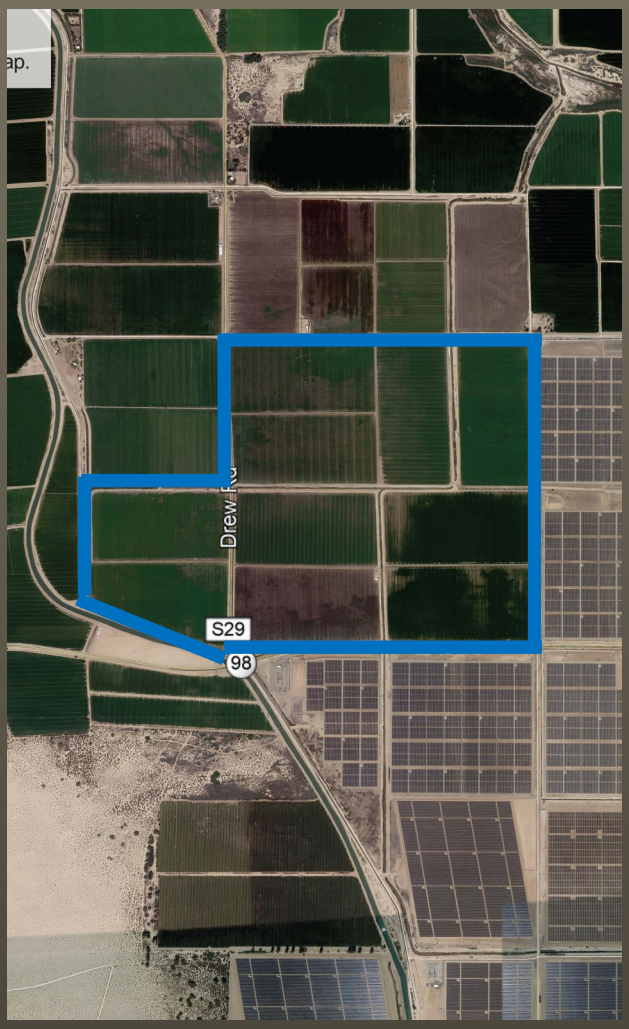
Drew Solar Project

SCH. No. 2018051036



Prepared for

IMPERIAL COUNTY CALIFORNIA 1907

May 2019

DRAFT ENVIRONMENTAL IMPACT REPORT

VOLUME III — APPENDICES G-M

Prepared by

egi
ericsson-grant inc.

THIS PAGE INTENTIONALLY LEFT BLANK.

VOLUME III – APPENDICES G-M

THIS PAGE INTENTIONALLY LEFT BLANK.

APPENDIX G
NOISE ANALYSIS

THIS PAGE INTENTIONALLY LEFT BLANK.

RECON

Noise Analysis for the Drew Solar Project, Imperial County, California

Prepared for
Drew Solar, LLC
PO Box 317
El Centro, CA 92244

Prepared by
RECON Environmental, Inc.
1927 Fifth Avenue
San Diego, CA 92101
P 619.308.9333

RECON Number 8653
July 24, 2018

Jack T. Emerson, Noise Specialist

William A. Maddux, Senior Noise Specialist

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

FIGURES

TABLES

ATTACHMENTS

Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
CAISO	California Independent Service Operator
Caltrans	California Department of Transportation
CNEL	community noise equivalent level
County	County of Imperial
CUP	Conditional Use Permit
dB	decibel
dB(A)	A-weighted decibel
Drew Switchyard	San Diego Gas and Electric Drew Switchyard
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HVAC	heating, ventilation, and air conditioning
L_{eq}	equivalent noise level
$L_{eq(8h)}$	8-hour equivalent noise level
LOS	Level of Service
L_{pw}	sound power
NEMA	National Electrical Manufacturers Association
PPV	peak particle velocity
SDG&E	San Diego Gas and Electric
SoundPlan	SoundPlan Essential
SR-98	State Route 98

Executive Summary

The Drew Solar Project (project) would involve construction of an approximately 100-megawatt (MW) alternating current solar generation facility and energy storage facility on an 844.2 gross-acre (855 gross-acre after the project's Parcel Map is recorded) and 762.8 net farmable-acre project site in the unincorporated Mount Signal area in Imperial County, California. This report discusses potential noise impacts from the construction and operation of the project. The potential for noise impacts to adjacent receptors from construction and operation of future uses on the project site was assessed based on noise level limits from the Imperial County (County) General Plan Noise Element.

Construction Noise

Site preparation and facility installation would include the use of a variety of noise-generating equipment such as scrapers, excavators, loaders, and water trucks, along with others. During construction, average 8-hour equivalent noise levels ($L_{eq[8h]}$) would attenuate to 46 A-weighted decibels (dB(A)) $L_{eq(8h)}$ at the property line of the nearest residence (the single-family residence immediately west of the intersection of Drew Road and State Route 98) within the project site boundaries. When construction activities are focused in smaller areas near the project site boundary, construction noise levels would reach 58 dB(A) $L_{eq(8h)}$ at the property line of the nearest residence (the single-family residence immediately west of the intersection of Drew Road and State Route 98). Project construction noise levels would comply with 75 dB(A) $L_{eq(8h)}$ noise level limit established by the County General Plan Noise Element. Impacts would be less than significant.

Operations Noise

Stationary sources of noise associated with the operation of the project energy generation and storage facilities would include inverters, transformers, solar panel tracker motors, a substation, and transmission gen-tie lines. Noise associated with project operation would attenuate to less than 50 dB(A) L_{eq} within the project site boundary. On-site generated noise would attenuate to 44 dB(A) L_{eq} at the nearest single-family residence immediately (west of the intersection of Drew Road and State Route 98. Noise levels would not exceed applicable daytime or nighttime property line noise level limits from the County General Plan Noise Element. Therefore, noise associated with project operations would be less than significant.

Operational Traffic Noise

During operations, project-generated traffic would increase volumes on local roadways and thereby increase traffic noise levels in the project area. Project trip generation would be extremely limited–up to 20 trips per day. Ambient noise level increases attributable to project-generated traffic are anticipated to be less than 3 dB(A) and thus would be less than barely perceptible. Impacts would be less than significant.

Vibration

Construction Vibration

Project construction would include the use of vibration-generating construction equipment such as large bulldozers, loaded trucks, jackhammers, and mast impact pile drivers. Peak particle velocity at the nearest structure would be anticipated to reach up to 0.073 inch per second at the nearest structure. These vibration levels are not anticipated to result in structural damage and would be less than barely perceptible. Groundborne noise and vibration impacts would be less than significant.

Operation Vibration

Project operation would not include any substantial sources of groundborne vibration. No vibration impacts would result from project operation.

1.0 Introduction

1.1 Project Description

The Drew Solar Project (project) is a proposed solar photovoltaic generation facility and energy storage facility located in Imperial County, California. The project site is located in the unincorporated Mount Signal area, approximately 6.5 miles southwest of the city of El Centro and approximately 1.85 miles north of the U.S.-Mexico border. Figure 1 shows the regional location of the project site.

The project site is approximately 762.8 net farmable acres or 844.2 gross acres (855 gross acres after the project's Parcel Map is recorded) and is comprised of six parcels: Assessor Parcel Numbers (APN) 052-170-031, 052-170-032, 052-170-037, 052-170-039, 052-170-056, and 052-170-067. The project site is bounded by Kubler Road to the north, Westside Main and Wormwood Canals to the west, State Route 98 (SR-98) to the south, and Pulliam Road to the east. Agricultural uses are located on the project site and properties to the north, west, and southwest. Solar generation facilities are located on properties to the east and south of the project site. Nearby noise-sensitive receivers include a single-family residence located immediately west of the intersection of Drew Road and SR-98 (approximately 100 feet from project site) and a single-family residence located northeast of the intersection of Kubler Road and Pulliam Road (approximately 400 feet from project site). Figure 2 shows an aerial photograph of the project site and vicinity.

The purpose of the project is to generate approximately 100 MW of renewable electricity, and the storage of power both generated by the project and from the grid operated by the California Independent Service Operator (CAISO) for the State of California. Five solar power generation and potential energy storage conditional use permits (CUPs) are proposed, and a sixth CUP for energy storage as a component of solar. The project may include an operations and maintenance (O&M) building or buildings, substation(s), photovoltaic modules mounted on horizontal single-axis trackers, energy storage facilities, inverters, internal roadways, and possibly also auxiliary improvements for storm water retention, fire water storage, water filtration and treatment, equipment control buildings, septic systems, and parking. The project would connect to San Diego Gas & Electric's (SDG&E) Drew Switchyard (Drew Switchyard), which is located immediately south of the project, across SR-98, for power transmission to the CAISO grid. Figure 3 shows the anticipated site plan.

The project may also incorporate an energy storage component. The field of energy storage is rapidly advancing; thus a single technology or provider has not been selected for the energy storage component of the project. The storage component may be centralized and located adjacent to the substation, or alternatively, the energy storage component may be distributed throughout the plant adjacent to individual power conversion centers. The storage component would be housed in a warehouse type building or alternatively in modular structures such as cargo shipping containers.

The project site is owned by Imperial Irrigation District and would be leased by the Applicant for at least the duration of the Development Agreement. Project development would be phased, with renewable energy generation and energy storage facilities developed at a flexible rate based on market conditions and changing utility procurement plans. Development phases would occur under up to six separate CUPs. Under the development agreement, the CUPs will be valid for 40 years with up to 10 years to commence construction. After the conclusion of the term of the CUPs, the project entitlements require the Applicant to decommission the site and restore it to farmland uses in accordance with a future reclamation Plan.

Project approvals would include the Development Agreement, Zone Change to add Renewable Energy (RE) Overlay, General Plan Amendment of the Renewable Energy and Transmission Element, 6 CUPs, a Parcel Map, 2 Lot-Tie Agreements, a Variance for power pole height requirements, and certification of the Environmental Impact Report.

1.1.1 Project Construction and Phasing

The construction schedule would be phased based on market conditions and changing utility procurement plans; the specific phasing is not known at this time but may occur over 10 years following approval of the CUPs. If the project construction were to occur in a single phase, construction would take place over approximately 18 months.

No structures are present on the project site and the project site has previously been graded to accommodate agricultural uses. The construction would involve site preparation activities such as clearing, grading, perimeter fencing, development of staging areas and site access roads; and would involve facility installation activities such as installation of support masts (impact pile driving), trenching utility connections, installation of racks and panels on support masts, installation of energy storage facilities including building and/or shipping containers, construction of electrical distribution facilities, construction of the O&M building(s), and construction of substation(s) and gen-tie(s). Daily trip generation during the construction would include up to 436 worker commute trips per day and 10 average daily hauling trips (up to 40 heavy-duty truck trips per day).

1.1.2 Project Operation

Operation of the project would require routine maintenance and security; the operations phase will have approximately 10 full-time personnel. The project would generate up to 20 trips per day.

1.1.3 Project Decommissioning

Consistent with the County of Imperial (County) decommissioning requirements, the project site would be restored to its existing condition upon project conclusion. Although there have been no solar facilities decommissioned in Imperial County, the activities and equipment involved in decommissioning are anticipated to be similar to those involved in construction, thus decommissioning would result in similar noise levels as construction.

1.2 Fundamentals of Noise

Noise is defined as a loud or unpleasant sound that causes disturbance. Sound levels are described in units called the decibel (dB). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease.

In technical terms, sound levels are described as either a "sound power level" or a "sound pressure level," which while commonly confused are two distinct characteristics of sound. Both share the same unit of measure, the dB. However, sound power, expressed as L_{pw}, is the energy converted into sound by the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers such as an eardrum or microphone, the sound pressure level. Sound measurement instruments only measure sound pressure, and limits used in standards are generally sound pressure levels.

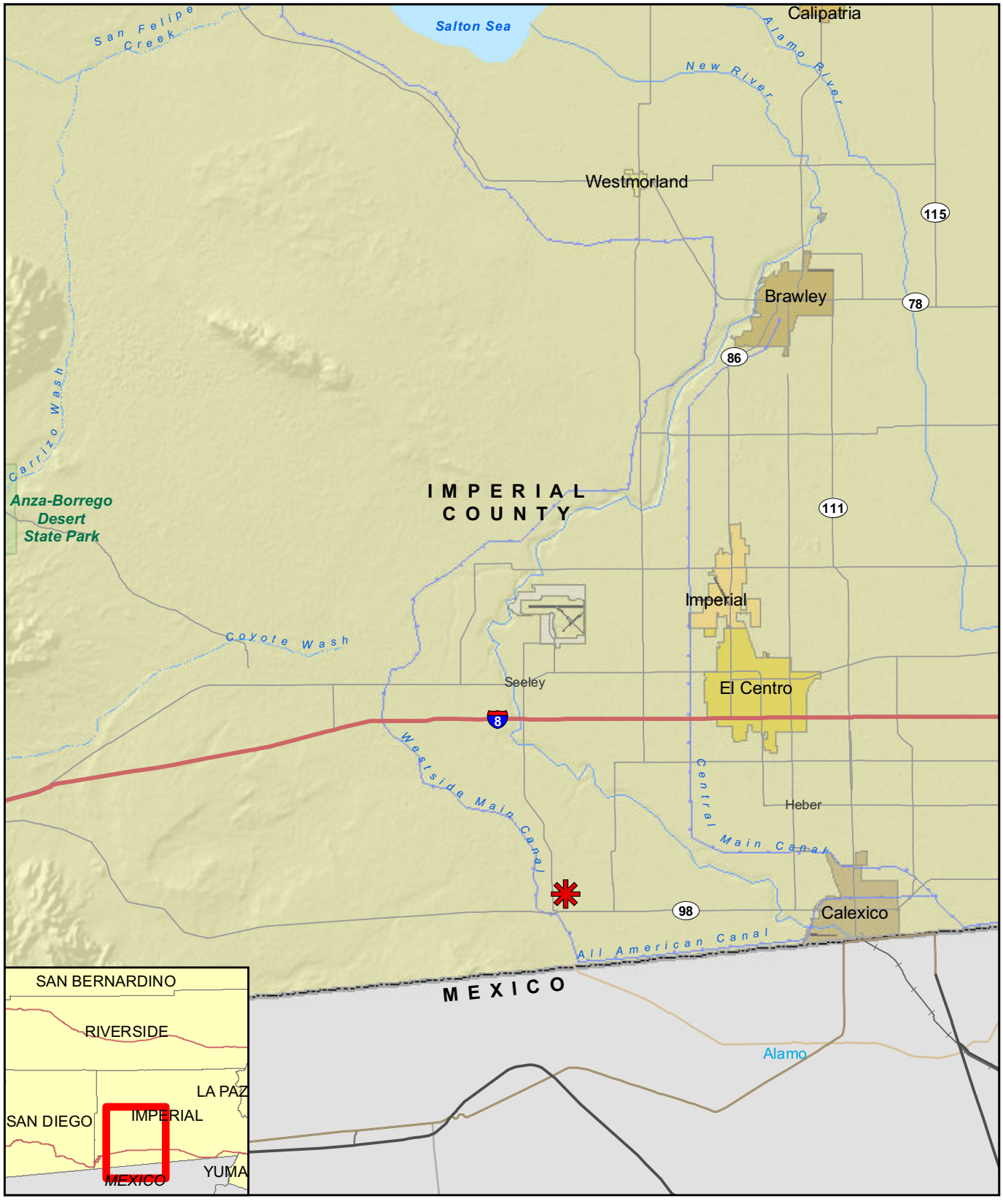
The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-scale, which approximates the frequency response of the average young ear when listening to most ordinary everyday sounds, was devised. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale levels of those sounds. Therefore, the "A-weighted" noise scale is used for measurements and standards involving the human perception of noise.

Noise levels using A-weighted measurements are designated with the notation dB(A). Changes in noise levels are generally perceived by the average human ear as follows: 3 dB(A) is barely perceptible, 5 dB(A) is readily perceptible, and 10 dB(A) is perceived as a doubling or halving of noise (California Department of Transportation [Caltrans] 2013a).

1.2.1 Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. Consistent with the County's General Plan Noise Element, the noise descriptors used for this study are the equivalent noise level (L_{eq}) and the community noise equivalent level (CNEL). The L_{eq} is the equivalent steady-state noise level in a stated period of time that is calculated by averaging the sound energy over a time period; when no period is specified, a 1-hour period is assumed. The CNEL is a 24-hour equivalent sound level.

The CNEL calculation applies an additional 5 A-weighted decibels dB(A) penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and a 10 dB(A) penalty is added to noise occurring during the night, between 10:00 p.m. and 7:00 a.m. These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and night.



