

## **APPENDIX D**

### **RARE PLANT SURVEY LETTER REPORT**

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June 18, 2013  
Project no. 1202-0792

Ms. Joddi Leipner  
Santa Barbara County Public Works  
Resource Recovery & Waste Management  
130 East Victoria Street, Suite 100  
Santa Barbara, California 93101

## **Tajiguas Landfill Resource Recovery Project Results of Rare Plant Surveys**

### **Introduction**

Rare plant surveys were conducted to supplement the draft Biological Technical Report prepared for the project by AECOM dated March 2013. The Biological Technical Report was based on a general biological survey conducted on February 15, 2013, and did not determine the presence of rare plant species within the construction footprint of the subject project.

### **Results**

**Methodology.** Matt Ingamells conducted both botanical surveys. He has over 23 years of professional experience as a biologist, and is very familiar with the flora of Santa Barbara County. The botanical surveys were conducted consistent with methodology developed by the California Native Plant Society and California Department of Fish & Wildlife. The area surveyed included all construction disturbance and staging areas as shown on Figure 3.15 (attached) prepared by John Kular Consulting, dated March 28, 2013. Botanical surveys were conducted on May 2 and June 17, 2013. The surveys were scheduled to encompass the flowering period of special-status plant species reported from the region, including:

- Blochman's dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*);
- Saint's daisy (*Erigeron sanctarum*);
- Lompoc yerba santa (*Eriodictyon capitatum*);
- Suffructescent wallflower (*Erysimum insulare* ssp. *suffrutescens*);
- Santa Barbara bedstraw (*Galium cliftonsmithii*);
- Mesa horkelia (*Horkelia cuneata* ssp. *puberula*);
- Southern California black walnut (*Juglans californica* var. *californica*);
- Contra Costa goldfields (*Lasthenia conjugens*);
- Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*);
- Ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*);

- Santa Barbara honeysuckle (*Lonicera subspicata subspicata*);
- Cliff aster (*Malacothrix saxatilis* var. *saxatilis*);
- Lompoc monkeyflower (*Mimulus aurantiacus* var. *lompocense*);
- Fish's milkwort (*Polygala cornuta* var. *fishiae*);
- Nuttall's scrub oak (*Quercus dumosa*);
- Nuttall's snapdragon (*Antirrhinum nuttallianum*);
- Aphanisma (*Aphanisma blitoides*);
- Refugio manzanita (*Arctostaphylos refugioensis*);
- Triple-awned grass (*Aristida adscensionis*);
- Coulter's saltbush (*Atriplex coulteri*);
- Davidson's saltscale (*Atriplex serenana* var. *davidsonii*);
- Plummer's baccharis (*Baccharis plummerae* ssp. *plummerae*);
- Brewer's calandrinia (*Calandrinia breweri*);
- Catalina mariposa lily (*Calochortus catalinae*);
- Late-flowered mariposa lily (*Calochortus fimbriatus*);
- Cooper's lip fern (*Cheilanthes cooperae*);
- Creek dogwood (*Cornus sericea* ssp. *occidentalis*);
- Gaviota tarplant (*Deinandra increscens* ssp. *villosa*);
- Western dichondra (*Dichondra occidentalis*);
- Bitter gooseberry (*Ribes amarum* ssp. *hoffmannii*);
- Hoffmann's sanicle (*Sanicula hoffmannii*);
- Rayless ragwort (*Senecio aphanactis*);
- Hoffmann's nightshade (*Solanum xanti* var. *hoffmannii*);
- Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*);
- Santa Ynez false-lupine (*Thermopsis macrophylla* var. *angina*); and
- Camas lily (*Zygadenus fremontii* var. *inezianus*).

**Species Summary.** A plant species list was developed (see Attachment A) based on the results of the two botanical surveys, and includes 116 vascular plant species, of which 73 are native to the region. Thirty-one of the species detected are listed in the California Invasive Plant Inventory, including three species considered highly invasive (red brome, veldt grass, sweet fennel), 17 species considered moderately invasive and 11 species considered limited (minor ecological impacts).

