton, San Diego County. During the last decade, least Bell's vireo has begun to exhibit a substantial recovery due in large measure to management, including trapping to remove brown-headed cowbirds from areas occupied by the vireo. Habitat restoration has also provided additional habitat areas for this species, contributing to its recovery. Least Bell's vireo are known to feed primarily in the willow stands on bugs and insects such as beetles, bees, wasps, ants, snails, grasshoppers, moths, and butterflies.

During the updated biological surveys, no Least Bell's Vireo were observed or audibly detected, however, larger areas of suitable habitat now exist on site. Several basins that were previously void of vegetation during the 2008 surveys, have since exhibited vigorous riparian growth and support dense stands of willow riparian forest. As a result, the least Bell's vireo now has a moderate to high potential to occur within these basins.

Yellow-breasted chat

The yellow-breasted chat is designated as a CDFW California Species of Special Concern. This migratory songbird breeds in riparian habitats in Southern California and is also found in habitat similar to that required by the least Bell's vireo. This species summers throughout much of North America and winters from northern Mexico south to Panama. Suitable habitat typically consists of multi-layered riparian scrub or willow woodland corridors along flowing streams. The yellow-breasted chat feeds primarily on insects gleaned from foliage of shrubs and low trees. They are also known to eat berries and small fruit.

During updated biological surveys, no yellow-breasted chat were observed on or adjacent to the site, however, larger areas of suitable habitat now exist on site. Several basins that were previously void of vegetation during the 2008 surveys, have since exhibited vigorous riparian

growth and support dense stands of willow riparian forest. As a result, the yellow-breasted chat now has a moderate to high potential to occur within these basins.

Yellow Warbler

The yellow warbler is designated as a CDFG California Species of Special Concern. This species is known to breed throughout much of North America including northern Alaska, and winters from southern California, Arizona, and the gulf coast south to central South America. This species is a migratory songbird that breeds in riparian habitats in Southern California and exhibits habitat requirements similar to the yellow-breasted chat and least Bell's vireo. Suitable habitat typically consists of multi-layered riparian scrub or willow woodland corridors along flowing streams.

During the updated biological surveys, no yellow warblers were observed on or adjacent to the Project Site, however, larger areas of suitable habitat now exist on site. Several basins that were previously void of vegetation during the 2008 surveys, have since exhibited vigorous riparian growth and support dense stands of willow riparian forest. As a result, the yellow warbler now has a moderate to high potential to occur within these basins.

SPECIAL-STATUS PLANTS

No new special-status plants were observed during updated focused plant surveys, nor were any significant changes in habitat noted that would increase the likelihood of occurrence for any special-status plant species. Table 3 provides an updated summary of all plants considered during the updated focused plant surveys. Species were considered based on a number of factors, including: 1) species identified by the March 2014 CNDDB as occurring (either currently of historically) on or in the vicinity of the property, 2) MSHCP species survey areas for which the property occurs within, 3) planning area species designated by the MSHCP that are relevant to the property, and 4) any other special-status plants that are known to occur within the vicinity of the property, or for which potentially suitable habitat occurs on site. Being that no new special-status plant species were observed, or found to be more likely to occur on-site than during 2008, no new discussions are necessary. Discussions of species with the potential to occur on-site can be found in the 2008 GLA Constraints Analysis Report.

Table 3. Special-status plants considered during updated focused plant surveys.