Project Location

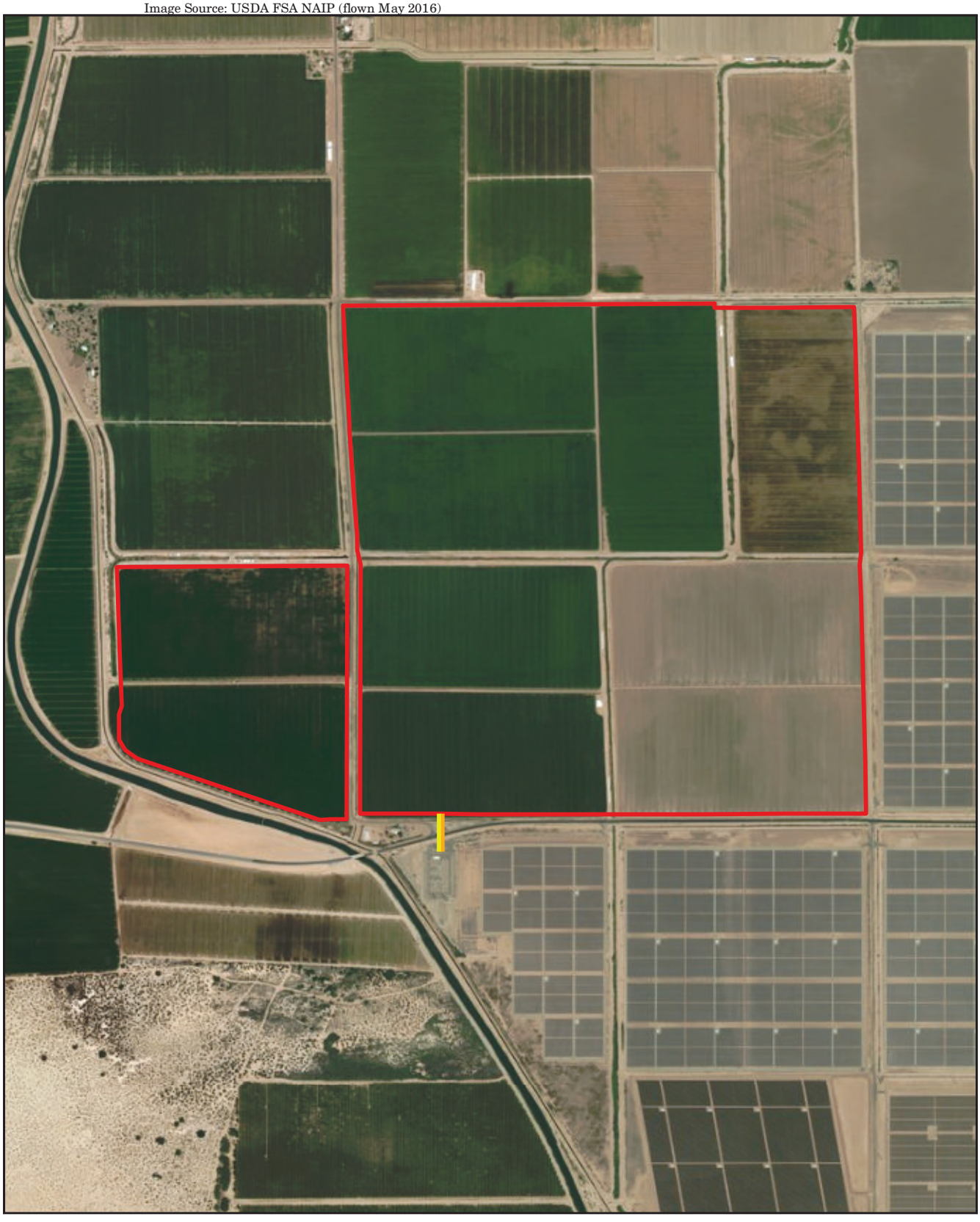
RECON

M:\JOBS5\8653\common_gis\fig1.mxd 11/29/2017 sab

FIGURE 1

Regional Location

Image Source: USDA FSA NAIP (flown May 2016)



0 Feet 1,500

Project Boundary

Gen-Ties

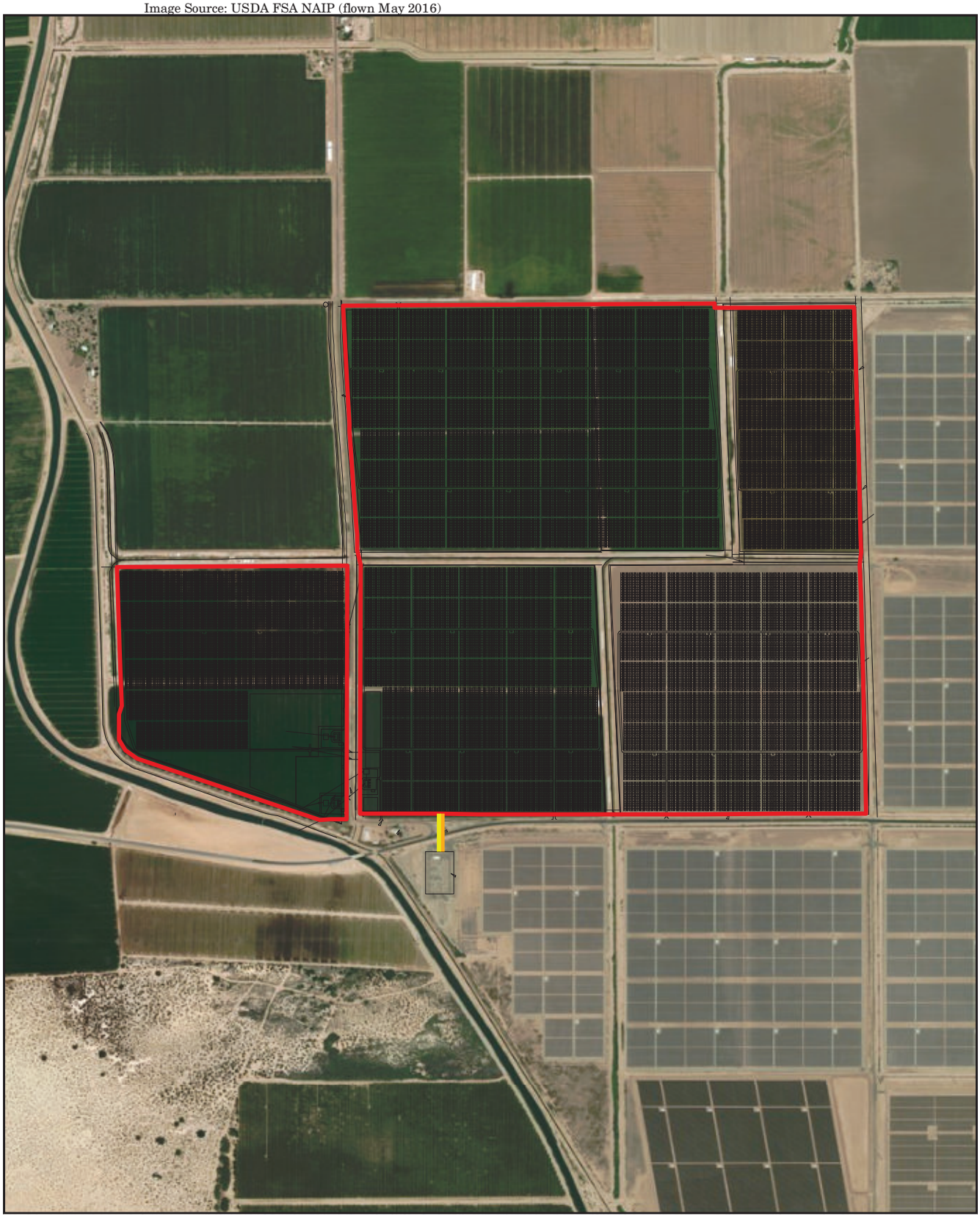
RECON

M:\JOBS5\8653\common_gis\fig2_nos.mxd 5/17/2018 sab

FIGURE 2

Project Location on Aerial Photograph

Image Source: USDA FSA NAIP (flown May 2016)



0 Feet 1,500

Project Boundary
Gen-Ties
Site Plan Lines

RECON

M:\JOBS5\8653\common_gis\fig3_nos.mxd 5/17/2018 sab

FIGURE 3
Site Plan

1.2.2 Propagation

Sound from a small, localized source (approximating a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern, known as geometric spreading. The sound level decreases or drops off at a rate (drop-off rate) of 6 dB(A) for each doubling of the distance.

Traffic noise is not a single, stationary point source of sound. The movement of vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. The drop off rate for a line source is 3 dB(A) for each doubling of distance.

The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site (such as parking lots or smooth bodies of water) receives no additional ground attenuation, and the changes in noise levels with distance are simply the geometric spreading from the source, which equates to 6 dB(A) per doubling distance. A soft site (such as soft dirt, grass, or scattered bushes and trees) provides an additional ground attenuation value of 1.5 dB(A) per doubling of distance. Thus, a point source over a soft site would drop off at 7.5 dB(A) per doubling of distance.

2.0 Existing Conditions

2.1 Land Use Environment

The project site is located in the unincorporated Mount Signal area. All parcels in the vicinity of the project site are zoned General Agricultural (A2), General Agricultural/Rural Zone (A2R), or Heavy Agricultural (A-3). The General Plan land use designation for all parcels in the immediate vicinity of the project site is Agriculture; west of the Westside Main Canal, the General Plan land use designation is generally Recreation/Open Space.

Agricultural uses are located on the project site and properties to the north, west, and southwest; associated buildings include a single-family residence located immediately west of the intersection of Drew Road and SR-98 (approximately 100 feet from project site), and a single-family residence is located northeast of the intersection of Kubler Road and Pulliam Road (approximately 400 feet from project site). Additionally, three single-family residences are located to the west of the intersection of Kubler Road and Drew Road (approximately 0.5 miles west of the Drew Solar Project site).

Solar generation facilities are located on properties to the east and south of the project site; associated buildings include an O&M building at the SDG&E Drew Switchyard (approximately 400 feet from the Drew Solar Project site), and an O&M building at the Centinela Solar Project (approximately 0.7 miles east of the Drew Solar Project site).

2.2 Transportation Network

Mapping indicates that road elements in the vicinity of the project site include SR-98, Drew Road, Pulliam Road, Kubler Road, and Mandrapa Road.

The segment of SR-98 adjacent to the project site is a two-lane undivided highway with a 24-foot-wide paved width. Access from Drew Road and Pulliam Road is regulated by stop signs. The highway is in good condition. The posted speed limit for SR-98 was observed to be 65 miles per hour (mph), with a reduced speed limit of 55 mph for any vehicle towing.

The segment of Drew Road adjacent to the project site is a 2-lane undivided roadway with an approximate paved width of 24 feet. No posted speed limit was observed for this segment of Drew Road.

The segment of Pulliam Road adjacent to the project site is a two-lane undivided roadway with a paved width of up to 24-feet. No posted speed limit was observed for this segment of Pulliam Road. Pulliam Road does not accommodate substantial traffic volumes; traffic is generally limited to trips generated by adjacent agricultural uses and solar generation facilities.

The segment of Kubler Road adjacent to the project site is a two-lane undivided roadway with a paved width of up to 24 feet. No posted speed limit was observed for this segment of Kubler Road. Kubler Road does not accommodate substantial traffic volumes; traffic is generally limited to trips generated by adjacent agricultural uses and solar generation facilities.

Mandrapa Road is an unpaved, access route for agricultural uses. Grading was observed to be uneven and plants were observed on sections of the access route. Access from SR-98 is afforded by a gap in traffic barriers with no traffic control device. Mandrapa Road does not accommodate substantial traffic volumes.

2.3 Ambient Noise Environment

Three short-term noise measurements were taken on December 5, 2017 and one 24-hour measurement was taken between December 5 and 6, 2017. Measurements were taken using two Larson-Davis Model LxT Type 1 Integrating Sound Level Meter, serial numbers 3827 and 3828. The meters meet American National Standards Institute (ANSI) S1-4 specifications for Type 1 instruments. Meter was calibrated before and after measurements.

The following parameters were used:

Filter:	A-weighted
Response:	Slow
Time History Period:	5 seconds
Height	5 feet above ground

Noise measurements were taken to obtain existing ambient noise levels. Noise measurements are described below and shown in Table 1. Observed traffic volumes were counted during noise measurements; the results are shown in Table 2. The locations of the measurements are shown on Figure 4, and the noise measurement data are contained in Attachment 1.

Table 1
Noise Measurement Data

Site ID	Location	Start Time	Duration	Noise Level (dB[A]) L_{eq}	Noise Level (dB[A]) L_{max}	Noise Level (dB[A]) L_{min}	Noise Sources
1	Southwest of the intersection of Pulliam Road and Kubler Road	2:27 pm	20 minutes	38.8	57.8	28.4	Wind; Vehicle traffic on Pulliam Road
2	Southeast of the intersection of Drew Road and Kubler Road	2:58 pm	20 minutes	60.0	80.8	27.4	Vehicle traffic on Drew Road
3	North of SR-98, 50 feet from SR-98 centerline	3:30 pm	20 minutes	63.9	87.6	27.3	Vehicle traffic on SR-98
4	Along Brockman Drain, 1,420 feet north of SR-98	2:30 pm	24 hours	47.8*	49.2*	28.0*	Wind; Distant vehicle traffic on SR-98

dB(A) = A-weighted decibels; L_{eq} = equivalent noise level; L_{max} = maximum hourly L_{eq}; L_{min} = minimum hourly L_{eq}; SR-98 = State Route 98

* Measurement 4 was a 24-hour measurement. The community noise equivalent level is reported in the L_{eq} column, the maximum hourly L_{eq} is reported in the L_{max} column, and the minimum hourly L_{eq} is reported in the L_{min} column.

Table 2
Observed Traffic Counts

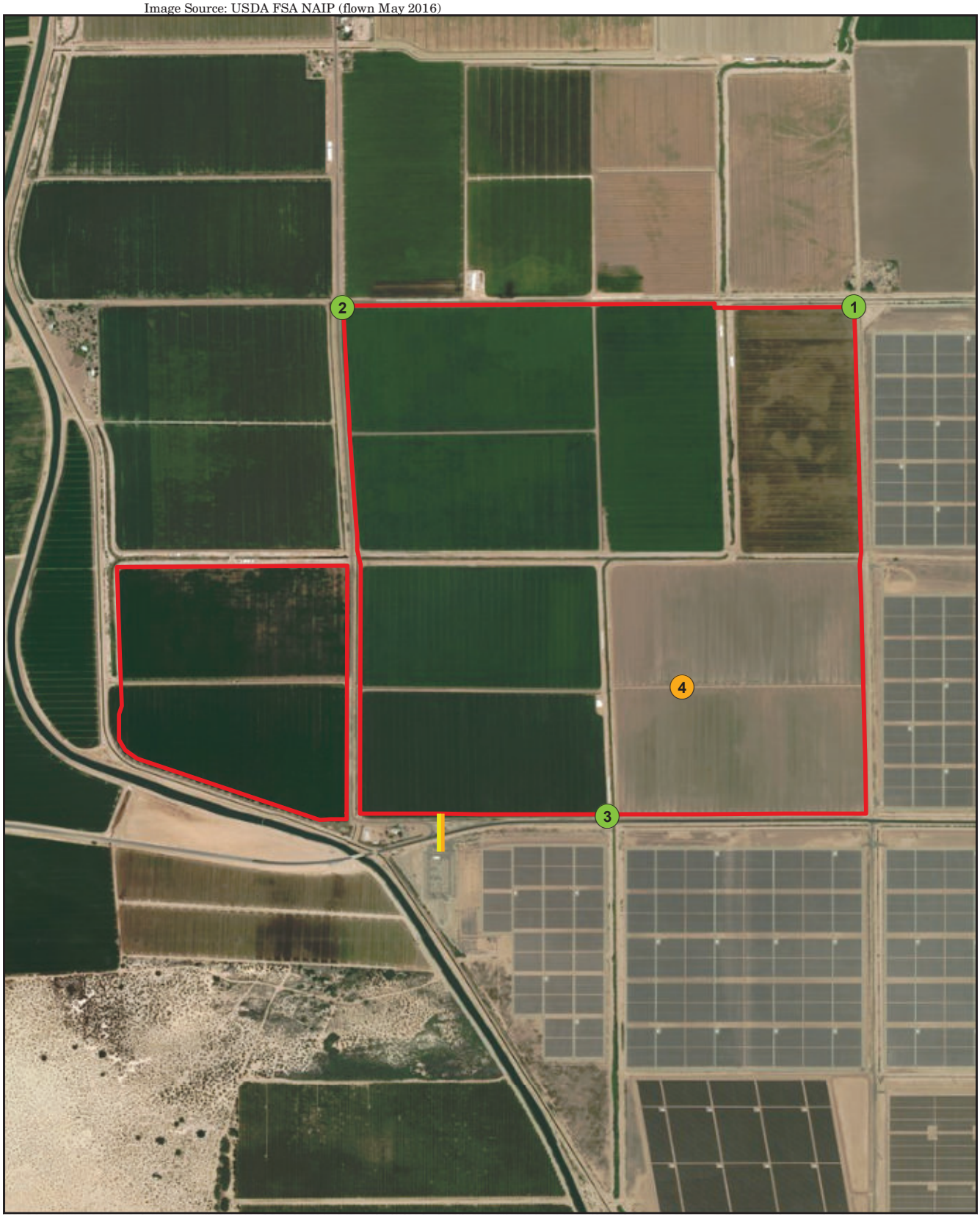
Measurement	Roadway	Direction	Autos	Medium Trucks	Heavy Trucks	Buses	Motor-Cycles
1	Pulliam Road and Kubler Road	Any	1	0	0	0	0
2	Drew Road	Any	7	0	0	0	0
3	State Route 98	Eastbound	30	0	2	0	0
		Westbound	8	0	1	0	0

SOURCE: Field traffic counts.
*Tractor on State Route 98 categorized as a heavy truck.

Measurement 1 was located at the northeast corner of the project site, 75 feet south of the centerline of Kubler Road and 50 feet west of the centerline of Pulliam Road. During the measurement, one pickup truck approached the intersection heading northbound on Pulliam Road and turned east onto Kubler Road. The primary source of noise at this location was wind. The average measured noise level during Measurement 1 was 38.8 dB(A) L_{eq}.

Measurement 2 was located at the northwest corner of the project site, 50 feet south of the centerline of Kubler Road and 50 feet east of the centerline of Drew Road. During the measurement, seven passenger vehicles traveled along Drew Road. No traffic was observed on Kubler Road. The primary source of noise at this location was vehicle traffic on Drew Road.

Image Source: USDA FSA NAIP (flown May 2016)



0 Feet 1,500

Project Boundary **Noise Measurements**

Gen-Ties

24-Hour

Short-term

RECON

M:\JOBS5\8653\common_gis\fig4_nos.mxd 5/17/2018 sab

FIGURE 4

Noise Measurements

Due to the deteriorated condition of Drew Road, traffic noise levels were notably higher than would be expected. No posted speed limit for Drew Road was observed and vehicle speeds were highly varied. The average measured noise level during Measurement 2 was 60.0 dB(A) L_{eq}.

Measurement 3 was located along the southern boundary of the project site, 50 feet north of the centerline of SR-98 and across from the driveway to the solar farm to the south. During the measurement, 38 passenger vehicles, 2 heavy trucks, and 1 farm-tractor traveled along SR-98. The primary source of noise at this location was vehicle traffic on SR-98. Traffic was free flow and nearly all vehicles were observed to travel near the posted speed limit of 65 mph. The average measured noise level during Measurement 3 was 63.9 dB(A) L_{eq}.