**Special-Status Plant Species.** Two special-status species were found within construction disturbance and staging areas; Plummer's baccharis and Santa Barbara honeysuckle. Plummer's baccharis occurs at the water tank site just north of the former West Borrow Area, and along the power line and pipeline corridor to the proposed well 6 site. Santa Barbara honeysuckle occurs along the power line and pipeline corridor to the proposed well 6 site (see Attachment B).

### **Potential Impacts**

Based on a grading plan (Exhibit W-3) for the well water and recycled water tanks prepared by John Kular Consulting dated January 25, 2013, Plummer's baccharis is located outside the limits of proposed earthwork and would not be impacted. Based on a utilities plan (Figure 3.5, attached) prepared by John Kular Consulting dated March 28, 2013, power line poles would be located along the base of the slope to connect proposed well 6 to the Resource Recovery Project site. As shown on the utilities plan, Plummer's baccharis would be impacted by one of the power poles, and Santa Barbara honeysuckle would be impacted by another. However, it appears the power line could be re-located to the toe of the slope and avoid loss of native vegetation and these special-status species.

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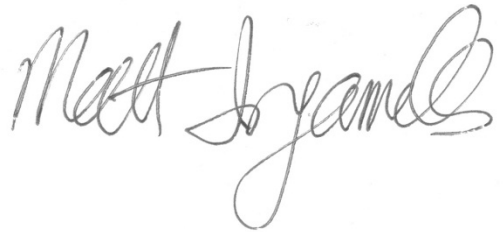
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Should you have any questions regarding this Botanical Survey Report or any other environmental concern regarding the project, please contact me at 805/644-2220 extension 13 at your earliest convenience.

Sincerely,

**Padre Associates, Inc.**

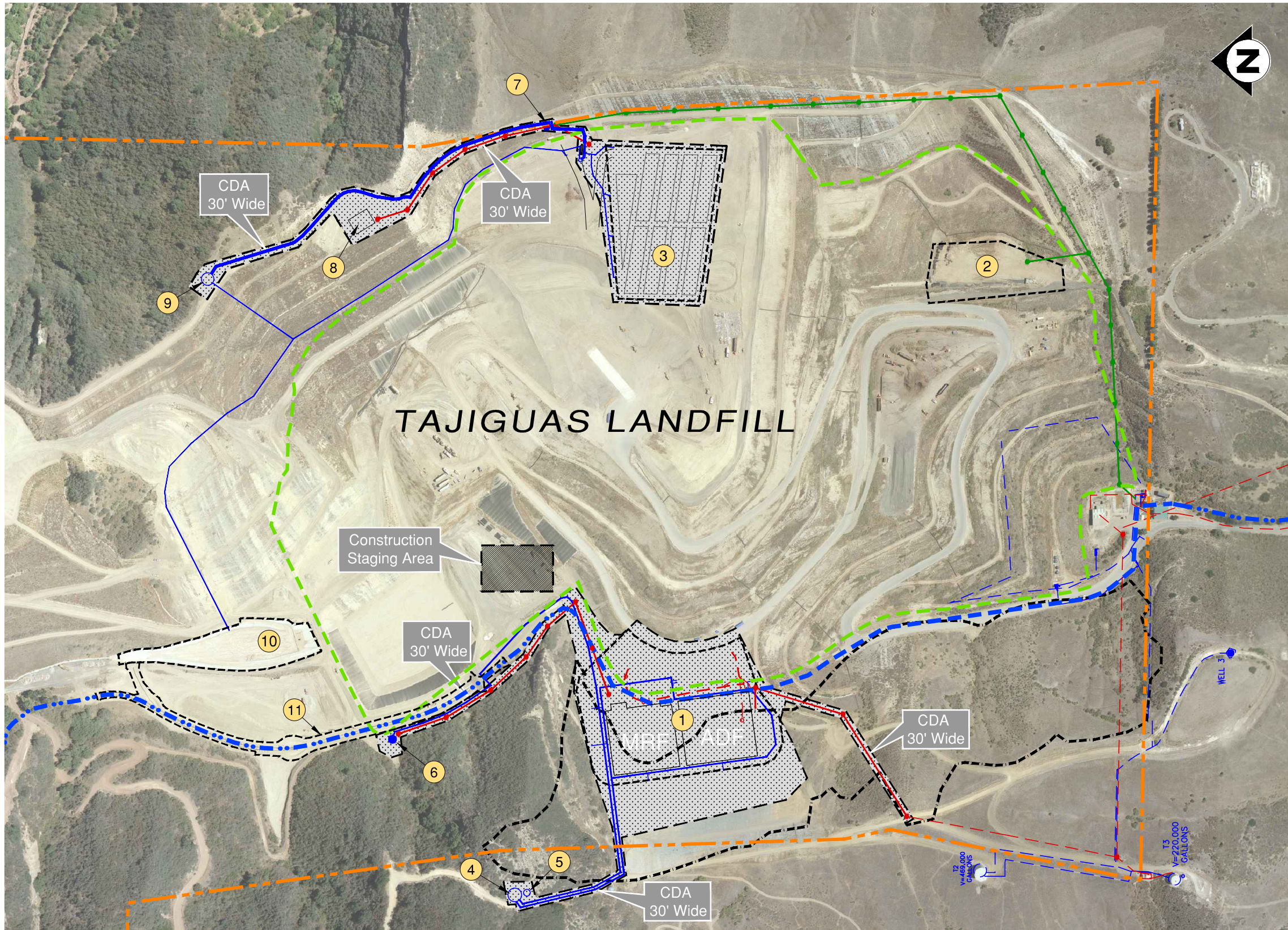
A handwritten signature in black ink that reads "Matt Ingamells". The signature is written in a cursive, flowing style.