Species	Status	Habitat	Occurrence On Site

Species	Status	Habitat	Occurrence On Site
Bottle liverwort *Sphaerocarpos drewei*	Federal: None State: None CNPS Rank: 1B.1	Chaparral and coastal scrub openings. Known to occur from 90 to 600 meters (300 to 2,000 feet) MSL. Active following rains.	Low to moderate potential to occur on site, not observed during focused surveys.
California Orcutt's grass *Orcuttia californica*	Federal: FE State: SE CNPS Rank: 1B.1	Vernal pools. Known to occur below 660 meters (2,200 feet) MSL. Identifiable April – July.	Low potential to occur on site, not observed during focused surveys.
California satintail *Imperata brevifolia*	Federal: None State: None CNPS Rank: 2.1	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), and riparian scrub (mesic). Flowers Sept. – May.	Low potential to occur on site, not observed during focused surveys.
California screw-moss *Tortula californica*	Federal: None State: None CNPS Rank: 1B.2	Sandy soils in chenopod scrub and valley and foothill grassland. Known to occur from 10 to 1,450 meters (30 to 4,800 feet) MSL. Active following rains.	Not expected to occur on site due to a lack of suitable habitat, not observed during focused surveys.
Campbell's liverwort *Geothallus tuberosus*	Federal: None State: None CNPS Rank: 1B.1	Coastal scrub (mesic) and vernal pools. Active following rains.	Low to moderate potential to occur on site, not observed during focused surveys.
Chaparral sand verbena *Abronia villosa* var. *aurita*	Federal: None State: None CNPS Rank: 1B.1	Sandy soils in Chaparral and coastal scrub. Active Jan – August.	Low potential to occur on site, not observed during focused surveys.
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	Federal: None State: None CNPS Rank: 1B.1	Marshes, playas, and vernal pools; usually alkaline soils. Blooms March – June.	Low potential to occur on site, not observed during focused surveys.
Davidson's saltscale *Atriplex serenana* var. *davidsonii*	Federal: None State: None CNPS Rank: 1B.2	Alkaline soils in coastal bluff scrub and coastal scrub. Known from 10 to 200 meters (30 to 700 feet) MSL. Active April – Oct.	Not expected to occur on site due to a lack of suitable habitat, not observed during focused surveys.
Hall's monardella *Monerdella macrantha* ssp. *hallii*	Federal: None State: None CNPS Rank: 1B.3	Openings of Broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest. Usually on dry slopes and ridges. Active June – August	Low potential to occur on site, not observed during focused surveys.
Hammitt's clay-cress *Sibaropsis hammittii*	Federal: None State: None CNPS Rank: 1B.2	Chaparral and valley and foothill grassland. Associated with clay soils. Known from 700 to 1,065 meters (2,300 to 3,500) MSL. Active March – April.	Low potential to occur on site, not observed during focused surveys.

Species	Status	Habitat	Occurrence On Site
Heart-leaved pitcher sage *Lepechinia cardiophylla*	Federal: None State: None CNPS Rank: 1B.2	Closed-cone coniferous forest, chaparral, and cismontane woodland. Known from 550 to 1,370 meters (1,800 to 4,500 feet) MSL. Active April – July.	Low potential to occur on site in areas of undisturbed chaparral, not observed during focused surveys.
Intermediate mariposa lily *Calochortus weedii* var. *intermedius*	Federal: None State: None CNPS Rank: 1B.2	Chaparral, coastal scrub, and valley and foothill grassland. Known from 180 to 850 meters (600 to 2,800 feet). Active June – July.	Low potential to occur on site, not observed during focused surveys.
Intermediate monardella *Monardella hypoleuca* ssp. *intermedia*	Federal: None State: None CNPS Rank: 1B.3	Openings in chaparral and lower montane coniferous forest. Active June – August	Low potential to occur on site, not observed during focused surveys.
Lemon lily *Lilium parryi*	Federal: None State: None CNPS Rank: 1B.2	Lower montane coniferous forest, meadows and seeps, riparian forest, and upper montane coniferous forest. Known from 1,300 to 2,800 meters (4,300 to 9,200 feet) MSL. Active July – August.	Low potential to occur on site, not observed during focused surveys.
Little mousetail *Myosurus minimus* ssp. *apus*	Federal: None State: None CNPS Rank: 3.1	Valley and foothill grassland and vernal pools with alkaline soils. Known from 20 to 640 meters (70 to 2,100 feet) MSL. Active March – June.	Not expected to occur on site due to a lack of suitable habitat.
Long-spined spineflower *Chorizanthe polygonoides* var. *longispina*	Federal: None State: None CNPS Rank: 1B.2	Chaparral, coastal scrub, meadows, seeps, and valley and foothill grassland. Known from 30 to 1,450 meters (100 to 4,800 feet) MSL. Active April – July.	Low to moderate potential to occur on site, not observed during focused surveys.
Many-stemmed dudleya *Dudleya multicaulus*	Federal: None State: None CNPS Rank: 1B.2	Chaparral, coastal scrub, and valley and foothill grassland. Often on clay soils or granitic outcrops. Known from below 800 meters (2,600 feet). Active May – July.	Low to moderate potential to occur on site, not observed during focused surveys.
Mesa horkelia *Horkelia cuneata* ssp. *puberula*	Federal: None State: None CNPS Rank: 1B.1	Sandy or gravelly soils in chaparral and coastal scrub. Known from 70 to 825 meters (200 to 2,700 feet) MSL. Active Feb. – Sept.	Not expected to occur on site. Known from few locations in Riverside County, not observed during focused surveys.