Measurement 4 was located along a drainage ditch in the interior of the project site, approximately 1,420 feet north of the centerline of SR-98 and approximately 2,000 feet west of Pulliam Road. The measured noise level during Measurement 4 was 47.8 CNEL. A minimum hourly noise level of 28.0 dB(A) L_{eq} was measured between 12:30 and 1:30 a.m. and a maximum hourly noise level of 49.2 dB(A) L_{eq} was measured between 1:30 and 2:30 p.m.

3.0 Applicable Standards

3.1 Noise Standards

3.1.1 Imperial County General Plan Noise Element

3.1.1.1 Property Line Noise Level Limits

The County General Plan Noise Element identifies property line noise level limits that apply to noise generation from one property to an adjacent property (excluding construction noise). As stated in the Noise Element, the property line noise level limits imply the existence of a sensitive receptor on the adjacent, or receiving, property. In the absence of a sensitive receptor, an exception or variance to the standards may be appropriate. The property line noise standards are codified in the County Code or Ordinances and thus are enumerated in the subsequent section (see Section 3.1.2).

3.1.1.2 Construction Noise Standards

Imperial County General Plan Noise Element Section IV.C.3 addresses noise generated by construction activities. It states:

- Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB L_{eq}, when averaged over an eight (8) hour period, and measured at the nearest sensitive receptor. This standard assumes a construction period, relative to an individual sensitive receptor of days or weeks. In cases of extended length construction times, the standard

may be tightened so as not to exceed 75 dB L_{eq} when averaged over a one (1) hour period.

- Construction equipment operation shall be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday. No commercial construction operations are permitted on Sunday or holidays. In cases of a person constructing or modifying a residence for himself/herself, and if the work is not being performed as a business, construction equipment operations may be performed on Sundays and holidays between the hours of 9 a.m. and 5 p.m. Such non-commercial construction activities may be further restricted where disturbing, excessive, or offensive noise causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area.

3.1.2 Imperial County Noise Abatement and Control

Imperial County Code of Ordinances Title 9, Division 7: Noise Abatement and Control, specifies noise level limits. Noise level limits are summarized in Table 3. Noise level limits do not apply to construction equipment.

Table 3
Imperial County Property Line Noise Limits

Zone	Time	One-Hour Average Sound Level [dB(A) L_{eq}]
Low-Density Residential Zones	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
Medium to High-Density-Residential Zones	7:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial Zones	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	55
Manufacturing/Light Industrial/Industrial Park Zones including agriculture	(anytime)	70
General Industrial Zones	(anytime)	75

dB(A) L_{eq} = weighted decibels equivalent noise level
SOURCE: Imperial County Noise Abatement and Control Ordinance, Tit. 9, Div. 7, § 90702.00(A).

3.2 Vibration Standards

3.2.1 California Department of Transportation Guidance

Caltrans' standards and methodologies used to determine when local land uses may be subject to unacceptable vibrations are based on the *Transportation and Construction Vibration Guidance Manual* (Caltrans 2013b). Maximum recommended vibration limits, set in units of inches per second as measured by the peak particle velocity (PPV), by the

American Association of State Highway and Transportation Officials (AASHTO) are identified in Table 4.

Table 4
American Association of State Highway and Transportation Officials
Maximum Vibration Levels for Preventing Damage

Structure	Peak Particle Velocity (inches/second)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5
SOURCE: California Department of Transportation 2013b, Table 15, p. 25	

Based on AASHTO recommendations, limiting vibration levels to below 0.2 PPV at residential structures would prevent structural damage regardless of building construction type. These limits are applicable regardless of the persistence of the source. However, as shown in Table 5 and 6, potential human response associated with vibration is typically dependent on the persistence (i.e. whether it is a steady or transient vibration source). These levels are summarized in Tables 5 and 6.

Table 5
Human Response to Steady State Vibration

Peak Particle Velocity (inches/second)	Human Response
3.6 (at 2 Hertz)–0.4 (at 20 Hertz)	Very disturbing
0.7 (at 2 Hertz)–0.17 (at 20 Hertz)	Disturbing
0.10	Strongly perceptible
0.035	Distinctly perceptible
0.012	Slightly perceptible
SOURCE: California Department of Transportation 2013b, Table 4, p. 21	

Table 6
Human Response to Transient Vibration

Peak Particle Velocity (inches/second)	Human Response
2.0	Severe
0.9	Strongly perceptible
0.24	Distinctly perceptible
0.035	Barely perceptible
SOURCE: California Department of Transportation 2013b, Table 6, p. 22	

As shown in Table 6, the vibration level threshold at which transient vibration sources (such as construction equipment) are considered to be distinctly perceptible is 0.24 PPV. Although groundborne vibration is sometimes noticeable in outdoor environments, groundborne vibration is almost never annoying to people who are outdoors due to the lack of a reference for the vibration, such as an object on a shelf. Therefore, the vibration level threshold for human perception is assessed at occupied structures (Federal Transit Administration 2006).

4.0 Analysis Methodology

4.1 Construction Analysis Methodology

Project construction noise would be generated by diesel engine-driven construction equipment used for site preparation activities such as clearing, grading, perimeter fencing, development of staging areas and site access roads; and would involve facility installation activities such as installation of support masts (impact pile driving), trenching utility connections, construction of electrical distribution facilities, and construction of the O&M building(s). Diesel engine-driven trucks also would bring materials to the site.

Construction equipment with diesel engines typically generate maximum noise levels from 80 to 90 dB(A) L_{eq} at a distance of 50 feet (Federal Highway Administration [FHWA] 2006). Table 7 summarizes typical construction equipment noise levels. During excavation, grading, and paving operations, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks, such as measurement. Thus, average hourly noise levels would be less than maximum noise levels.

Table 7
Typical Construction Equipment Noise Levels

Equipment	Noise Level at 50 Feet [dB(A) L_{eq}]	Typical Duty Cycle
Auger Drill Rig	85	20%
Backhoe	80	40%
Blasting	94	1%
Chain Saw	85	20%
Clam Shovel	93	20%
Compactor (ground)	80	20%
Compressor (air)	80	40%
Concrete Mixer Truck	85	40%
Concrete Pump	82	20%
Concrete Saw	90	20%
Crane (mobile or stationary)	85	20%
Dozer	85	40%
Dump Truck	84	40%
Excavator	85	40%
Front End Loader	80	40%
Generator (25 kilovolt amps or less)	70	50%
Generator (more than 25 kilovolt amps)	82	50%
Grader	85	40%
Hydra Break Ram	90	10%
Impact Pile Driver (diesel or drop)	95	20%
In situ Soil Sampling Rig	84	20%
Jackhammer	85	20%
Mounted Impact Hammer (hoe ram)	90	20%
Paver	85	50%
Pneumatic Tools	85	50%
Pumps	77	50%
Rock Drill	85	20%
Roller	74	40%
Scraper	85	40%

Table 7 Typical Construction Equipment Noise Levels		
Equipment	Noise Level at 50 Feet [dB(A) L_{eq}]	Typical Duty Cycle
Tractor	84	40%
Vacuum Excavator (vac-truck)	85	40%
Vibratory Concrete Mixer	80	20%
Vibratory Pile Driver	95	20%
dB(A) L_{eq} = weighted decibels equivalent noise level SOURCE: Federal Highway Administration 2006		

Earthwork activities generally result in the highest noise levels at adjacent properties. During earthworks operations, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks, such as measurement. Although maximum noise levels reach 80 to 90 dB(A) at a distance of 50 feet during most construction activities, hourly equivalent noise level generated by typical earthworks and paving activities is generally 82 dB(A) L_{eq} at 50 feet from the center of construction activity when assessing the loudest pieces of equipment working simultaneously.

The project site and the area surrounding all off-site roadway extensions are relatively flat. This analysis conservatively assumes no attenuation from barriers and topography.

Ground conditions typically change during construction due to fugitive dust control practices such as soil stabilization through site watering and best management practices such as subgrade compaction. This analysis conservatively models ground conditions as acoustically hard. Thus, construction noise would be characterized by hard site attenuation rate of 6 dB(A) per doubling of distance.

4.2 Operations Analysis Methodology

Noise level predictions and contour mapping were developed using noise modeling software, SoundPlan Essential (SoundPlan), version 3.0 (Navcon Engineering 2015). SoundPlan calculates noise propagation based on algorithms and reference levels published by various government agencies, FHWA, and the International Standards Organization (ISO). For traffic the model uses the FHWA traffic noise model algorithms to predict noise levels. For stationary sources, SoundPlan models propagation based on ISO Standard 9613-2, "Attenuation of Sound during Propagation Outdoors, Part 2: General Method of Calculation." The ISO Standard 9613-2 assumes that all receptors would be downwind of stationary sources. This is a worst-case assumption for total noise impacts, since, in reality, only some receptors will be downwind at any one time. The model uses various input parameters, such as distances between sources, barriers, and receivers; and shielding provided by intervening terrain, barriers, and structures. Sources and receivers were input into the model using three-dimensional coordinates. This analysis conservatively assumes no attenuation from barriers and topography. In all cases, receivers were modeled at 5 feet above ground elevation, which represents the average height of the human ear. The model outputs include noise level contours and noise levels at specific receivers.

Stationary sources of noise associated with the operation of the project would include inverters, transformers, solar panel tracker motors, a substation, and transmission gen-tie lines. As the solar generation facility would only generate electricity between sunrise and sunset, noise from solar field inverters and transformers would likely be limited to daylight hours. After daylight hours energy storage facilities may continue to contribute energy to the grid. A single technology or provider has not been selected for the energy storage component of the project. Energy storage technology may be centralized or may be distributed throughout the plant. Depending on the technology selected for the energy storage component, the substation and transmission gen-tie lines as well as the solar field inverters and transformers may be active during both daylight and nighttime hours.

Inverters, transformers, and solar panel tracker motors would be distributed throughout the facility at each solar array block. It is not known at this time which manufacturer, brand, or model of units would be selected for use in the project, or the specific location units would be placed.

Based on review of various manufacturer specifications of inverters sized for nominal 1-to-2-MW solar arrays, a representative sound pressure level of 65 dB(A) at 5 feet from each inverter unit was selected for analysis (Satcon 2008; Attachment 2). This sound level equates to a sound power level of 77 dB(A). The height of the noise source was modeled at 1 meter.

The National Electrical Manufacturers Association (NEMA) specifies audible sound level limits for transformers. Based on these standards and the anticipated size of project transformers (up to 2 kVA), project transformers may generate noise levels up to 61 dB(A) at 5 feet (NEMA 2013; Attachment 3). This equates to a sound power level of 73 dB(A). The height of the noise source was modeled at 1 meter.

Based on available information for similar equipment, solar panel tracker motors typically generate instantaneous sound power levels of up to 79 dB(A), which equates to sound pressure levels of up to 67 dB(A) at 5 feet (ICF International 2010). Solar panel tracker motors are not in operation continuously. Solar panel tracker motors would generally reposition the arrays several times during daylight hours, and would also reposition the arrays once at sunset (resetting array position in preparation for the following day). Each individual repositioning would be brief and the frequency at which arrays are repositioned would be anticipated to be limited to a few times each hour or less. Hourly average noise levels would be less than instantaneous noise levels. During ambient noise measurements, solar panel tracker motors at adjacent solar generation facilities were observed. Repositioning lasted only a few seconds, was infrequent, and did not substantially contribute to the ambient noise environment. As solar panel tracker motors would not substantially contribute to the ambient noise environment they were not included in noise contour modeling.

The project would include the construction of one substation located near the intersection of Drew Road and SR-98 and the gen-tie line. The substation would include equipment such as switches, circuit breakers, and transformers. Switches and circuit breakers do not typically generate substantial noise. The power rating for substation transformers would be

several times higher than the power rating for transformers distributed throughout the facility at each solar array block. Based on NEMA standards for oil-immersed transformers, a sound level of 67 dB(A) at 5 feet would be representative of the substation (NEMA 2013). This equates to a sound power level of 97 dB(A). The height of the noise source was modeled at 2 meters.

The gen-tie line would be extended between the project's substation and the SDG&E Drew Switchyard. Corona discharge results from the partial breakdown of the electrical insulating properties of the air surrounding the conductors; energy discharged from the line may form small local pressure changes that result in audible hissing or crackling noises. The intensity of corona noise varies depending on the atmospheric conditions such as atmospheric moisture and pressure (which is related to altitude). The noise generated by similar transmission lines (i.e. approximately 230 kV) has previously been analyzed to be 25 dB(A) at 50 feet. This equates to a sound power level per length of 45 dB(A) per meter. The height of the noise source was modeled at 6 meters.

Table 8 summarizes equipment noise levels and heights.

Table 8
Project Equipment Modeling Parameters

Equipment	Sound Power Level	Noise Source Height
Inverter	87 dB(A)	1 meters
Transformer	86 dB(A)	1 meters
Substation	87 dB(A)	2 meters
Gen-Tie Line	45 dB(A) per meter	6 meters
dB(A) = A=weighted decibels		

4.3 Traffic Noise Analysis Methodology

Traffic noise increase would be considered significant where the increase would degrade the existing ambient noise environment at a noise-sensitive use. As discussed in section 1.2, changes in noise levels are generally perceived by the average human ear as follows: 3 dB(A) is barely perceptible, 5 dB(A) is readily perceptible, and 10 dB(A) is perceived as a doubling or halving of noise (Caltrans 2013). Thus for this analysis, a substantial permanent increase in the ambient noise levels is defined as a 3 dB(A) increase.

4.4 Vibration Analysis Methodology

A quantitative assessment of potential vibration impacts from construction activities, such as blasting, pile-driving, vibratory compaction, demolition, drilling, or excavation, may be conducted using the following equations (Caltrans 2013b).

Vibration impacts from normal equipment to structures may be estimated at any distance from the following equation:

$$PPV_{equipment} = PPV_{reference} \times (\frac{25}{Distance})^{1.5}$$

where: $PPV_{equipment}$ is the peak particle velocity in inches per second of the equipment adjusted for distance; and $PPV_{reference}$ is the reference vibration level in inches per second at 25 feet as shown in Table 9.

Table 9
Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity at 25 feet (inches per second)[1]	Approximate Groundborne Noise Level at 25 feet[1]
Large Bulldozer	0.089	87
Trucks	0.076	86
Mounted Impact Hammer	0.089	87
Impact Pile Driver	0.644	104

[1] Where noise level is the level in decibels referenced to 1 micro-inch/second and based on the root mean square velocity amplitude.
SOURCE: Federal Transit Administration 2006; California Department of Transportation 2013b.

5.0 Impact Analysis and Noise Environment

5.1 Construction Noise Analysis

Noise associated with the site preparation and facility installation will potentially result in short-term impacts to surrounding properties. A variety of noise-generating equipment such as scrapers, excavators, loaders, and water trucks, along with others, would be used during each construction phase.

As discussed in Section 4.1, the loudest construction activities typically result in hourly average noise levels of approximately 82 dB(A) L_{eq} at 50 feet from the center of the construction activity. Actual noise levels would vary depending on the nature of the construction phase, including the duration of specific activities, nature of the equipment involved, location of the particular receiver, and nature of intervening barriers. Therefore, the use of 82 dB(A) L_{eq} at 50 feet is considered a conservative value.

As discussed in Section 2.2.2, the County General Plan Noise Element establishes construction time of day restrictions and noise level limits. Construction activities may only occur Monday through Friday between the hours of 7:00 a.m. and 7:00 p.m. or Saturday between the hours of 9:00 a.m. and 5:00 p.m., excluding holidays. Additionally, construction noise may not exceed 75 dB(A) $L_{eq(8h)}$ at the nearest sensitive receptor.

Construction activities can be evaluated as point sources and noise from construction sites typically attenuate at a rate of 6 dB(A) for every doubling of the distance. The nearest sensitive receptor to the project site is the single-family residence immediately west of the intersection of Drew Road and SR-98. If construction were distributed across the entire project site, the distance from the center of construction activity to the nearest residence would be approximately 3,000 feet. Thus, average construction noise levels would attenuate to 46 dB(A) $L_{eq(8h)}$.

Due to the large size of the project site, construction activities are anticipated to be phased. This analysis assumes construction may be temporarily focused in a 10-acre area for at least 8 hours; this focused area is equivalent to approximately one-quarter of a typical 40-acre lot (i.e. land division quarter-quarter section). The assumption that construction would be focused in a small area is conservative because it would reduce the average distance between construction equipment and adjacent receivers. In a worst-case scenario with all construction activity occurring in the 10-acre area nearest to the single-family residence immediately west of the intersection of Drew Road and SR-98, the distance from the center of construction activity to the nearest property line would be approximately 760 feet. Thus, construction noise levels would attenuate to 58 dB(A) $L_{eq(8h)}$ at the nearest sensitive receptor.

Thus, construction noise levels would comply with 75 dB(A) $L_{eq(8h)}$ noise level limit established by County Noise Element. Impacts would be less than significant.

5.2 Operations Noise Analysis

Following the methodology discussed in Section 4.2, Operations Analysis, ground-floor noise level contours were modeled. Noise contours are shown on Figure 5. SoundPLAN data for on-site generated noise modeling are contained in Attachment 4.

As discussed in Section 3.4, the County Code of Ordinances establishes property line noise standards for residential, commercial, light industrial, and general industrial zoning districts. The project site and all surrounding properties are in agricultural zoning districts. The project would include a Conditional Zone Change to Medium Industrial (M-2) for APN 052-170-039 and 052-170-067. The property line noise standard for manufacturing, light industrial, industrial park, and agricultural zoning districts is 70 dB(A) L_{eq}. The nearest non-agricultural zone is the parcel at the southeast corner of the intersection of SR-98 and Brockman Road, which is approximately 5,040 feet from the project site.

As shown in Figure 5, noise associated with project operation would attenuate to less than 50 dB(A) L_{eq} within the project site boundary. On-site generated noise would attenuate to 44 dB(A) L_{eq} at the single-family residence immediately west of the intersection of Drew Road and SR-98 (approximately 100 feet from project site; General Agricultural [A2] zone).