Matt Ingamells  
Senior Biologist

Attachments: Construction Disturbance and Staging Areas map  
Vascular Plant Species list  
Special-Status Plant Species Map  
Utilities plan



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**Keynotes**

- ① Proposed Resource Recovery Project
- ② Temporary Landfill Operations and Maintenance Facilities during project construction
- ③ Proposed Composting Area
- ④ Proposed Water Tank - 220,000 gallons
- ⑤ Proposed Recycled Water Tank A - 70,000 gallons
- ⑥ Proposed Well 6 (Approx. Location)
- ⑦ Existing Well 5
- ⑧ Proposed Mechanics Building
- ⑨ Proposed Recycled Water Tank - 300,000 gallons
- ⑩ Existing Sediment Pond
- ⑪ Existing Concrete Drainage Channel

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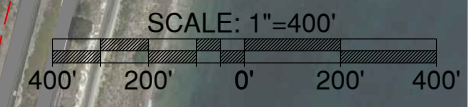
**Legend**

- |                      |  |                                     |
|----------------------|--|-------------------------------------|
| Landfill Boundary    | Permitted Waste Disposal Area              | Limit of Permitted West Borrow Area |
| Existing Water Lines | Existing Power Lines                       | Pila Creek                          |
| Proposed Water Lines | Proposed Power Lines                       | Pila Creek (Underground)            |
|                      | Proposed Power Lines [not part of the RRP] | Construction Disturbance Area (CDA) |

Tajiguas Landfill Resource Recovery Project

**Figure 3.15**

**Construction Disturbance and Staging Areas**









## Attachment A

### Vascular Plant Flora Observed within the Tajiguas Landfill Resource Recovery Project Study Area Santa Barbara County, California