Species	Status	Habitat	Occurrence On Site
Munz's onion *Allium munzii*	Federal: FE State: ST CNPS Rank: 1B.1	Clay soils supporting chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland. Known from 300 to 1,070 meters (1,000 to 3,500 feet) MSL. Active March – May.	Low to moderate potential to occur on site, not observed during focused surveys.
Orcutt's brodiaea *Brodiaea orcuttii*	Federal: None State: None CNPS Rank: 1B.1	Clay and serpentine soils supporting grasslands or vernal pools, meadows, seeps, closed-cone coniferous forest. Known from 0 to 1,600 meters (0 5,300 feet) MSL. Active May – July.	Low potential to occur on site, not observed during focused surveys.
Parish's meadowfoam *Limnanthes gracilis* ssp. *parishii*	Federal: None State: SE CNPS Rank: 1B.2	Lower montane coniferous forest, meadows and seeps, and vernal pools. Known from 550 to 2,000 meters (1,800 to 6,600 feet) MSL. Active April – June.	Low potential to occur on site, not observed during focused surveys.
Parry's spineflower *Chorizanthe parryi* var. *parryi*	Federal: None State: None CNPS Rank: 1B.1	Dry sometimes sandy soils in chaparral and coastal scrub. Known from 40 to 1,750 meters (100 to 5,700 feet) MSL. Active April – June.	Observed on site during 2008 surveys. No new occurrences observed during 2014 surveys.
Parry's tetracoccus *Tetracoccus dioicus*	Federal: None State: None CNPS Rank: 1B.2	Dry rocky slopes in chaparral and coastal scrub. Known from 160 to 1,000 meters (500 to 3,300 feet) MSL. Active year-round.	Low potential to occur on site, not observed during focused surveys.
Prostrate navarretia *Navarretia prostrata*	Federal: None State: None CNPS Rank: 1B.1	Vernal pools in coastal scrub and alkaline valley and foothill grassland. Known from 15 to 700 meters (50 to 2,300 feet) MSL. Blooms May – July.	Low potential to occur on site, not observed during focused surveys.
Rainbow manzanita *Arctostaphylos rainbowensis*	Federal: None State: None CNPS Rank: 1B.1	Gabbro Chaparral. Known from 210 to 800 meters (700 to 2,600 feet) MSL. Active year-round.	Not expected to occur on site, out of known range of species.
Rayless ragwort *Senecio aphanactis*	Federal: None State: None CNPS Rank: 2.2	Drying alkaline flats in chaparral, cismontane woodland, and coastal scrub. Known from 15 to 575 meters (50 to 1,900 feet) MSL. Active Jan. – April.	Not expected to occur due to a lack of suitable habitat.
Round-leaved filaree *Erodium macrophylla*	Federal: None State: None CNPS Rank: 1B.1	Clay soils supporting cismontane woodland and valley and foothill grassland. Known from 15 to 1,200 meters (50 to 3,900 feet) MSL. Active March – May.	Low potential to occur on site, not observed during focused surveys