Image Source: USDA FSA NAIP (flown May 2016)

Project Boundary
Modeled Receivers

Sources

Gen-Tie Lines
Transformer
Inverter
Substation

Noise Contours

30 dB(A) Leq
35 dB(A) Leq
40 dB(A) Leq
45 dB(A) Leq
50 dB(A) Leq
55 dB(A) Leq
60 dB(A) Leq
65 dB(A) Leq

0 Feet 1,250

RECON

M:\JOBS5\8653\common_gis\fig5_nos.mxd 5/17/2018 sab

FIGURE 5
Operations Noise

On-site generated noise would attenuate to 20 dB(A) L_{eq} at the single-family residence located northwest of the intersection of Kubler Road and Pulliam Road (approximately 400 feet from project site; Agricultural/Rural Zone [A2R] zone). Property line noise level limits from the County General Plan Noise Element are 70 dB(A) L_{eq} for agricultural zones. Noise levels would not exceed applicable daytime or nighttime property line noise level limits from the County General Plan Noise Element. Impacts would be less than significant.

5.3 Operational Traffic Noise Analysis

As discussed in Sections 1.2 and 4.3, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB(A) and would generally be perceived by the average human ear as barely perceptible. A permanent increase in the ambient noise levels that is less than 3 dB(A) would be less than significant.

During operations, the project would require approximately two full-time equivalent employees, which would generate up to 20 trips per day. As project trip generation would be extremely limited, the project is not anticipated to result in a doubling of traffic along any well-traveled roadway. For roadways where existing traffic volumes are equal to or less than 10 average daily traffic, project-generated traffic may result in a 3 dB(A) traffic noise increase, however resulting traffic noise levels would remain less than generally ambient noise levels attributable to other sources[1]. Ambient noise level increases attributable to project-generated traffic are anticipated to be less than 3 dB(A). Impacts would be less than significant.

5.4 Vibration

5.4.1 Construction Vibration

As discussed in Section 3.2.2, vibration level threshold at which construction equipment are considered distinctly perceptible is 0.24 PPV and limiting vibration levels to below 0.2 PPV at residential structures would prevent structural damage regardless of building construction type. Groundborne noise and vibration from vibration-generating construction equipment such as large bulldozers, loaded trucks, and jackhammers would attenuate to less than 0.2 PPV at 12, 10, and 5 feet, respectively. Project construction is not anticipated to involve the use of construction equipment within 15 feet of existing structures; therefore these construction activities would not result in substantial groundborne noise and vibration.

Project-generated groundborne noise and vibration levels would be highest during impact pile driving. Project solar array support masts would generally be set back from the

[1] Based on FHWA Traffic Noise Prediction Model, roadways with traffic volumes of 20 average daily traffic and speed limits between 25 and 45 miles per hour would result in noise levels of 36 to 42 dB(A) L_{eq} at 50 feet from the centerline of the roadway. As discussed in 2.3, measured 24-hour ambient noise levels at a location central to the site were 47.8 CNEL.

property line by at least 40 feet to accommodate perimeter access roads. Additionally, the project site is bounded by Kubler Road to the north, Westside Main Canal to the west, SR-98 to the south, and Pulliam Road to the east. Groundborne noise and vibration from impact pile drivers would attenuate to less than the transient vibration level threshold within 72 feet, which would generally be within the public right-of-way.

The nearest structure to the project site is the single-family residence immediately west of the intersection of Drew Road and SR-98. Impact pile driving would be anticipated to occur approximately 180 feet from this structure. Transient vibration levels at the single-family residence would be anticipated to reach up to 0.073 PPV. Vibration levels would not exceed the transient vibration level threshold of 0.2 PPV. Groundborne noise and vibration impacts would be less than significant.

5.4.2 Operation Vibration

Project operation would not include any substantial sources of groundborne vibration. No vibration impacts would result from project operation.

6.0 Conclusions

6.1 Construction Noise

Site preparation and facility installation would include use of a variety of noise-generating equipment such as scrapers, excavators, loaders, and water trucks, along with others, would be used during each construction phase. As discussed in Section 5.1.1, due to the large size of the project site, average construction noise levels over the life of project construction (i.e. equal distribution of construction equipment noise across the site) would attenuate to 46 dB(A) $L_{eq(8h)}$ at the property line of the nearest residence. When construction activities are conducted in stages, some stages will be focused near the project site boundary, and higher construction noise levels would be expected. For example, if construction were focused in a 10-acre portion of the project site that is nearest to the single-family residence immediately west of the intersection of Drew Road and SR-98, construction noise levels would reach 58 dB(A) $L_{eq(8h)}$ at the property line of the residence. Project construction noise levels would comply with 75 dB(A) $L_{eq(8h)}$ noise level limit established by County Noise Element. Impacts would be less than significant.

6.2 Operations Noise

Stationary sources of noise associated with the operation of the project would include inverters, transformers, solar panel tracker motors, substation(s), and transmission gen-tie lines. Noise associated with project operation would attenuate to less than 50 dB(A) L_{eq} within the project site boundary. On-site generated noise would attenuate to 44 dB(A) L_{eq} at the nearest single-family residence immediately (west of the intersection of Drew Road and SR-98). Noise levels would not exceed applicable property line noise level limits from the

County General Plan Noise Element. Therefore, noise associated with project operations would be less than significant.

6.3 Operational Traffic Noise

During operations, project-generated traffic would increase volumes on local roadways and thereby increase traffic noise levels in the project area. Project trip generation would be extremely limited–up to 20 trips per day. Ambient noise level increases attributable to project-generated traffic are anticipated to be less than 3 dB(A) along all roadways. Impacts would be less than significant.

6.4 Vibration

6.4.1 Construction Vibration

Project construction would include the use of vibration-generating construction equipment such as large bulldozers, loaded trucks, jackhammers, and mast impact pile drivers. Vibration levels at the nearest structure would be anticipated to reach up to 0.073 PPV the nearest structure. As vibration levels would not exceed the vibration level threshold of 0.2 PPV groundborne noise and vibration impacts would be less than significant.

6.4.2 Operation Vibration

Project operation would not include any substantial sources of groundborne vibration. No vibration impacts would result from project operation.

7.0 References Cited

California Department of Transportation (Caltrans)
2013a Technical Noise Supplement. November.

2013b Transportation and Construction Vibration Guidance Manual. September.

Federal Highway Administration (FHWA)
2006 FHWA Roadway Construction Noise Model User's Guide, Final Report. January.

Federal Transit Administration (FTA)
2006 Transit Noise and Vibration Impact Assessment. Office of Planning and Environment. FTA-VA-90-1003-06. May.

ICF International
2010 Memorandum, Noise Levels for Single Axis Tracking Motors, Rosamond Solar Project, Kern County, California.

Imperial, County of
2015 Imperial County General Plan Noise Element. Approved October 6.

LOS Engineering, Inc.
2018 Drew Solar Farm Traffic Impact Analysis. February.

National Electrical Manufacturers Association (NEMA)
2013 NEMA TR 1-2013 Transformers, Step Voltage Regulators and Reactors.

Navcon Engineering, Inc.
2015 SoundPLAN Essential version 3.0. August.

Satcon
2008 PowerGate Plus Commercial Solar PV Inverters Brochure.

ATTACHMENTS

ATTACHMENT 1

Noise Measurement Data

Summary

Filename	LxT_Data.003
Serial Number	3828
Model	SoundExpert™ LxT
Firmware Version	2.301
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2017/12/05 14:27:08
Stop	2017/12/05 14:47:21
Duration	0:20:12.6
Run Time	0:20:12.6
Pause	0:00:00.0
Pre Calibration	2017/12/05 14:25:57
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	A Weighting
OBA Max Spectrum	At Lmax
Overload	121.8 dB

	A	C	Z
Under Range Peak	**78.0**	75.0	80.0 dB
Under Range Limit	**26.0**	25.2	32.0 dB
Noise Floor	16.3	16.1	22.0 dB

Results

LAeq	38.8 dB	
LAE	69.6 dB	
EA	1.020 µPa²h	
LApeak (max)	2017/12/05 14:44:10	75.0 dB
LASmax	2017/12/05 14:44:03	57.8 dB
LASmin	2017/12/05 14:36:59	28.4 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	38.8	38.8	-99.9	38.8	38.8	-99.9	-99.9

LCeq	58.6 dB
LAeq	38.8 dB
LCeq - LAeq	19.8 dB
LAleq	41.1 dB
LAeq	38.8 dB
LAleq - LAeq	2.3 dB
# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	0
OBA Overload Duration	0.0 s

Statistics

LAS5.00	42.2 dB
LAS10.00	40.2 dB
LAS33.30	36.5 dB
LAS50.00	35.1 dB
LAS66.60	33.9 dB
LAS90.00	30.2 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
Direct	2015/07/16 9:40:54	-26.0
Direct	2015/07/16 9:12:39	-26.0
PRMLxT1L	2017/12/05 14:25:56	-28.1
PRMLxT1L	2017/12/05 14:25:27	-28.1
PRMLxT1L	2017/09/28 18:44:16	-27.9
PRMLxT1L	2017/09/27 14:38:54	-28.0
PRMLxT1L	2017/09/27 14:38:34	-28.0
PRMLxT1L	2017/08/03 11:51:12	-28.1
PRMLxT1L	2017/08/03 11:50:34	-28.0
PRMLxT1L	2017/05/23 11:08:59	-28.0
PRMLxT1L	2017/05/23 10:03:03	-28.0
PRMLxT1L	2017/05/23 10:02:33	-28.0
PRMLxT1L	2017/05/23 10:02:08	-28.0

Summary

Filename	LxT_Data.004
Serial Number	3828
Model	SoundExpert™ LxT
Firmware Version	2.301
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2017/12/05 14:58:14
Stop	2017/12/05 15:18:15
Duration	0:20:01.0
Run Time	0:20:01.0
Pause	0:00:00.0
Pre Calibration	2017/12/05 14:57:48
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	A Weighting
OBA Max Spectrum	At Lmax
Overload	121.8 dB

	A	C	Z
Under Range Peak	**78.1**	75.1	80.1 dB
Under Range Limit	**26.0**	25.2	32.0 dB
Noise Floor	16.3	16.1	22.0 dB

Results

LAeq	60.0 dB	
LAE	90.8 dB	
EA	132.143 µPa²h	
LApeak (max)	2017/12/05 14:59:56	100.5 dB
LASmax	2017/12/05 15:11:08	80.8 dB
LASmin	2017/12/05 15:15:13	27.4 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	60.0	60.0	-99.9	60.0	60.0	-99.9	-99.9

LCeq	69.1 dB
LAeq	60.0 dB
LCeq - LAeq	9.2 dB
LAleq	63.1 dB
LAeq	60.0 dB
LAleq - LAeq	3.1 dB
# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	0
OBA Overload Duration	0.0 s

Statistics

LAS5.00	58.6 dB
LAS10.00	49.7 dB
LAS33.30	40.4 dB
LAS50.00	37.9 dB
LAS66.60	36.3 dB
LAS90.00	33.2 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
Direct	2015/07/16 9:40:54	-26.0
Direct	2015/07/16 9:12:39	-26.0
PRMLxT1L	2017/12/05 14:57:45	-28.1
PRMLxT1L	2017/12/05 14:49:46	-28.1
PRMLxT1L	2017/12/05 14:25:56	-28.1
PRMLxT1L	2017/12/05 14:25:27	-28.1
PRMLxT1L	2017/09/28 18:44:16	-27.9
PRMLxT1L	2017/09/27 14:38:54	-28.0
PRMLxT1L	2017/09/27 14:38:34	-28.0
PRMLxT1L	2017/08/03 11:51:12	-28.1
PRMLxT1L	2017/08/03 11:50:34	-28.0
PRMLxT1L	2017/05/23 11:08:59	-28.0
PRMLxT1L	2017/05/23 10:03:03	-28.0

Summary

Filename	LxT_Data.005
Serial Number	3828
Model	SoundExpert™ LxT
Firmware Version	2.301
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2017/12/05 15:30:41
Stop	2017/12/05 15:50:44
Duration	0:20:02.7
Run Time	0:20:02.7
Pause	0:00:00.0
Pre Calibration	2017/12/05 15:28:54
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	A Weighting
OBA Max Spectrum	At Lmax
Overload	121.8 dB

	A	**C**	**Z**
Under Range Peak	**78.1**	75.1	80.1 dB
Under Range Limit	**26.1**	25.2	32.1 dB
Noise Floor	16.3	16.1	22.0 dB

Results

LAeq	63.9 dB	
LAE	94.7 dB	
EA	325.813 µPa²h	
LApeak (max)	2017/12/05 15:44:44	103.6 dB
LASmax	2017/12/05 15:44:45	87.6 dB
LASmin	2017/12/05 15:38:40	27.3 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	1	2.4 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	63.9	63.9	-99.9	63.9	63.9	-99.9	-99.9

LCeq	70.6 dB
LAeq	63.9 dB
LCeq - LAeq	6.7 dB
LAleq	66.6 dB
LAeq	63.9 dB
LAleq - LAeq	2.7 dB
# Overloads	0
Overload Duration	0.0 s
# OBA Overloads	0
OBA Overload Duration	0.0 s

Statistics

LAS5.00	69.2 dB
LAS10.00	65.8 dB
LAS33.30	49.7 dB
LAS50.00	43.4 dB
LAS66.60	37.5 dB
LAS90.00	31.1 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
Direct	2015/07/16 9:40:54	-26.0
Direct	2015/07/16 9:12:39	-26.0
PRMLxT1L	2017/12/05 15:28:49	-28.1
PRMLxT1L	2017/12/05 15:20:11	-28.1
PRMLxT1L	2017/12/05 14:57:45	-28.1
PRMLxT1L	2017/12/05 14:49:46	-28.1
PRMLxT1L	2017/12/05 14:25:56	-28.1
PRMLxT1L	2017/12/05 14:25:27	-28.1
PRMLxT1L	2017/09/28 18:44:16	-27.9
PRMLxT1L	2017/09/27 14:38:54	-28.0
PRMLxT1L	2017/09/27 14:38:34	-28.0
PRMLxT1L	2017/08/03 11:51:12	-28.1
PRMLxT1L	2017/08/03 11:50:34	-28.0

Summary

Filename	LxT_Data.014
Serial Number	3827
Model	SoundExpert™ LxT
Firmware Version	2.301
User	
Location	
Job Description	
Note	
Measurement Description	
Start	2017/12/05 14:10:33
Stop	2017/12/06 15:08:06
Duration	1 Day 00:57:32.9
Run Time	1 Day 00:57:32.9
Pause	0:00:00.0
Pre Calibration	2017/12/05 14:07:38
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	A Weighting
OBA Max Spectrum	At Lmax
Overload	121.7 dB

	A	C	Z
Under Range Peak	**78.0**	75.0	80.0 dB
Under Range Limit	**26.0**	25.2	32.0 dB
Noise Floor	16.2	16.1	22.0 dB

Results

LAeq	43.2 dB	
LAE	92.8 dB	
EA	209.781 µPa²h	
LApeak (max)	2017/12/05 14:13:33	112.5 dB
LASmax	2017/12/05 14:13:33	76.1 dB
LASmin	2017/12/06 1:30:35	18.9 dB
SEA	-99.9 dB	

LAS > 85.0 dB (Exceedence Counts / Duration)	0	0.0 s
LAS > 115.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**	**LNight 22:00-07:00**
	46.8	44.5	39.1	46.9	45.3	35.4	39.1

LCeq	62.4 dB	
LAeq	43.2 dB	
LCeq - LAeq	19.2 dB	
LAleq	50.7 dB	
LAeq	43.2 dB	
LAleq - LAeq	7.5 dB	
# Overloads	0	
Overload Duration	0.0 s	
# OBA Overloads	0	
OBA Overload Duration	0.0 s	

Statistics

LAS5.00	47.9 dB
LAS10.00	44.6 dB
LAS33.30	36.8 dB
LAS50.00	33.2 dB
LAS66.60	29.2 dB
LAS90.00	22.3 dB