Scientific Name	Common Name	Habit	Family	Invasiveness Rating
<i>Acmispon americanus</i> var. <i>americanus</i>	Spanish clover	AH	Fabaceae	
<i>Acmispon glaber</i>	Deer-weed	S	Fabaceae	
<i>Acmispon maritimus</i>	Lotus	AH	Fabaceae	
<i>Adenostoma fasciculatum</i>	Chamise	S	Rosaceae	
<i>Amaranthus albus</i> *	Tumble weed	AH	Amaranthaceae	
<i>Anagallis arvensis</i> *	Scarlet pimpernel	AH	Primulaceae	
<i>Anthemis cotula</i> *	Mayweed	AH	Asteraceae	
<i>Artemisia californica</i>	California sagebrush	S	Asteraceae	
<i>Atriplex semibaccata</i> *	Australian saltbush	PH	Chenopodiaceae	Moderate
<i>Avena barbata</i> *	Slender wild oat	AG	Poaceae	Moderate
<i>Avena fatua</i> *	Wild oat	AG	Poaceae	Moderate
<i>Baccharis pilularis</i>	Coyote brush	S	Asteraceae	
<i>Baccharis plummerae</i> ssp. <i>plummerae</i>	Plummer's baccharis	S	Asteraceae	
<i>Brassica nigra</i> *	Black mustard	AH	Brassicaceae	Moderate
<i>Brickellia californica</i>	California brickell-bush	S	Asteraceae	
<i>Bromus diandrus</i> *	Ripgut brome	AG	Poaceae	Moderate
<i>Bromus hordeaceus</i> *	Soft chess	AG	Poaceae	Limited
<i>Bromus madritensis</i> ssp. <i>rubens</i> *	Red brome	AG	Poaceae	High
<i>Calystegia macrostegia</i> ssp. <i>cyclostegia</i>	Morning-glory	PV	Convolvulaceae	
<i>Camissonia campestris</i>	Sun cup	AH	Onagraceae	
<i>Carduus pycnocephalus</i> *	Italian thistle	BH	Asteraceae	Moderate
<i>Ceanothus megacarpus</i> var. <i>megacarpus</i>	Bigpod ceanothus	S	Rhamnaceae	
<i>Ceanothus spinosus</i>	Greenbark ceanothus	S	Rhamnaceae	
<i>Centaurea melitensis</i> *	Tocalote	AH	Asteraceae	Moderate
<i>Cercocarpus betuloides</i>	Birch-leaf mountain mahogany	S	Rosaceae	
<i>Chenopodium californicum</i>	California goose-foo!	PH	Chenopodiaceae	
<i>Chenopodium berlandieri</i>	Pit-seed goosefoo!	AH	Chenopodiaceae	
<i>Conium maculata</i> *	Poison hemlock	AH	Apiaceae	Moderate
<i>Conyza canadensis</i>	Horseweed	AH	Asteraceae	
<i>Cynodon dactylon</i> *	Bermuda grass	PG	Poaceae	Moderate
<i>Datura wrightii</i>	Jimson weed	AH	Solanaceae	
<i>Delphinium cardinale</i>	Scarlet larkspur	PH	Ranunculaceae	
<i>Dryopteris arguta</i>	Wood fern	PF	Dryopteridaceae	
<i>Dudleya lanceolata</i>	Lance-leaf dudleya	PH	Crassulaceae	