Species	Status	Habitat	Occurrence On Site
Salt spring checkerbloom *Sidalcea neomexicana*	Federal: None State: None CNPS Rank: 2.2	Alkaline seeps, springs, and marshes. Known from below 1,500 meters (5,000 feet) MSL. Blooms March – June.	Not expected to occur due to a lack of suitable habitat.
San Bernardino aster *Symphyotrichum defoliatum*	Federal: None State: None CNPS Rank: 1B.2	Vernally moist sites; ie ditches, seeps, streams, in a variety of plant communities. Known from below 2050 meters (6,700 feet) MSL. Blooms July – November.	Low to moderate potential to occur on site, not observed during focused surveys.
San Diego ambrosia *Ambrosia pumila*	Federal: FE State: None CNPS Rank: 1B.1	Open areas with coarse substrates near drainages or upland clay slopes, or the dry margins of vernal pools. Known from 20 to 420 meters (70 1,400 feet) MSL.	Low potential to occur, not observed during focused surveys.
San Diego button-celery *Erngium aristulatum* var. *parishii*	Federal: FE State: SE CNPS Rank: 1B.1	Vernal pools in coastal scrub, valley and foothill grassland. Known from 15 to 620 meters (50 to 2,000 feet) MSL. Blooms April – June.	Low potential to occur, not observed during focused surveys.
San Jacinto valley crownscale *Atriplex coronata* var. *notatior*	Federal: FE State: None CNPS Rank: 1B.1	Playas, chenopod scrub, valley and foothill grassland (mesic), and vernal pools in the San Jacinto River Valley. Known from 370 to 520 meters (1,200 to 1,700 feet) MSL. Active April – August.	Not expected to occur on site due to a lack of suitable habitat. Out of known range of species.
San Miguel savory *Satureja chandleri*	Federal: None State: None CNPS Rank: 1B.2	Rocky areas in chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. Known from 110 to 1,210 meters (400 to 4, 000 feet) MSL. Active March – July.	Low potential to occur on site in areas of chaparral, not observed during focused plant surveys.
Santa Monica Mountains dudleya *Dudleya cymosa* ssp. *ovatifolia*	Federal: FT State: None CNPS Rank: 1B.2	Cracks and crevices of north facing rock outcrops and cliff faces in canyons, associated with chaparral and coastal scrub. Known from 150 to 1,700 meters (500 to 5,500 feet) MSL. Blooms March – June.	Not expected to occur on site, out of known range of species, not observed during focused surveys.
Santiago Peak phacelia *Phacelia suaveolens* ssp. *keckii*	Federal: None State: None CNPS Rank: 1B.3	Closed cone coniferous forest and chaparral. Known from 550 to 1,600 meters (1,800 to 5,200 feet) MSL. Blooms May – June.	Not expected to occur on site, Known from high elevations in the Santa Ana Mountians in Riverside Co., not observed during focused surveys.