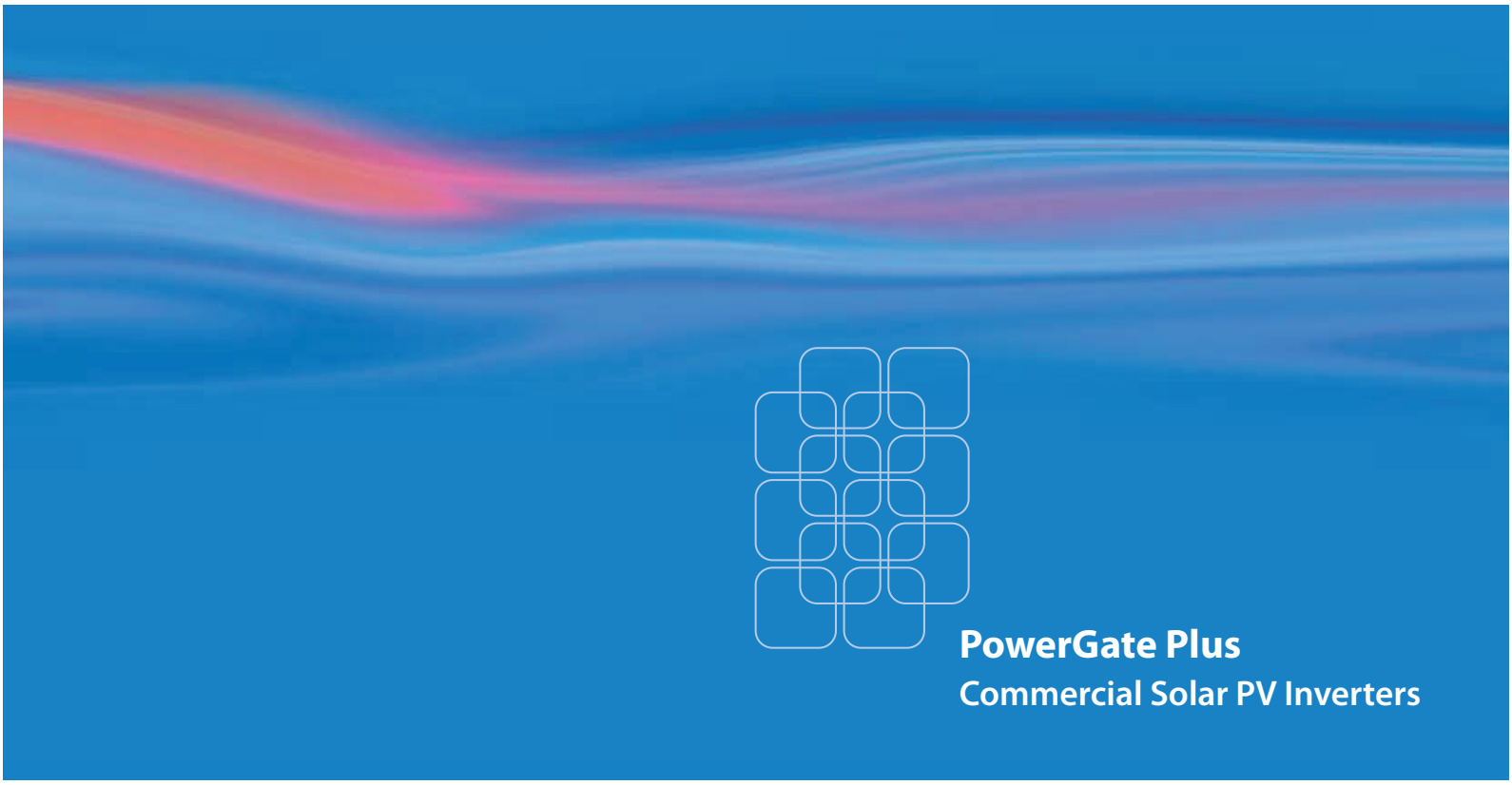
Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
Direct	2016/12/05 8:48:15	-26.0
Direct	2016/12/05 8:20:31	-26.0
Direct	2016/12/05 7:57:36	-26.0
PRMLxT1	2015/06/01 14:58:37	-50.8
PRMLxT1	2015/06/01 14:58:10	-50.8
PRMLxT1	2015/03/23 12:06:20	-50.8
PRMLxT1	2015/03/03 13:49:49	-50.9
PRMLxT1	2015/03/03 13:28:13	-50.6
PRMLxT1	2015/03/03 13:27:59	-50.6
PRMLxT1	2015/03/03 13:27:25	-50.7
PRMLxT1	2015/03/03 13:27:10	-50.7
PRMLxT1	2015/03/03 13:26:55	-50.7
PRMLxT1	2015/03/03 13:26:42	-50.6
PRMLxT1	2015/03/03 13:26:28	-50.6
PRMLxT1L	2017/12/05 14:07:38	-28.0
PRMLxT1L	2017/09/28 18:26:44	-28.0
PRMLxT1L	2017/09/27 15:43:37	-27.9
PRMLxT1L	2017/09/27 15:43:15	-27.9
PRMLxT1L	2017/09/19 13:38:18	-28.0
PRMLxT1L	2017/09/19 13:17:29	-27.8
PRMLxT1L	2017/09/19 13:00:16	-27.9
PRMLxT1L	2017/09/19 12:39:38	-28.0
PRMLxT1L	2017/09/19 12:25:16	-28.0
PRMLxT1L	2017/09/19 12:04:27	-28.1
PRMLxT1L	2017/08/30 12:21:00	-28.0

ATTACHMENT 2

Sample Inverter Data

Satcon™



PowerGate Plus

Commercial Solar PV Inverters

Clean power.

PowerGate Plus

Making PV Power Profitable

The rate of return on your solar photovoltaic investment is tied directly to performance—the more power your system can harvest and convert efficiently, the shorter your payback period will be.

Satcon® PowerGate® Plus solar PV inverters have a significant impact on the profitability dynamic of commercial- and utility-scale solar PV systems. With their unparalleled system intelligence, next-generation Edge™ MPPT technology, and industrial-grade engineering, PowerGate Plus inverters provide rugged and reliable solutions that maximize system uptime and power production, even in the harshest environments.

Rugged and Reliable

Streamlined Design

With all components encased in a single, space-saving enclosure, PowerGate Plus PV inverters are easy to install, operate, and maintain.

Single Cabinet with Small Footprint

- No clearance required for sides and back
- Convenient access to all components
- Large in-floor cable glands make access to DC and AC cables easy

Rugged Construction

- Engineered for outdoor environments
- Proprietary enclosure made of G-90 galvanized steel for longevity

Output Transformer

- Provides galvanic isolation
- Matches the output voltage of the PV inverter to the grid
- High-speed anti-islanding algorithm
- Transformer built in; standalone transformer available as an option

Quiet Operation

- 65 dB(A) standard
- 55 dB(A) optional

PowerGate Plus Solar PV Inverters

Commercial and Utility Scale

The world's largest solar power installations depend on Satcon PowerGate Plus PV inverters to provide efficient and stable power—even in the harshest climates.

Broad Range of Power Ratings

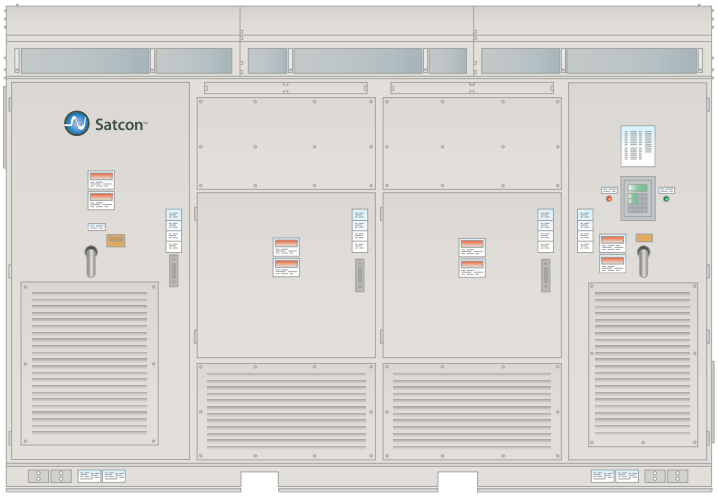
With 11 power ratings—ranging from 30 kW to 1 MW (UL and CE certified)—Satcon offers the widest range of solar PV inverter solutions in the industry.

Advanced, Rugged, and Reliable

Engineered from the ground up to meet the demands of large-scale installations, Satcon PV inverters feature an outdoor-rated enclosure, advanced monitoring and control capabilities, and Edge,™ Satcon's next-generation MPPT solution.

History of Innovation

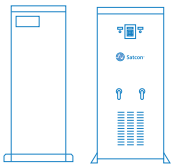
The proven leader in solar PV inverter solutions for commercial installations, Satcon sets the standards for efficient large-scale power conversion. From the introduction of the first single-cabinet PV inverter, to the first high-efficiency power conditioning system for commercial PV inverters, to the groundbreaking 1 MW PV inverter—Satcon continues to lead the way.



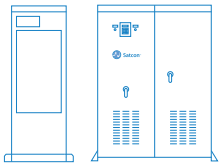
PowerGate Plus 500 kW

Wide Range of Power Ratings

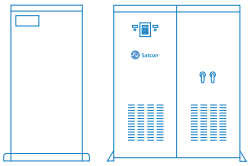
PowerGate Plus Models



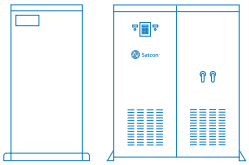
PowerGate Plus 30 kW



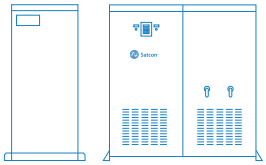
PowerGate Plus 50 kW



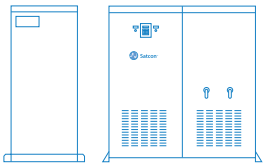
PowerGate Plus 75 kW



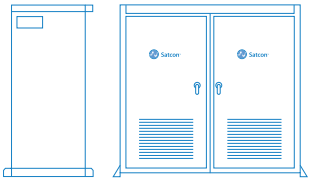
PowerGate Plus 100 kW



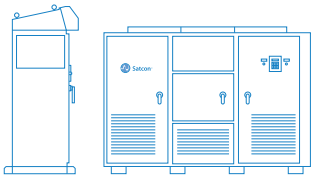
PowerGate 135 kW



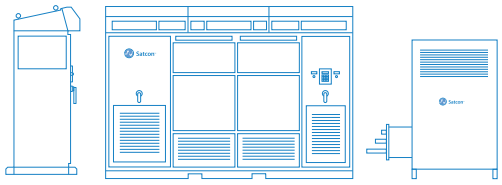
PowerGate Plus 150 kW



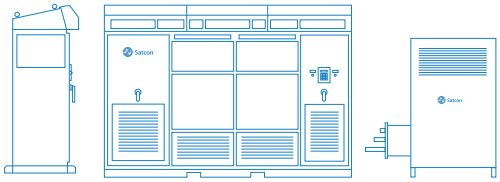
PowerGate 225 kW



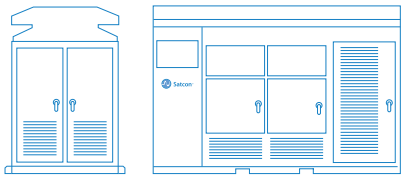
PowerGate Plus 250 kW



PowerGate Plus 375 kW



PowerGate Plus 500 kW



PowerGate Plus 1 MW
(External Transformer Required)

Proven Reliability

Rugged and reliable, PowerGate Plus PV inverters are engineered from the ground up to meet the demands of large-scale installations.

Low Maintenance

- Proven track record of reliable performance
- Modular components make service efficient
- Dual cooling fans

Safety

- Seismic Zone 4 compliant
- Built-in DC and AC disconnect switches
- Integrated DC two-pole disconnect switch isolates the inverter (with the exception of the GFDI circuit) from the photovoltaic power system to allow inspection and maintenance
- Built-in isolation transformer
- Protective cover over exposed power connections

Testing and Certification

- UL1741
- CSA 107.1-01
- IEEE 1547
- IEEE C62.41.2

Warranty

- Five years (standard)
- Extended service agreement (optional)

Performance Optimization

+20%

Unparalleled Performance

With 11 power ratings—ranging from 30 kW to 1 MW—Satcon offers the widest range of solar PV inverter solutions in the industry, enabling you to closely match array capacities and achieve maximum energy throughput.

Edge MPPT

- Features a proprietary maximum power point tracking (MPPT) system
- Provides rapid and accurate control
- Improves performance by up to 20%, even in challenging climate conditions
- Boosts overall PV plant kilowatt yield
- Provides a wide range of operation across all photovoltaic cell technologies, including thin film, monocrystalline, and polycrystalline PV panels

Power and Efficiency Ratings

- Eleven power ratings, ranging from 30 kW to 1 MW (UL and CE certified)
- CEC efficiency rating:
  97% to 98% (without transformer)
  96% to 97% (with transformer)
- CE efficiency rating:
  97% to 98% (without transformer)
- Ambient temperature range: -20° C (-4° F) to 50° C (122° F)
- Full array nameplate power rating maintained throughout the entire MPPT DC voltage range
- Superior dynamic performance in cloudy conditions

DC Inputs at Full Power

- 305–320V DC to more than 600V DC
- 420V DC to 850V DC

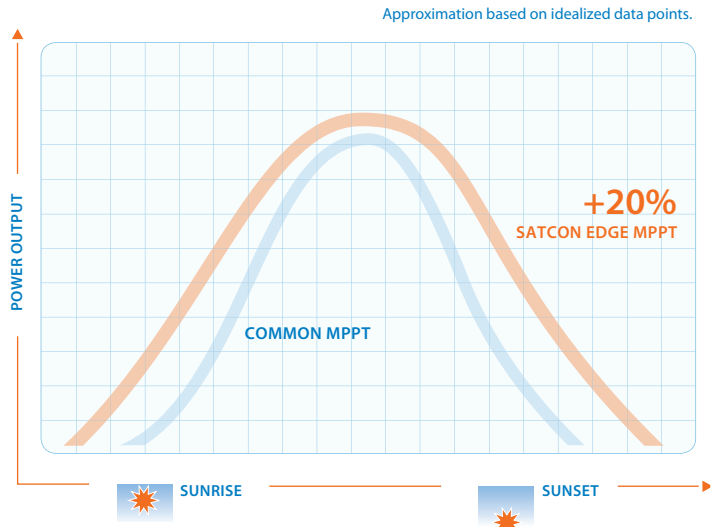
Printed Circuit Board Durability

- Wide thermal operating range: -40° C (-40° F) to 85° C (185° F)
- Conformal coated to withstand extreme humidity and air-pollution levels

Satcon Edge MPPT

Boost PV plant yield up to 20 percent.

At the heart of PowerGate Plus is Edge, Satcon's next-generation power optimization solution. With rapid and accurate MPPT control, Edge increases PV plant kilowatt yield up to 20 percent by extending the production window of arrays, enabling them to operate at optimal voltage and current levels for longer periods of time—even in varied sun conditions. To maximize efficiency, Edge improves the performance of all PV technologies, including fixed and tracking solar arrays, enabling you to get the most from your investment.



Optimize voltage and current, even in harsh climates.

Edge achieves full nameplate power ratings across the entire MPPT DC voltage range. By optimizing output at the lowest end of the DC voltage range without limiting full kilowatt yield, Edge ensures that your PV system delivers maximum throughput, across all photovoltaic cell technologies, including thin film, monocrystalline, and polycrystalline PV panels. Rugged operating temperature ratings—up to 50° C (122° F)—enable PowerGate Plus PV inverters to achieve maximum efficiency, even when DC voltage output is at its lowest.

Maximize system throughput from end to end.

Edge accommodates a wide range of solar array input voltages—from 305–320V DC to more than 600V DC and from 420V DC to 850V DC—and converts DC power to grid-compatible AC power with unparalleled efficiency. With PowerGate Plus, you'll achieve maximum throughput and optimized performance—from the array to the grid.

Satcon PV View Plus

Monitor and control system performance and increase ROI.

Uptime, output, and overall profitability are dramatically reduced when system performance issues go unnoticed. To maximize efficiency, you need a comprehensive view of the array's performance—critical information that will help your team identify issues, improve throughput, and increase system uptime.

With Satcon PV View® Plus, an advanced layer of intelligence is added to PowerGate Plus, giving you complete visibility into and control over the variables that affect energy conversion. Real-time data acquisition and performance monitoring make it easy to assess array output, evaluate site conditions, pinpoint problems, and identify maintenance needs rapidly—before performance is compromised.

Manage your entire system through a single dashboard.

Using real-time sensing, PV View Plus monitors, analyzes, and delivers critical performance information through a centralized dashboard. By aggregating data, PV View Plus establishes benchmarks for normal performance, predicts anomalies, and provides system health information, making it easy to keep your PV plant operating at peak performance.

Intelligent Insight

With Satcon PV View Plus, you have unparalleled access to the critical information you need to keep your PV plant running at its peak efficiency.

Variables Monitored

- Solar array power production (digital display that shows AC voltage, current, kVA, kVAR, and kW)
- Power and energy output
- Greenhouse gasses (emissions avoidance)
- Inverter status
- Inverter faults history
- AC grid conditions
- Weather station data
- Photovoltaic system performance

Real-Time Sensing

- Air temperature
- PV array cell temperature
- Irradiance
- Wind speed and direction

Third-Party Compatibility

PowerGate Plus PV inverters are also compatible with leading third-party monitoring systems

Satcon. The standard for clean power.

www.satcon.com/go/powergateplus

PowerGate Plus Solar PV Inverters

Specifications			30 kW	50 kW	75 kW	100 kW	135 kW	150 kW	225 kW	250 kW	375 kW	500 kW	1 MW
Full-Power MPPT DC Input Range (V DC)	US	305–600	o	o									
		315–600			o	o							
		320–600					o		o	o	o	o	
	EU	430–850				o		o		o		o	o
Low Voltage Tap Line[1]		20%	o	o	o	o	o	o	o	o	o	o	
Maximum Voc (V DC)	UL	600	o	o	o	o	o		o	o	o	o	
	CE	900				o		o		o		o	o
Nominal Frequency Range (Hz)	US	59.5–60.5	o	o	o	o	o		o	o	o	o	o
	EU	49.5–50.5				o		o		o		o	o
AC Voltage Range Set Points		+/- 10%	o	o	o	o	o	o	o	o	o	o	o
Power Factor = Unity		>0.99	o	o	o	o	o	o	o	o	o	o	o
Harmonic Distortion		<3% THD	o	o	o	o	o	o	o	o	o	o	o
Efficiency w/ Transformer (CEC)		95%	o										
		95.5%		o					o				
		96%–97%			o	o	o	o		o	o	o	
Efficiency w/o Transformer		97%–98%						o		o		o	o
Forced Air Cooling			o	o	o	o	o	o	o	o	o	o	o
Noise Level		<65 dB(A)	o	o	o	o	o	o	o	o	o	o	o
Ambient Temperature Range (° C)		-20 to +50	o	o	o	o	o	o	o	o	o	o	o
Enclosure Rating		NEMA 3R	o	o	o	o	o	o	o	o	o	o	o
Cabinet Finish (16-Gauge, Powder-Coated Steel)			o	o	o	o		o		o	o	o	o
Base and Door Finish (14-Gauge Powder-Coated Steel)			o	o	o	o		o		o	o	o	o
Cabinet, Base, and Door Finish (11-Gauge, Powder-Coated Steel)							o		o				
Seismic Rating		Zone 4	o	o	o	o	o	o	o	o	o	o	o

[1] Accommodates low solar array voltages by reducing minimum input voltage requirements by 20%.

o Standard o Optional Specifications are subject to change without notice.

Satcon™
Clean power.