<i>Ehrharta calcina</i> *	Veldt grass	PG	Poaceae	High
<i>Epilobium canum</i> ssp. <i>canum</i>	California fuschia	S	Onagraceae	
<i>Emmenanthe penduliflora</i>	Whispering bells	AH	Boraginaceae	
<i>Encelia californica</i>	California bush sunflower	S	Asteraceae	
<i>Eriogonum elongatum</i>	Long-stem buckwheat	PH	Polygonaceae	
<i>Eriogonum fasciculatum</i>	California buckwheat	S	Polygonaceae	
<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	Golden yarrow	PH	Asteraceae	
<i>Erodium botrys</i> *	Stork-bill	AH	Geraniaceae	
<i>Erodium cicutarium</i> *	Redstem filaree	AH	Geraniaceae	Limited
<i>Eschscholzia californica</i>	California poppy	PH	Papaveraceae	
<i>Eucrypta chrysanthemifolia</i>	Eucrypta	AH	Hydrophyllaceae	
<i>Festuca microstachys</i>	Annual fescue	AG	Poaceae	
<i>Festuca myuros</i> *	Rat-tail fescue	AG	Poaceae	Moderate
<i>Foeniculum vulgare</i> *	Sweet fennel	PH	Apiaceae	High
<i>Frangula californica</i>	California coffee-berry	S	Rhamnaceae	
<i>Galium angustifolium</i>	Bedstraw	S	Rubiaceae	
<i>Galium aparine</i>	Goose grass	AH	Rubiaceae	
<i>Galium californicum</i>	California bedstraw	PH	Rubiaceae	
<i>Pseudognaphalium californicum</i>	Green everlasting	A/BH	Asteraceae	
<i>Pseudognaphalium canescens</i>	White everlasting	BH	Asteraceae	
<i>Hazardia squarrosa</i>	Golden-bush	S	Asteraceae	
<i>Hedypnois cretica</i> *	Hedypnois	AH	Asteraceae	
<i>Helminthotheca echioides</i> *	Bristly ox-tongue	AH	Asteraceae	Limited
<i>Heterotheca grandiflora</i>	Telegraph weed	AH	Asteraceae	
<i>Hirschfeldia incana</i> *	Summer mustard	BH	Brassicaceae	Moderate
<i>Hordeum murinum</i> ssp. <i>leporinum</i> *	Hare barley	AG	Poaceae	Moderate
<i>Lactuca serriola</i> *	Prickly wild lettuce	AH	Asteraceae	
<i>Lasthenia californica</i>	Gold-fields	AH	Asteraceae	
<i>Leptodactylon californicum</i>	Prickly phlox	S	Polemoniaceae	
<i>Lessingia filaginifolia</i> var. <i>filaginifolia</i>	Lessingia	PH	Asteraceae	
<i>Leymus condensatus</i>	Giant wild rye	PG	Poaceae	
<i>Lolium multiflorum</i> *	Italian rye-grass	AG	Poaceae	Moderate
<i>Lonicera subspicata</i> var. <i>subspicata</i>	Santa Barbara honeysuckle	S	Caprifoliaceae	
<i>Lupinus succulentus</i>	Succulent lupine	AH	Fabaceae	