Species	Status	Habitat	Occurrence On Site
Slender-horned spineflower *Dodecahema leptoceras*	Federal: FE State: SE CNPS Rank: 1B.1	Mature undisturbed floodplain terraces and benches with overbank deposits every 50 to 100 years from large washes and rivers. Known from 200 to 770 meters (600 to 2,500 feet) MSL. Blooms April – June.	Low potential to occur on site, not observed during focused surveys.
Smooth tarplant *Centromadia pungens* ssp. *laevis*	Federal: None State: None CNPS Rank: 1B.1	Alkaline areas in chenopod scrub, meadows and seeps, ditches, playas, riparian woodland, and valley and foothill grassland. Known from below 480 meters (1,600 feet) MSL. Active April – Sept.	Not expected to occur on site due to a lack of suitable habitat.
Southern skullcap *Scutellaria bolanderi* ssp. *austromontana*	Federal: None State: None CNPS Rank: 1B.2	Streambanks, or mesic areas in chaparral, and oak or pine woodland. Known from 435 to 2,000 meters (1,400 to 6,600 feet) MSL. Blooms June – August.	Not expected to occur on site due to a lack of suitable habitat.
Southern tarplant *Centromadia parryi* ssp. *australis*	Federal: None State: None CNPS Rank: 1B.1	Margins of marshes, swamps, and vernal pools, or disturbed sites near the coast. Known from below 500 meters (1,500 feet) MSL. Active May – November	Not expected to occur on site, out of known range of species, not observed during focused surveys.
Sticky dudleya *Dudleya viscida*	Federal: None State: None CNPS Rank: 1B.2	Rocky areas in coastal bluff scrub, chaparral, and coastal scrub. Known from below 550 meters (1,800 feet) MSL. Blooms May – June.	Not expected to occur on site, out of known range of species, not observed during focused surveys.
Summer holly *Comarostaphylis diversifolia* ssp. *diversifolia*	Federal: None State: None CNPS Rank: 1B.2	Chaparral. Known from 30 to 550 meters (100 to 1,800 feet) MSL. Active year-round.	Not expected to occur on site, out of known range of species, not observed during focused surveys.
Tecate cypress *Cupressus forbesii*	Federal: None State: None CNPS Rank: 1B.1	Closed-cone coniferous forest and chaparral. Known from 250 to 1,500 meters (800 to 4,900 feet) MSL. Active year-round.	Not expected to occur on site, out of known range of species.
Thread-leaved brodiaea *Brodiaea filifolia*	Federal: FT State: SE CNPS Rank: 1B.1	Clay, loamy sand or alkaline soils in grasslands at edges of vernal pools or floodplains. Known from below 1,220 meters (4,000 feet) MSL. Blooms April – June.	Low potential to occur on site, not observed during focused surveys.