Satcon Corporate
27 Drydock Avenue
Boston, MA 02210
P 617.897.2400
F 617.897.2401
E sales@satcon.com

Satcon West
2925 Bayview Drive
Fremont, CA 94539
P 510.226.3800
F 510.226.3801
E sales@satcon.com

Satcon Canada
835 Harrington Court
Burlington, ON L7N 3P3
Canada
P 905.639.4692
F 905.639.0961
E sales@satcon.com

Satcon Spain
Príncipe de Vergara 93 - 1º
28006 Madrid, Spain
P 34 917610275
F 34 915612987
E sales@satcon.com

ATTACHMENT 3

NEMA Standards

NEMA TR 1-2013

Transformers, Step Voltage Regulators and Reactors

Published by:

National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, VA 22209

NOTICE AND DISCLAIMER

The information in this publication was considered technically sound by a consensus among persons engaged in its development at the time it was approved. Consensus does not necessarily mean there was unanimous agreement among every person participating in the development process.

The National Electrical Manufacturers Association (NEMA) standards and guideline publications, of which the document herein is one, are developed through a voluntary standards development process. This process brings together volunteers and/or seeks out the views of persons who have an interest in the topic covered by this publication. Although NEMA administers the process and establishes rules to promote fairness in the development of consensus, it does not write the documents, nor does it independently test, evaluate, or verify the accuracy or completeness of any information or the soundness of any judgments contained in its standards and guideline publications.

NEMA disclaims liability for any personal injury, property, or other damages of any nature, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, application, or reliance on this document. NEMA disclaims and makes no guaranty or warranty, express or implied, as to the accuracy or completeness of any information published herein, and disclaims and makes no warranty that the information in this document will fulfill any particular purpose(s) or need(s). NEMA does not undertake to guarantee the performance of any individual manufacturers or seller's products or services by virtue of this standard or guide.

In publishing and making this document available, NEMA is not undertaking to render professional or other services for or on behalf of any person or entity, nor is NEMA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstance. Information and other standards on the topic covered by this publication may be available from other sources, which the user may wish to consult for additional views or information not covered by this publication.

NEMA has no power, nor does it undertake to police or enforce compliance with the contents of this document. NEMA does not certify, test, or inspect products, designs, or installations for safety or health purposes. Any certification or other statement of compliance with any health- or safety-related information in this document shall not be attributable to NEMA and is solely the responsibility of the certifier or maker of the statement.

FOREWORD

This foreword is not part of NEMA TR1-2013 Transformers, Step Voltage Regulators, and Reactors.

The standards appearing in this publication have been developed by the Transformer Section and have been approved for publication by the National Electrical Manufacturers Association. They are used by the electrical industry to promote production economies and to assist users in the proper selection of transformers.

The Transformer Section is working actively with the IEEE Committee, C57 on Transformers, Regulators, and Reactors, in the development, correlation, and maintenance of national standards for transformers. This Committee operates under the procedures both the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE).

It is the policy of the NEMA Transformer Section to remove material from the NEMA standards publication as it is adopted and published in the IEEE C57 series standards. The NEMA standards publication for Transformers, Regulators, and Reactors references these and other American National Standards applying to transformers, and is intended to supplement without duplication both the American National and IEEE standards.

The NEMA standards publication for Transformers, Regulators and Reactors contains provision for the following:

a. IEEE and American National Standards adopted by reference and applicable exceptions approved by NEMA if any.
b. NEMA Official Standards Proposals—These are official drafts of proposed standards developed within NEMA or in cooperation with other interested organizations, for consideration by ANSI and IEEE. They have a maximum life of ten years, during which time they must be revised as American National Standards, IEEE standards, or adopted as NEMA standards, or rescinded.
c. Manufacturing Standards—These are NEMA standards which are primarily of interest to the manufacturers of transformers and which are not yet included in an American National or IEEE standards.
d. Standards Which Are Controversial—These are NEMA standards, on which there is a difference of opinion within Committee C57. The NEMA version will be included in the NEMA standards publication until such time as the differences between ANSI, IEEE, and NEMA are resolved.

NEMA standards publications are subject to periodic review and take into consideration user input. They are being revised constantly to meet changing economic conditions and technical progress. Users should secure latest editions. Proposed or recommended revisions should be submitted to:

Senior Technical Director, Operations
National Electrical Manufacturers Association
1700 13th Street, Suite 900
Rosslyn, VA 22209

This standards publication was developed by the Transformer Products Section of the National Electrical Manufacturers Association. Section Approval of the standard does not necessarily imply that all section members voted for its approval or participated in its development. At the time it was approved, the Section was composed of the following members:

ABB, Inc.	Raleigh, NC
CG Power Systems USA Inc.	Washington, MO
Cooper Power Systems by Eaton	Cleveland, OH
Federal Pacific	Bristol, VA
General Electric	Fairfield, CT
Hammond Power Solutions, Inc.	Guelph, Ontario
L-3 Communications Power Paragon	Anaheim, CA
MGM Transformer Company	Commerce, CA
Mirus International Inc	Brampton, Ontario
Niagara Transformer Corporation	Buffalo, NY
ONYX Power Inc.	Santa Ana, CA
Power Quality International Corp.	Odessa, FL
Powersmiths International Corp.	Brampton, Ontario
Schneider Electric	Palatine, IL
Siemens Industry	Norcross, GA
SolaHD	Rosemont, IL
SPX Transformers	Waukesha, WI
VanTran Industries	Waco, TX
WEG Electric Corp.	Duluth, GA

SCOPE

This standards publication applies to single phase and poly phase power and distribution transformers (including step-voltage regulators and reactors). This standard excludes dry type transformers covered by NEMA ST20. This publication provides a reference list of applicable ANSI and IEEE C57 standards.

In addition, this publication includes certain NEMA standard test methods, test codes, properties, etc. of liquid-immersed transformers, step-voltage regulators, and reactors that are not IEEE standards.

TABLE OF CONTENTS

TABLES

PART 0
GENERAL

The following IEEE and 10 CFR standards are applicable references and should be inserted in this Part 0:

IEEE Std. C57.12.00-2010	*IEEE Standard for General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers*
IEEE Std. C57.12.01-2005	*IEEE Standard General Requirements for Dry-Type Distribution and Power Transformers including those with Solid-Cast and/or Resin-Encapsulated windings*
IEEE Std. C57.12.10-2010	*IEEE Standard Requirement for Liquid-Immersed Power Transformers*
IEEE Std. C57.12.70-2011	*IEEE Standard for Standard Terminal Markings and Connections for Distribution and Power Transformers*
IEEE Std. C57.12.90-2010	*IEEE Standard Test Code for Liquid-immersed Distribution, Power & Regulating Transformers*
IEEE Std. C57.12.90-2011	*IEEE Standard Test Code for Dry-Type Distribution and Power Transformers*
IEEE Std. C57.19.00-2004	*IEEE Standard General Requirements and Test Procedure for Power Apparatus Bushings*
IEEE Std. C57.19.01-2000	*IEEE Standard Performance Characteristics & Dimensions for Outdoor Apparatus Bushings*
IEEE Std. C57.91-2011	*IEEE Guide for Loading Mineral-oil-immersed Transformers and Step-Voltage Regulators*
10 CFR 429	*Part 429-Certification, Compliance, and Enforcement for Consumer Products and Commercial and Industrial Equipment*
10 CFR 431	*Part 431- Energy Efficiency Program for Certain Commercial and Industrial Equipment*

The NEMA standards TR 1-0.01 through TR 1-0.03 on the following pages (see Part 0, Pages 2-3) also generally apply to transformers.

0.01 PREFERRED VOLTAGE RATINGS

Preferred system voltages and corresponding transformer voltage ratings are given in the American National Standard for Electric Power Systems and Equipment-Voltage Ratings (60 Hz); C84.1-2011. It is recommended that these ratings be used as a guide in the purchase and operation of transformers.

0.02 PREFERRED FORCED-AIR AND FORCED-LIQUID RATINGS

Preferred forced-air and forced-liquid ratings are given in section 4 Table 1 of IEEE Std. C57.12.00-2010. It is recommended that these ratings be used as a guide in the purchase and operation of transformers.

0.03 AUDIBLE SOUND LEVELS

Transformers shall be so designed that the average sound level will not exceed the values given in Tables 0-1 through 0-2 when measured at the factory in accordance with the conditions outlined in IEEE Std. C57.12.90-2010.

The guaranteed sound levels should continue to be per Tables 1 through 2 until such time as enough data on measured noise power levels becomes available.

Sound pressure levels are established and published in this document. Sound power may be calculated from sound pressure using the method described in C57.12.90-2010.

Rectifier, railway, furnace, grounding, mobile and mobile unit substation transformers are not covered by the tables. The tables do not apply during operation “of” on load tap changers in power transformers and step-voltage regulators.

For audible sound levels of dry-type transformers 15000-Volt nominal system voltage and below the tables listed in the IEEE C57.12.01 standard are applicable references.

Table 1
AUDIBLE SOUND LEVELS FOR OIL-IMMERSED POWER TRANSFORMERS

Average Sound Level tt. Decibels	Equivalent Two-Winding Rating*																	
	350 kV BIL and Below			450, 550, 650 kV BIL			750 and 825 kV BIL			900 and 1050 kV BIL			1175 kV BIL			1300 kV BIL. and Above		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
57	700																	
58	1000																	
59				700														
60	1500			1000														
61	2000																	
62	2500			1500														
63	3000			2000														
64	4000			2500														
65	5000			3000														
66	6000			4000			3000											
67	7500	6250▲▲		5000	3750▲▲		4000	3125▲▲										
68	10000	7500		6000	5000		5000	3750										
60	12500	9375		7500	6250		6000	5000										
70	15000	12500		10000	7500		7500	6250										
71	20000	16667		12500	9375		10000	7500										
72	25000	20000	20800	15000	12500		12500	9375										
73	30000	26667	25000	20000	16667		15000	12500		12500								
74	40000	33333	33333	25000	20000	20800	20000	16667		15000			12500					
75	50000	40000	41687	30000	26667	25000	25000	20000	20800	20000	16667		15000			12500		
76	60000	53333	50000	40000	33333	33333	30000	26667	25000	25000	20000	20800	20000	16667		15000		
77	80000	66687	66667	50000	40000	41667	40000	33333	33333	30000	26667	25000	25000	20000	20800	20000	16667	
78	100000	80000	83333	60000	53333	50000	50000	40000	41667	40000	33333	33333	30000	26667	25000	25000	20000	20800
79		106667	100000	80000	66667	66667	60000	53333	50000	50000	40000	41667	40000	33333	33333	30000	26667	25000
80		133333	133333	100000	60000	83333	80000	66667	66667	60000	53333	50000	50000	40000	41667	40000	33333	33333
81			166667		106667	100000	100000	80000	83333	80000	66667	66667	60000	53333	50000	50000	40000	41667
82			200000		133333	133333		106867	100000	100000	80000	83333	80000	66667	66667	60000	53333	50000
83			250000			166667		133333	133333		10686	100000	100000	80000	83333	80000	66667	68667
84			300000			200000			166667		13333	133333		106667	100000	100000	80000	83333
85			400000			250000			200000			166667		133333	133333		106667	100000
86						300000			250000			200000			166667		133333	133333
87						400000			300000			250000			200000			168667
88									400000			300000			250000			200000
89												400000			300000			250000
90															400000			300000
91																		400000

Column 1 • Class*ONAN. ONWN and OFWF Rating*
Column 2 • Class* ONAF and ODAF First stage Auxiliary Cooling"t
Column 3 • Straight OFAF Ratings, ONAF * and ODAF * Second stage Auxiliary Cooling"t'
Classes of cooling, see section 5.1 IEEE Std.. C57.12-2010

"First- and second stage auxiliary cooling, see section 4 Table 1 of IEEE Std.. C57-12-2010
f For column 2 and 3 ratings, the sound levels are with the auxiliary cooling equipment in operation.
tf For intermediate kVA ratings, use the average sound level of the next larger kVA rating.
▲The equivalent two-winding 55ºC or 65ºC rating is defined as one-half the sum of the kVA rating of all windings
▲▲ Sixtv-seven decibels for all kVA ratings equal to this or smaller.

Table 2
AUDIBLE SOUND LEVELS FOR LIQUID-IMMERSED NETWORK TRANSFORMERS AND STEP-VOLTAGE REGULATORS

Equivalent Two-Winding kVA	Average Sound Level Decibels
0-50	48
51-100	51
101-300	55
301-500	56
501-750	57
751-1000	58
1001-1500	60
1501-2000	61
2001-2500	62
2501-3000	63

PART 1
POWER TRANSFORMERS

The IEEE Std. C57.12.10-2010 is an applicable reference standard for power transformers and should be inserted in this Part 1.

The IEEE Std. C57.91-2011 is an applicable reference standard and should be inserted in this Part 1.

The following other parts of this edition of NEMA TR 1 shall also apply for power transformers.

a. Part 0 General
b. Part 9 Terminology
c. Part 10 Test Code

PART 2
SUBSTATION AND DISTRIBUTION STEP- VOLTAGE REGULATORS

The following IEEE standards are applicable references for substation and distribution step-voltage regulators and should be inserted in this Part 2:

IEEE Std. C57.15-2009	*IEEE Standard Requirements, Terminology, and Test Code for Step-Voltage Regulators*
IEEE Std. C37.90-1-2012	*IEEE Standard for Surge Withstand Capability (SWC) Tests for Relays and Relay Systems Associated with Electric Power Apparatus*
IEEE Std. C37.90.2-2004 (R2010)	*IEEE Standard for Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers*
IEEE Std. C37.90.3-2001	*IEEE Standard Electrostatic Discharge Tests for Protective Relays*
IEEE Std. C57.12.31-2010	*IEEE Standard for Pole-Mounted Equipment--Enclosure Integrity*
IEEE Std C57.91-2011	*IEEE Guide for Loading Mineral-Oil-Immersed Transformers and Step-Voltage Regulators*
IEEE Std. C57.98-2011	*IEEE Guide for Transformer Impulse Tests*
IEEE Std. C57.131-2012	*IEEE Standard Requirements for Tap Changers*

PART 3
DISTRIBUTION TRANSFORMERS

The following IEEE Standards are applicable references for distribution transformers and should be inserted in this Part 3:

IEEE Std. C57.12.20-2011	*IEEE Standard for Overhead-Type Distribution Transformers, 500 kVA and Smaller: High Voltage, 34500 Volts and Below; Low Voltage, 7970/13800Y Volts and Below*
IEEE Std. C57.12.23-2009	*IEEE Standard for Submersible Single-Phase Transformers: 167 kVA and Smaller, High-Voltage 25000 V and Below; Low-Voltage 600 V and Below*
IEEE Std. C57.12.24-2009	*IEEE Standard for Submersible, Three-Phase Transformers, 3750 kVA and Smaller: High Voltage, 34500 GrdY/19920 Volts and Below; Low Voltage, 600 Volts and Below*
IEEE Std. C57.12.29™-2005	*IEEE Standard for Pad-Mounted Equipment-Enclosure Integrity for Coastal Environments*
IEEE Std. C57.12.30™-2010	*IEEE Standard for Pole-Mounted Equipment-Enclosure Integrity for Coastal Environments*
IEEE Std. C57.12.31™-2002	*IEEE Standard for Pole-Mounted Equipment-Enclosure Integrity*
IEEE Std. C57.12.32™-2002 (R2008)	*IEEE Standard for Submersible Equipment- Enclosure Integrity*
IEEE Std. C57.12.34™-2009	*IEEE Standard for Requirements for Pad-Mounted, Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers, 5 MVA and Smaller; High Voltage, 34.5 kV Nominal System Voltage and Below; Low Voltage, 15 kV Nominal System Voltage and Below.*
IEEE Std. C57.12.35™-2007	*IEEE Standard for Bar Coding for Distribution Transformers and Step-Voltage Regulators*
IEEE Std. C57.12.36™-2007	*IEEE Standard Requirements for Liquid-Immersed Distribution Substation Transformers*
IEEE Std. C57.12.38™-2009	*IEEE Standard for Pad-Mounted-Type, Self-Cooled, Single-Phase Distribution Transformers; High Voltage, 34 500 GrdY/19 920 V and below, Low Voltage, 240/120 V; 167 kVA and smaller*
IEEE Std. C57.105™-1978 (R2008)	*IEEE Guide for Application of Transformer Connections in Three-Phase Distribution Systems*

The following other parts of this edition of NEMA TR 1 shall apply for distribution transformers:

a. Part 0 General
b. Part 9 Terminology
c. Part 10 Test Code

3.01 DESIGN TEST FOR ENCLOSURE SECURITY OF PADMOUNTED COMPARTMENTAL TRANSFORMERS

The following IEEE standards provide a means for evaluating the security of enclosures for transformers.

IEEE Std. C57.12.28™-2009 *IEEE Standard for Pad-Mounted Equipment - Enclosure Integrity*

IEEE Std. C57.12.34™-2009 *IEEE Standard for Requirements for Pad-Mounted, Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers, 5 MVA and Smaller; High Voltage, 34.5 kV Nominal System Voltage and Below; Low Voltage, 15 kV Nominal System Voltage and Below.*

IEEE Std. C57.12.38™-2009 *IEEE Standard for Pad-Mounted-Type, Self-Cooled, Single-Phase Distribution Transformers; High Voltage, 34 500 GrdY/19 920 V and Below, Low Voltage, 240/120 V; 167 kVA and Smaller*

Part 4
SECONDARY NETWORK TRANSFORMERS

The American National Standard Requirements for C57.12.40-2011 *Secondary Network Transformers, Subway and Vault Types (Liquid Immersed)*, (with the exception of paragraphs 5.5.4 and 11.5.2 on finishes) is an applicable reference for secondary network transformers and should be inserted in this Part 3.