## Attachment A

### Vascular Plant Flora Observed within the Tajiguas Landfill Resource Recovery Project Study Area Santa Barbara County, California

Scientific Name	Common Name	Habit	Family	Invasiveness Rating
<i>Malacothrix saxatilis</i> var. <i>saxatilis</i>	Cliff aster	PH	Asteraceae	
<i>Malosma laurina</i>	Laurel sumac	S	Anacardiaceae	
<i>Malva nicaeensis</i> *	Bull mallow	AH	Malvaceae	
<i>Marah macrocarpus</i> var. <i>macrocarpus</i>	Large-fruited man-root	PV	Cucurbitaceae	
<i>Marrubium vulgare</i> *	Horehound	PH	Lamiaceae	Limited
<i>Medicago polymorpha</i> *	Bur clover	AH	Fabaceae	Limited
<i>Melica imperfecta</i>	Melic grass	PG	Poaceae	
<i>Melilotus alba</i> *	White sweet-clover	AH	Fabaceae	
<i>Melilotus indica</i> *	Sour clover	AH	Fabaceae	
<i>Mimulus aurantiacus</i>	Bush monkeyflower	S	Scrophulariaceae	
<i>Nicotiana glauca</i> *	Tree tobacco	S	Solanaceae	Moderate
<i>Pennisetum setaceum</i> *	Fountain grass	PG	Poaceae	Moderate
<i>Phacelia ramossissima</i>	Branching phacelia	PH	Boraginaceae	
<i>Phalaris aquatica</i> *	Harding grass	PG	Poaceae	Moderate
<i>Polygonum aviculare</i> ssp. <i>depressum</i> *	Knot weed	AH	Polygonaceae	
<i>Persicaria lapathifolia</i>	Willow weed	AH	Polygonaceae	
<i>Polypodium californicum</i>	California polypody	PF	Polypodiaceae	
<i>Polypogon monspeliensis</i> *	Rabbits-foot grass	AG	Poaceae	Limited
<i>Prunus ilicifolia</i> ssp. <i>ilicifolia</i>	Holly-leaved cherry	S	Rosaceae	
<i>Pseudognaphalium luteoalbum</i> *	Weedy cudweed	AH	Asteraceae	
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast live oak	T	Fagaceae	
<i>Rafinesquia californica</i>	California chicory	AH	Asteraceae	
<i>Rhamnus crocea</i>	Spiny redberry	S	Rhamnaceae	
<i>Rhus ovata</i>	Sugar bush	S	Anacardiaceae	
<i>Ribes malvaceum</i>	Chaparral currant	S	Grossulariaceae	
<i>Ricinus communis</i> *	Castor bean	S	Euphorbiaceae	Limited
<i>Salsola tragus</i> *	Russian thistle	AH	Chenopodiaceae	Limited
<i>Salvia apiana</i>	White sage	S	Lamiaceae	
<i>Salvia mellifera</i>	Black sage	S	Lamiaceae	
<i>Salvia spathacea</i>	Hummingbird sage	PH	Lamiaceae	
<i>Sambucus nigra</i> ssp. <i>caerulea</i>	Blue elderberry	S	Adoxaceae	
<i>Sanicula crassicaulis</i>	Sanicle	BH	Apiaceae	
<i>Schismus arabicus</i> *	Mediterranean grass	AG	Poaceae	Limited
<i>Scrophularia californica</i>	California figwort	PH	Scrophulariaceae	
<i>Silene lacinata</i> ssp. <i>laciniata</i>	Mexican pink	PH	Caryophyllaceae	
<i>Silybum marianum</i> *	Milk thistle	AH	Asteraceae	Limited
<i>Solanum douglasii</i>	White nightshade	S	Solanaceae	
<i>Sonchus oleraceus</i> *	Common sow thistle	AH	Asteraceae	
<i>Stachys bullata</i>	Hedge nettle	PH	Lamiaceae	
<i>Stipa coronata</i>	Crested needlegrass	PG	Poaceae	
<i>Stipa lepida</i>	Foothill needlegrass	PG	Poaceae	
<i>Stipa miliacea</i> *	Smilo grass	PG	Poaceae	Limited
<i>Symphoricarpos mollis</i>	Snowberry	S	Caprifoliaceae	
<i>Trifolium hirtum</i> *	Rose clover	AH	Fabaceae	Moderate
<i>Verbena lasiostachys</i>	Verbena	PH	Verbenaceae	
<i>Vicia sativa</i> ssp. <i>nigra</i> *	Common vetch	AV	Fabaceae	
<i>Xanthium strumarium</i>	Cockle-bur	AH	Asteraceae	
<i>Hesperoyucca whipplei</i>	Our Lord's candle	S	Agavaceae	

Notes: Scientific nomenclature follows the Jepson Manual (Baldwin et al., 2012).

Invasiveness rating from California Invasive Plant Inventory (Cal-IPC, 2006)

An \*\*\* indicates non-native species which have become naturalized or persist without cultivation

#### Habit Definitions:

AF = annual fern or fern ally  
 AG = annual grass.  
 AH = annual herb.  
 BH = biennial herb.  
 PF = perennial fern or fern ally  
 PG = perennial grass.  
 PH = perennial herb.  
 PV = perennial vine.  
 S = shrub.  
 T = tree.