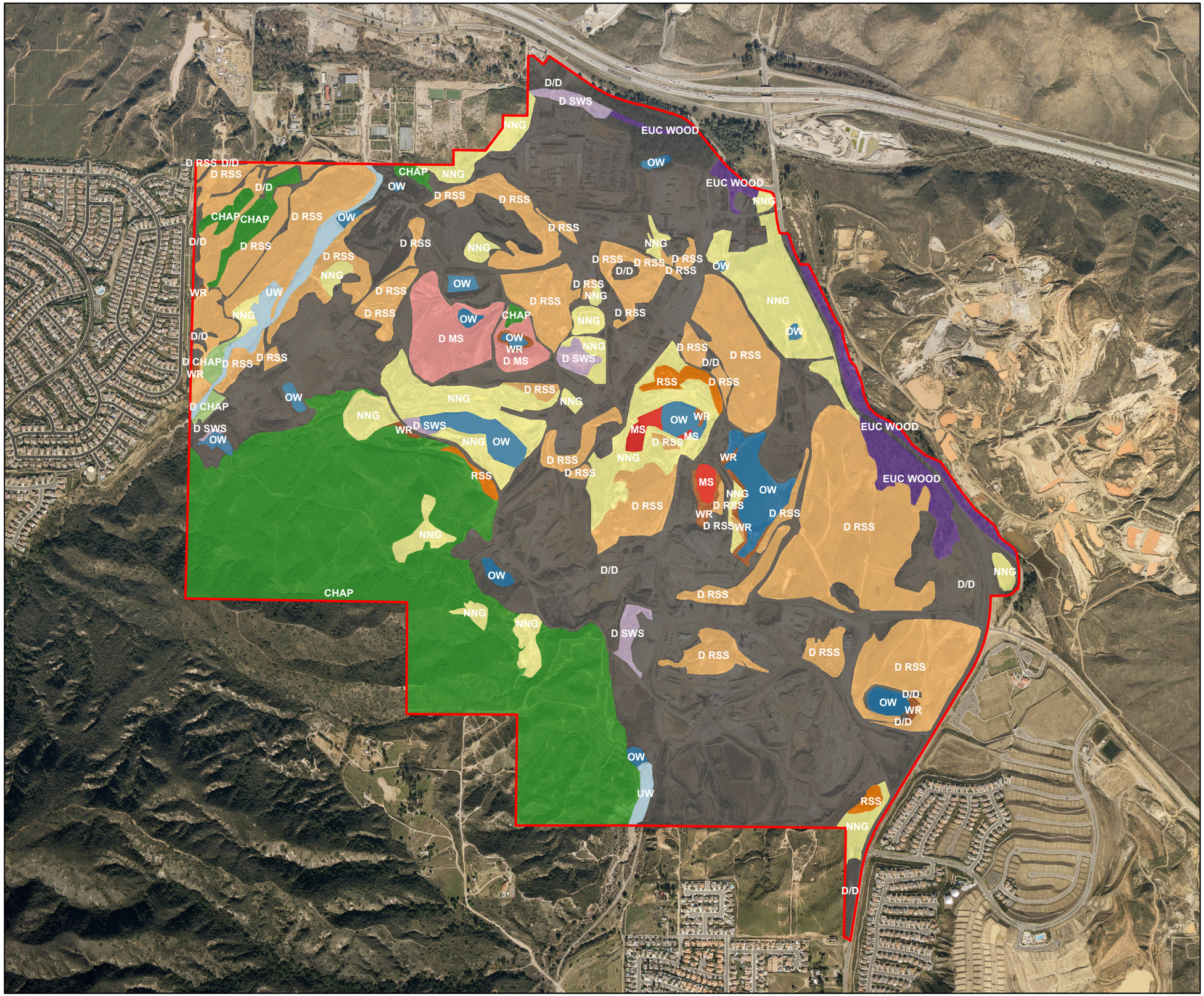
Species	Status	Habitat	Occurrence On Site
Vernal barley *Hordeum intercedens*	Federal: None State: None CNPS Rank: 3.2	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), and vernal pools. Known from 5 to 1,000 meters (20 to 3,300 feet) MSL. Active March – June.	Low potential to occur on site, not observed during focused surveys.
White-bracted spineflower *Chorizanthe xantii* var. *leucotheca*	Federal: None State: None CNPS Rank: 1B.2	Mojavean desert scrub and pinyon and juniper woodland. Known from 300 to 1,200 meters (900 to 4,000 feet) MSL. Blooms April – June.	Not expected to occur on site due to a lack of suitable habitat.
White-rabbit tobacco *Psuedognaphalium leucocephalum*	Federal: None State: None CNPS Rank: 2.2	Sandy margins of washes or in debris cones below steep canyons.	Low potential to occur on site, not observed during focused surveys.

Federal
FE - Federally Endangered
FT - Federally Threatened

State
SE - State Endangered
ST – State Threatened

CNPS Rank
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 more information is needed.

Threat Code extension
.1 – Seriously endangered in California (over 80% occurrences threatened)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)



Legend

- Unvegetated Wash
- Open Water
- Disturbed Chaparral
- Chaparral
- Disturbed Mulefat Scrub
- Mulefat Scrub
- Disturbed Riversidean Sage Scrub
- Riversidean Sage Scrub
- Disturbed Southern Willow Scrub
- Eucalyptus Woodland
- Non-Native Grassland
- Willow Riparian
- Disturbed/Developed

N

0 550 1,100 2,200

Feet

PACIFIC CLAY MINE

Vegetation Map

GLENN LUKOS ASSOCIATES

Exhibit #1

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