The following other parts of this edition of NEMA TR 1 shall also apply for secondary network transformers.

a. Part 0 General
b. Part 9 Terminology
c. Part 10 Test Code

Part 5
DRY-TYPE TRANSFORMERS

The following IEEE/NEMA standards are applicable references for dry-type transformers and should be inserted in this Part 4:

IEEE Std. C57.12.01 -2005	*IEEE Standard General Requirements for Dry-Type Distribution and Power Transformers Including Those with Solid Cast and/or Resin-Encapsulated Windings*
IEEE Std. C57.12.91-2011	*IEEE Standard Test Code for Dry-Type Distribution and Power Transformers*
IEEE Std. C57.12.50-1998	*Requirements for Ventilated Dry-Type Distribution Transformers, 1 to 500 kVA, Single-Phase; and 15 to 500 kVA, Three-Phase; With High-Voltage 601-34500 Volts, Low-Voltage 120-600 Volts*
IEEE Std. C57.12.51-2008	*IEEE Standard for Ventilated Dry-Type Power Transformers, 501 kVA and Larger, Three-Phase, With High-Voltage 601-34500 Volts, Low-Voltage 208Y/120V to 4160V-General Requirements*
IEEE Std. C57.12.52-2012	*IEEE Standard for Sealed Dry-Type Power Transformers, 501 kVA and Larger, Three-Phase, With High-Voltage 601-34500 Volts, Low-Voltage 208Y/120V to 4160V-General Requirements*
IEEE Std. C57.94-1982 (R2006)	*IEEE Recommended Practices for Installation, Application, Operation and Maintenance of Dry-Type General Purpose Distribution and Power Transformers*
IEEE Std. C57.96-1989 (R2004)	*Guide for Loading Dry-Type Distribution and Power Transformers*
NEMA ST 20	*Dry Type Transformers for General Applications*

Part 6
SUBSTATION TRANSFORMERS

The following other parts of this edition of NEMA TR 1 shall also apply for substation transformers.

a. Part 0 General
b. Part 9 Terminology
c. Part 10 Test Code

PART 7
ARC FURNACE TRANSFORMERS

The following other parts of this edition of NEMA TR 1 shall also apply for arc furnace transformers.

a. Part 0 General
b. Part 9 Terminology
c. Part 10 Test Code

PART 8
SHUNT REACTORS

The IEEE Std. C57.21-2008 is an applicable reference and should be inserted in this Part 8.

To facilitate safe and effective operation and consistency of reporting for all shunt reactor transformers, it is recommended that the information listed this IEEE standard be included in the test report for every shunt reactor transformer.

PART 9
TERMINOLOGY

The ANSI/IEEE Std. C57.12.80-2010 is an applicable reference for terminology and should be inserted in this Part 9.

PART 10
TEST CODE

The following IEEE standards are applicable references for transformer test codes and should be inserted in this Part 10:

IEEE Std. C57.12.90™-2010 *IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers*

IEEE Std. C57.12.91-2011 *IEEE Standard Test Code for Dry-Type Distribution and Power Transformers*

IEEE Std. C57.13™-2008 *IEEE Standard Requirements for Instrument Transformers*

IEEE Std. C57.98™-2011 *IEEE Guide for Transformer Impulse Tests*

To facilitate safe and effective operation and consistency of reporting for all power and distribution transformers, it is recommended that the information listed in the IEEE Std. C57.12.00-2010, section 8.7 be included in the test report for every transformer.

ATTACHMENT 4

Noise Modeling Parameters

Source name	Reference	Level		Corrections		
		Day	Night	Kwall	CI	CT
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Substation	Unit	97.0	-	-	-	-
Inverter1	Unit	77.0	-	-	-	-
Inverter2	Unit	77.0	-	-	-	-
Inverter3	Unit	77.0	-	-	-	-
Inverter4	Unit	77.0	-	-	-	-
Inverter5	Unit	77.0	-	-	-	-
Inverter6	Unit	77.0	-	-	-	-
Inverter7	Unit	77.0	-	-	-	-
Inverter8	Unit	77.0	-	-	-	-
Inverter9	Unit	77.0	-	-	-	-
Inverter10	Unit	77.0	-	-	-	-
Inverter11	Unit	77.0	-	-	-	-
Inverter12	Unit	77.0	-	-	-	-
Inverter13	Unit	77.0	-	-	-	-
Inverter14	Unit	77.0	-	-	-	-
Inverter15	Unit	77.0	-	-	-	-
Inverter16	Unit	77.0	-	-	-	-
Inverter17	Unit	77.0	-	-	-	-
Inverter18	Unit	77.0	-	-	-	-
Inverter19	Unit	77.0	-	-	-	-
Inverter20	Unit	77.0	-	-	-	-
Inverter21	Unit	77.0	-	-	-	-
Inverter22	Unit	77.0	-	-	-	-
Inverter23	Unit	77.0	-	-	-	-
Inverter24	Unit	77.0	-	-	-	-
Inverter25	Unit	77.0	-	-	-	-
Inverter26	Unit	77.0	-	-	-	-
Inverter27	Unit	77.0	-	-	-	-
Inverter28	Unit	77.0	-	-	-	-
Inverter29	Unit	77.0	-	-	-	-
Inverter30	Unit	77.0	-	-	-	-
Inverter31	Unit	77.0	-	-	-	-
Inverter32	Unit	77.0	-	-	-	-
Inverter33	Unit	77.0	-	-	-	-
Inverter34	Unit	77.0	-	-	-	-
Substation35	Unit	77.0	-	-	-	-
Inverter36	Unit	77.0	-	-	-	-
Transformer1	Unit	73.0	-	-	-	-
Transformer2	Unit	73.0	-	-	-	-
Transformer3	Unit	73.0	-	-	-	-
Transformer4	Unit	73.0	-	-	-	-
Transformer5	Unit	73.0	-	-	-	-
Transformer6	Unit	73.0	-	-	-	-

Source name	Reference	Level	Corrections			
		Day	Night	Kwall	CI	CT
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Transformer7	Unit	73.0	-	-	-	-
Transformer8	Unit	73.0	-	-	-	-
Transformer9	Unit	73.0	-	-	-	-
Transformer10	Unit	73.0	-	-	-	-
Transformer11	Unit	73.0	-	-	-	-
Transformer12	Unit	73.0	-	-	-	-
Transformer13	Unit	73.0	-	-	-	-
Transformer14	Unit	73.0	-	-	-	-
Transformer15	Unit	73.0	-	-	-	-
Transformer16	Unit	73.0	-	-	-	-
Transformer17	Unit	73.0	-	-	-	-
Transformer18	Unit	73.0	-	-	-	-
Transformer19	Unit	73.0	-	-	-	-
Transformer20	Unit	73.0	-	-	-	-
Transformer21	Unit	73.0	-	-	-	-
Transformer22	Unit	73.0	-	-	-	-
Transformer23	Unit	73.0	-	-	-	-
Transformer24	Unit	73.0	-	-	-	-
Transformer25	Unit	73.0	-	-	-	-
Transformer26	Unit	73.0	-	-	-	-
Transformer27	Unit	73.0	-	-	-	-
Transformer28	Unit	73.0	-	-	-	-
Transformer29	Unit	73.0	-	-	-	-
Transformer30	Unit	73.0	-	-	-	-
Transformer31	Unit	73.0	-	-	-	-
Transformer32	Unit	73.0	-	-	-	-
Transformer33	Unit	73.0	-	-	-	-
Transformer34	Unit	73.0	-	-	-	-
Transformer35	Unit	73.0	-	-	-	-
Transformer36	Unit	73.0	-	-	-	-
Gen-Tie Line	Meter	42.0	-	-	-	-

No.	Receiver name	Floor	Level Day dB(A)
1	1	GF	43.9
2	2	GF	20.3

THIS PAGE INTENTIONALLY LEFT BLANK.

APPENDIX H

LAND EVALUATION & SITE ASSESSMENT ANALYSIS

THIS PAGE INTENTIONALLY LEFT BLANK.

RECON

Land Evaluation and Site Assessment Analysis for the Drew Solar Project, Imperial County, California

Prepared for
Drew Solar LLC
PO Box 317
El Centro, CA 92244

Prepared by
RECON Environmental, Inc.
1927 Fifth Avenue
San Diego, CA 92101
P 619.308.9333

RECON Number 8653
July 24, 2018

Nick Larkin, Associate Environmental Analyst

TABLE OF CONTENTS

FIGURES

TABLE

Acronyms

CAISO	California Independent Service Operator
CUP	Conditional Use Permit
Drew Switchyard	San Diego Gas and Electric's Drew Switchyard
IID	Imperial Irrigation District
LCC	Land Capability Classification
LE	Land Evaluation
LESA	Land Evaluation and Site Assessment Analysis
NRCS	Natural Resources Conservation Service
SA	Site Assessment
USDA	U.S. Department of Agriculture
ZOI	Zone of Influence

1.0 Introduction

As stated in Appendix G of the CEQA Guidelines, the Land Evaluation and Site Assessment (LESA) model is intended to provide lead agencies with an optional methodology to ensure significant effects on the environment of agricultural land conversion are quantitatively and consistently considered in the environmental review process. The model provides an approach for rating the relative quality of land resources using a point-based evaluation composed of six different factors. Land Evaluation factors are based upon measures of soil resource quality including Land Capability Classification (LCC) and Storie Index, while Site Assessment factors are evaluated based on a project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, each of these factors is rated on a 100-point scale. Each factor has a relative weight and are combined to one numeric score that is then evaluated against the scoring thresholds provided in the LESA Model instruction manual. The project's LESA model score is used to make a determination of the potential significance of the conversion of agricultural lands (California Department of Conservation 1997).

Appendix G of the California Environmental Quality Act Guidelines identifies the California Agricultural LESA Model as a model that can be used in assessing impacts on agriculture and farmland. A LESA Model was prepared for the proposed Drew Solar Project (project), and the results are provided below.

2.0 Project Description

2.1 Environmental Setting

The General Plan land use designation for the project site and all surrounding parcels is Agriculture. The project site is and all adjacent sites are in General Agriculture (A2), General Agriculture/Rural (A2R), or Heavy Agriculture (A-3) zoning districts. The project site has historically been, and is currently used, for agricultural production. Crops grown on the project site during the last three years include Bermuda grass, Alfalfa (*Medicago sativa*), kleingrass (*Panicum coloratum*), Wheat, and Sudangrass. Site reconnaissance determined that the site is currently used for production of Bermuda grass.

Agricultural uses are located on the project site and properties to the north, west, and southwest. Nearby buildings include a business located on the north side of State Route 98 approximately 1 mile west of the intersection of State Route 98 and Drew Road, a single-family residence immediately west of the intersection of Drew Road and State Route 98 (approximately 100 feet from project site), and a single-family residence northeast of the intersection of Kubler Road and Pulliam Road (approximately 400 feet from project site). Additionally, three single-family residences are located to the west of the intersection of Kubler Road and Drew Road (0.5 mile west of the project site).

Solar generation facilities are located on properties to the east and south of the project site; associated buildings include an operations and maintenance building at Drew Switchyard; approximately 360 feet from the Drew Solar Project site, and an operations and maintenance building at the existing Centinela Solar Project approximately 0.7 miles east of the Drew Solar Project site.

2.2 Project Characteristics

The project is a proposed solar photovoltaic generation facility which may also include grid scale energy storage located in Imperial County, California. The project site is located in the unincorporated Mount Signal community, approximately 6.5 miles southwest of the city of El Centro and approximately 1.85 miles north of the U.S.-Mexico border. Figure 1 shows the regional location of the project site.

The project site is approximately 844.2 gross-acres (855 gross acres after the project's Parcel Map is recorded) and 762.8 net farmable-acres and is comprised of six parcels: Assessor's Parcel Numbers 052-170-031, 052-170-032, 052-170-037, 052-170-039, 052-170-056, and 052-170-067. The project site is bounded by Kubler Road to the north, Westside Main Canal and Wormwood Canal to the west, State Route 98 to the south, and Pulliam Road to the east. Agricultural uses are located on the project site and properties to the north, west, and southwest. Solar generation facilities are located on properties to the east and south of the project site. Figure 2 shows the project site on a U.S. Geological Survey Map. Figure 3 shows an aerial photograph of the project site and vicinity.

The purpose of the project is to generate approximately 100 megawatts of renewable electricity, and the possible storage of power from both the generation portion of the project and power from the California Independent Service Operator (CAISO) for the State of California. Five solar power generation and potential energy storage conditional use permits (CUPs) are proposed, and a sixth CUP for energy storage as a component of solar is included. The project may include an operations and maintenance building or buildings, substation(s), photovoltaic modules mounted on horizontal single-axis trackers, energy storage facilities, inverters, internal roadways, and may also include auxiliary improvements for storm water retention, fire water storage, water filtration and treatment, equipment control buildings, septic systems, and parking. The project also proposes to transmit power to the CAISO grid by implementing two gen-ties that begin at the southern end of the project site and travel approximately 400 feet south across Drew Road and State Route 98 to connect to the Drew Switchyard, located on Assessor's Parcel Number 052-190-039.

The project may also incorporate an energy storage component. The field of energy storage is rapidly advancing; thus a single technology or provider has not been selected for the energy storage component of the project. The storage component may be centralized and located adjacent to the substation, or alternatively, the energy storage component may be distributed throughout the plant adjacent to individual power conversion centers. The storage component would likely be housed in a warehouse type building or alternatively in smaller modular structures such as cargo shipping containers.

The six project parcels are owned by Imperial Irrigation District (IID) and would be leased by the Applicant for the duration of the Development Agreement. Project development would be phased, with renewable energy generation facilities developed at a flexible rate based on market conditions and changing utility procurement plans. Development phases would occur under up to six separate conditional use permits (CUPs). Under the development agreement, the CUPs will be valid for 40 years with up to 10 years to commence construction. After the conclusion of the final CUP term (estimated at year 2059), the project entitlements require the Applicant to decommission the site and restore it to farmland uses in accordance with a future reclamation Plan. Agricultural restoration of the 762.8 net farmable-acres would occur in 2060. Operation of the project would require routine maintenance and security; the project would generate up to 20 trips per day.

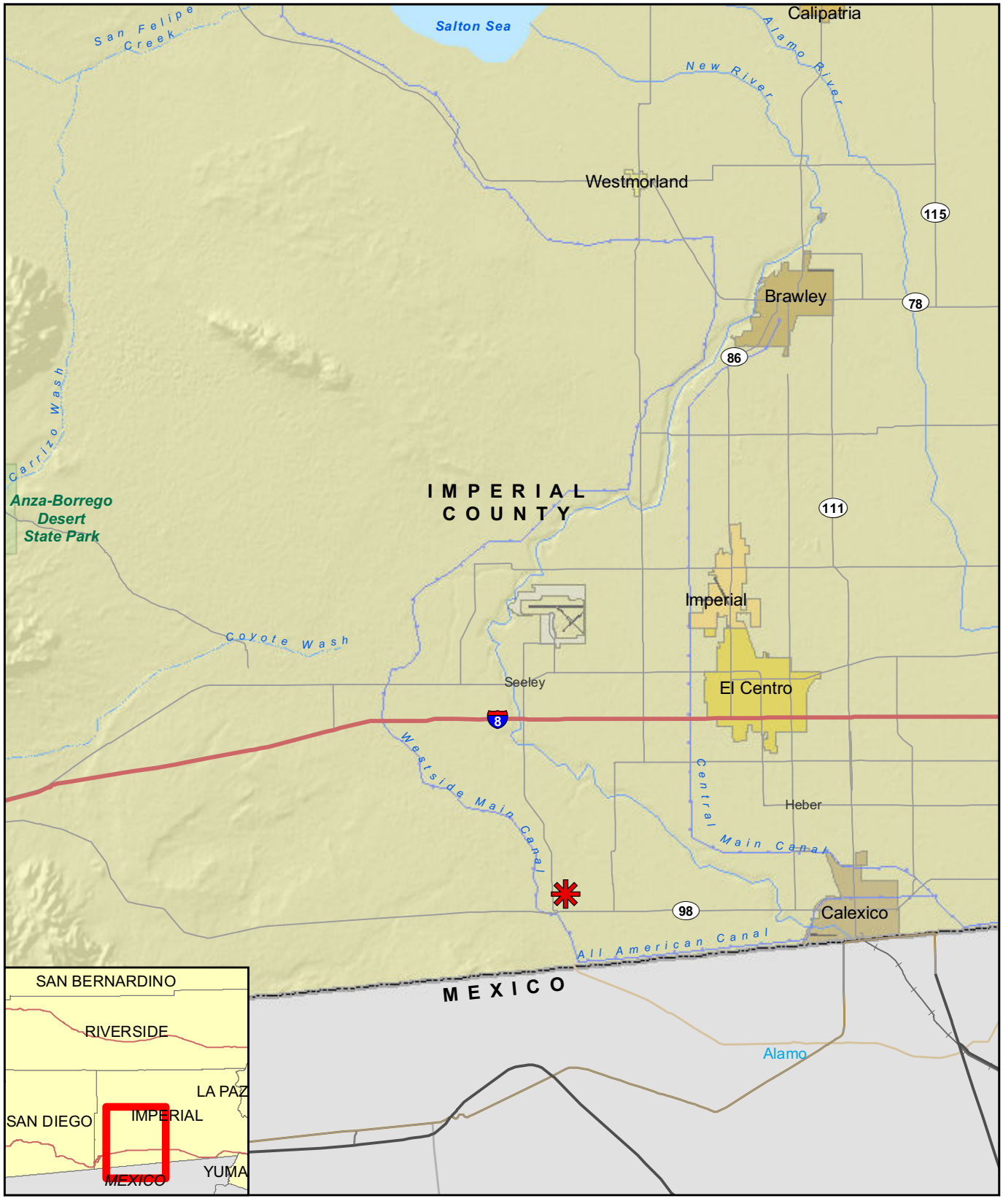
3.0 Land Evaluation and Site Assessment Evaluation

The project site was evaluated using the California LESA Model to rate the quality and availability of agricultural resources and to identify whether the project would meet the threshold criteria as having a significant impact to Agricultural Resources under California Environmental Quality Act Guidelines. The LESA evaluates land use and site assessment factors to identify if the project would result in a significant agricultural resources impact. Each LESA Model factor is evaluated in the following sections. Due to a history of soil compaction, the existing utility roads within the project site are not suitable for future agricultural production. Consequently, the land evaluation and site assessment evaluation exclude the existing utility roads and are focused on the 762.8 net farmable-acres within the project site.

3.1 Land Evaluation

The land evaluation portion of the LESA Model focuses on two components of soil quality: the Land Capability Classification (LCC) Rating and the Storie Index Rating.