#### Invasive Species Definitions:

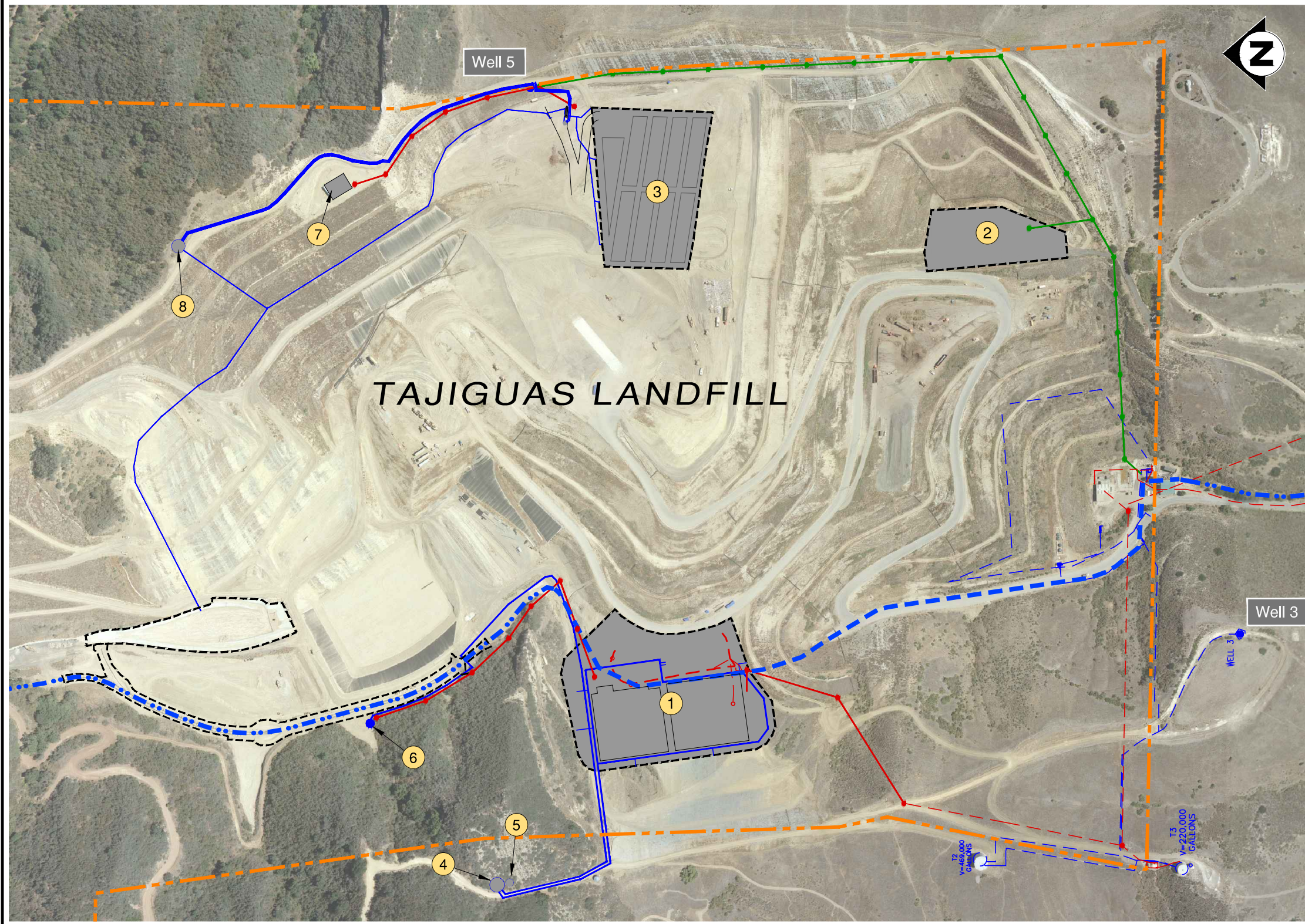
High: severe ecological impact on physical processes, plant & animal communities, vegetation structure  
 Moderate: substantial & apparent ecological impact on physical processes, plant & animal communities, veg  
 Limited: minor ecological impacts on a statewide level





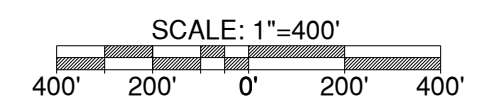


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- ### Keynotes
- ① Proposed Resource Recovery Project
  - ② Temporary Landfill Operations Facilities
  - ③ Proposed Composting Area
  - ④ Proposed Water Tank - 220,000 gallons
  - ⑤ Proposed Recycled Water Tank A - 70,000 gallons
  - ⑥ Proposed Well 6 (Approx. Location)
  - ⑦ Proposed Mechanics Building
  - ⑧ Proposed Recycled Water Tank - 300,000 gallons

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### Legend

- Landfill Boundary
- Existing Power Lines
- Pila Creek
- Existing Water Lines
- Proposed Power Lines
- Pila Creek (Underground)
- Proposed Water Lines
- Proposed Power Lines [not part of the RRP]
- Well

Tajiguas Landfill Resource Recovery Project  
**Figure 3.5 - Utilities**