The LCC indicates the suitability of soils for most kinds of crops. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receiving the highest rating. Class I soils have no significant limitation for raising crops. Classes VI through VIII have severe limitations, limiting or precluding their use for agriculture. Capability subclasses are also assigned by adding a small letter to the class designation. Capability subclasses include the letters e, w, s, or c. The letter e shows that the main limitation is risk of erosion. The letter w indicates that water in or on the soil interferes with plant growth or cultivation. The letter s indicates that the soil is limited mainly because it is shallow, droughty, or stony. Finally, the letter c is used only in some parts of the United States where cold or dry climates are a concern. Groupings are made according to the limitation of the soils when used to grow crops and the risk of damage to soils when they are used in agriculture. All of the project soils have the capability subclass w indicating water in or on the soil that interferes with plant growth or cultivation.



Project Location

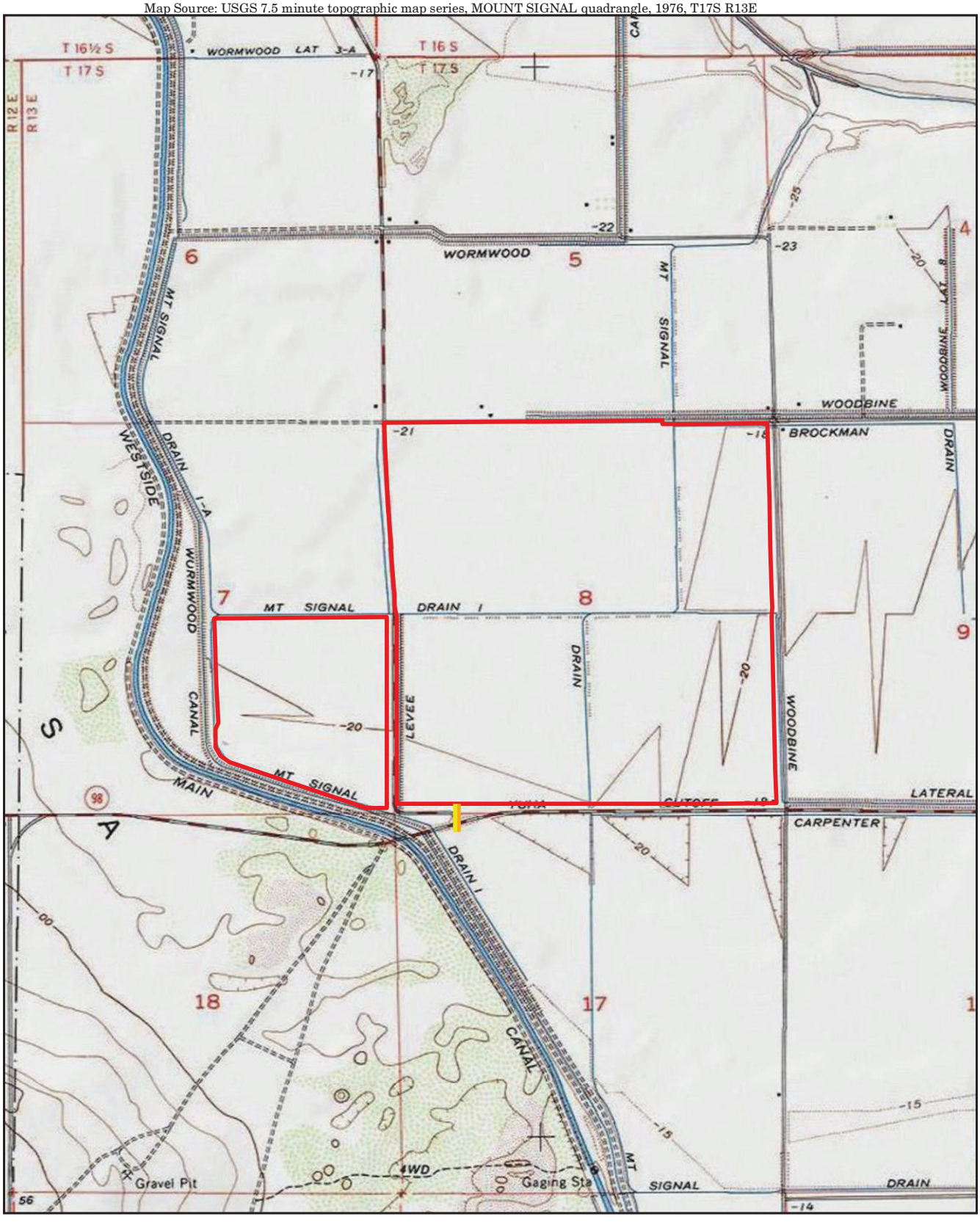
RECON

M:\JOBS5\8653\common_gis\fig1.mxd 11/29/2017 sab

FIGURE 1

Regional Location

Map Source: USGS 7.5 minute topographic map series, MOUNT SIGNAL quadrangle, 1976, T17S R13E



Project Boundary

Gen-Ties

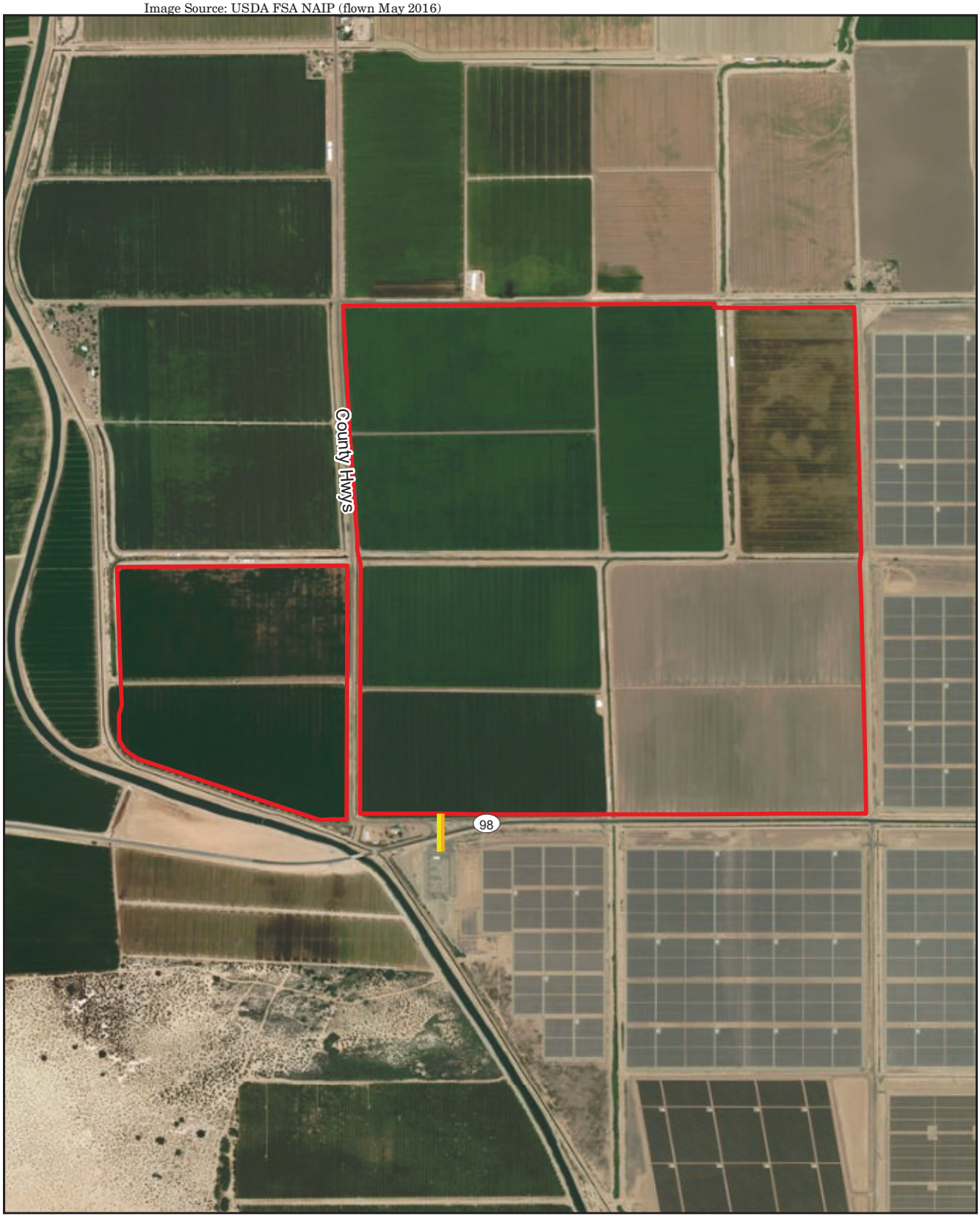
RECON

M:\JOBS5\8653\common_gis\fig2.mxd 5/17/2018 sab

FIGURE 2

Project Location on USGS Map

Image Source: USDA FSA NAIP (flown May 2016)



0 Feet 1,500

Project Boundary

Gen-Ties

RECON

M:\JOBS5\8653\common_gis\fig3.mxd 5/17/2018 sab

FIGURE 3

Project Location on Aerial Photograph

The Storie Index provides a numeric rating (based upon a 100 point scale) of the relative degree of suitability or value of a given soil for intensive agriculture use. This rating is based upon soil characteristics only (California Department of Conservation 1997). The Storie Index assesses the productivity of a soil from the following four characteristics: degree of soil profile development; texture of the surface layer; slope; and manageable features, including drainage, microrelief, fertility, acidity, erosion, and salt content. A score ranging from 0 to 100 is determined for each factor, and the scores are multiplied together to derive an index rating. For simplification, Storie Index ratings have been combined into six grade classes as follows: Grade 1 (excellent), 81 to 100; grade 2 (good), 61 to 80; grade 3 (fair), 41 to 60; grade 4 (poor), 21 to 40; grade 5 (very poor), 11 to 20; and grade 6 (nonagricultural), 10 or less (U.S Department of Agriculture Natural Resources Conservation Service [USDA NRCS] 2017).

Review of the U.S. Department of Agriculture Soil Survey data identified the following five soil types on the project site (USDA NRCS 2013).

- Imperial Silty Clay, Wet
- Holtville Silty Clay, Wet
- Imperial-Glenbar Silty Clay Loams, Wet, 0 to 2 Percent Slopes
- Meloland Very Fine Sandy Loam, Wet
- Rositas Fine Sand, Wet, 0 to 2 Percent Slopes

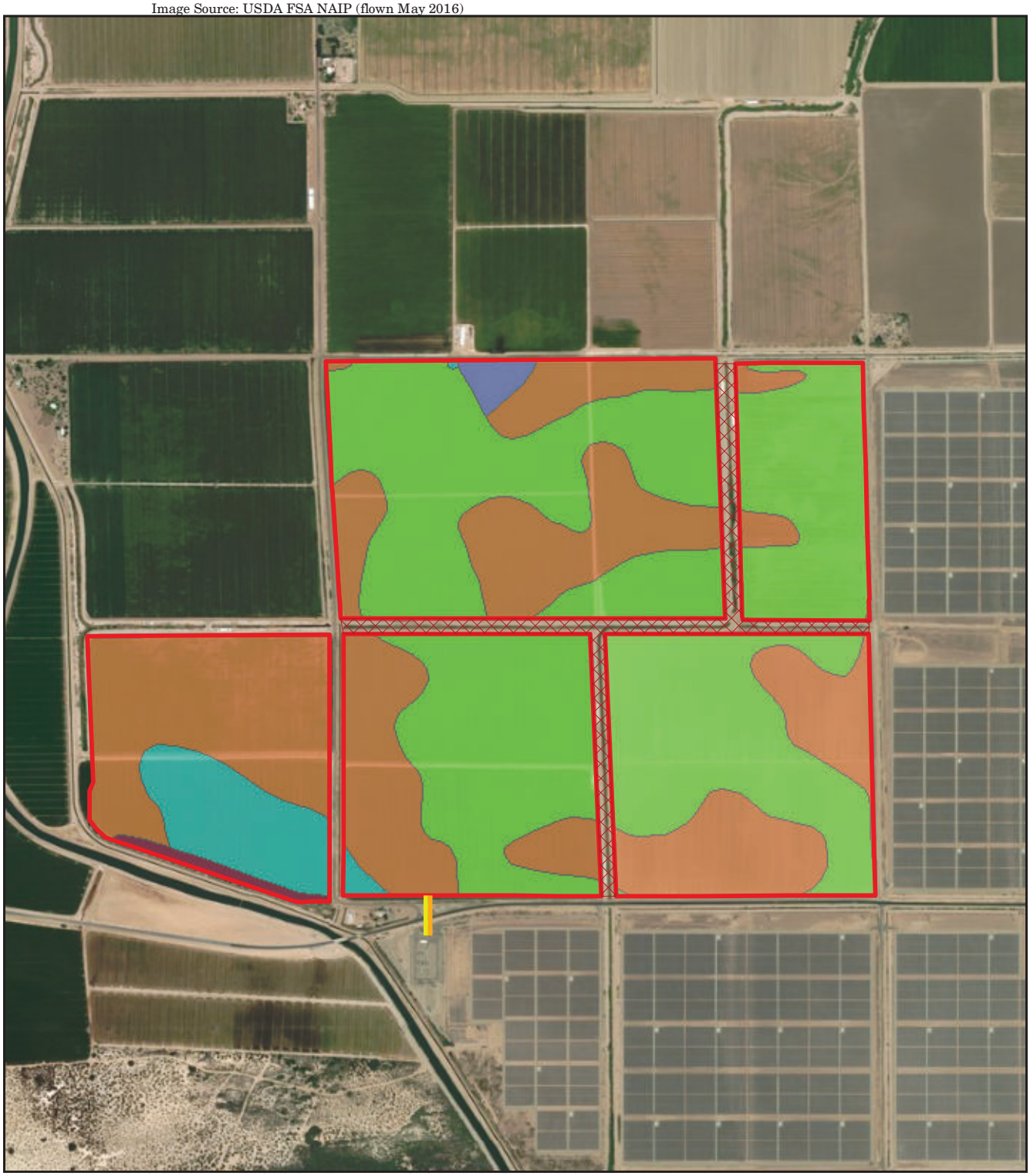
Figure 4 presents the distribution of these five soil types on the project site. The LESA Model assigns LCC scores to each soil by multiplying the soils' LCC Rating by the soils' proportion of the project site. Similarly, the Storie Index score is calculated by multiplying the soils' Storie Index rating by the soils' proportion of the project site. Table 1 presents the calculations for the project sites' LCC and Storie Index scores, which together constitute the project sites' Land Evaluation (LE) scores. The final LE and Site Assessment (SA) scores are entered into the Final LESA Score Sheet presented in Table 7 (see Section 4.0).

Table 1
Land Capability Classification and Storie Index Score

Soil Map Unit	Net-Farmable Acres	Proportion of Project Area	LCC	LCC Rating	LCC Score	Storie Index	Storie Index Score
Holtville Silty Clay, Wet	5.8	0.8%	IIw	80	0.6	30	0.2
Imperial Silty Clay, Wet	409.9	53.7%	IIIw	60	32.2	22	11.8
Imperial-Glenbar Silty Clay Loams, Wet, 0 to 2 Percent Slopes	298.6	39.1%	IIIw	60	23.5	34	13.3
Meloland Very Fine Sandy Loam, Wet	42.4	5.6%	IIIw	60	3.3	36	2.0
Rositas Fine Sand, Wet, 0 to 2 Percent Slopes	6.0	0.8%	IIIw	60	0.4	43	0.3
Total	762.8	100.0%	--	**LCC Total**	60.1	**Storie Index Total**	27.7

NOTE: Totals may vary due to independent rounding.
LCC = Land Capability Classification

Image Source: USDA FSA NAIP (flown May 2016)



Net Farmable Area = 762.8 ac
Utility Road
Gen-Ties

0 Feet 1,500

Soil Classification

Holtville silty clay, wet - 5.8 ac (0.8%)
Imperial silty clay, wet - 409.9 ac (53.7%)
Imperial-Glenbar silty clay loams, wet, 0-2 % slopes - 298.6 ac (39.1%)
Meloland very fine sandy loam, wet - 42.4 ac (5.6%)
Rositas fine sand, wet, 0-2 % slopes - 6.0 ac (0.8%)

RECON

M:\JOBS5\8653\common_gis\fig4.mxd 5/17/2018 sab

FIGURE 4
Project Soil Types

3.2 Site Assessment Factors

The California LESA Model includes four Site Assessment factors that are separately rated and include the following:

- Project Size Rating;
- Water Resources Availability Rating;
- Surrounding Agricultural Land Rating; and
- Surrounding Protected Resource Land Rating (California Department of Conservation 1997)

3.2.1 Project Size Rating

The Project Size rating is utilized to recognize the role that farm size plays in the viability of commercial agricultural operations. In general, larger farming operations can provide greater flexibility in farm management and marketing decisions, and can benefit from certain economies of scale for equipment and infrastructure. Additionally, larger operations tend to have greater impacts upon the local economy through direct employment, as well as impacts upon supporting industries and food processing industries (California Department of Conservation 1997).

The Project Size rating considers both the total acreage of land and the different quality of land that comprise the operation when evaluating agricultural productivity. Lands with higher quality soils lend themselves to greater management and cropping flexibility and have the potential to provide greater economic return per unit acre. Table 2 shows the Project Size Rating Scores the LESA Model assigns projects based on the acreage and LCC rating of soils within the project site. As shown in Table 2, the Project Size rating divides the project into three acreage groupings based upon the LCC ratings that were previously determined in the LE analysis. Under the Project Size rating, relatively fewer acres of high quality soils are required to achieve a maximum Project Size score. Alternatively, a maximum score on lesser quality soils could also achieve a maximum Project Size score (California Department of Conservation 1997). As shown in Table 3, the project is assigned the maximum Project Size score of 100 because the project site includes over 160 acres of soils with an LCC rating of IIIw.

Table 2
Project Size Rating Scores

LCC Class I or II soils		LCC Class III soils		LCC Class IV or lower	
Acres	Score	Acres	Score	Acres	Score
80 or Above	100	160 or Above	100	320 or Above	100
60 to 79	90	120 to 159	90	240 to 319	80
40 to 59	80	80 to 119	80	160 to 239	60
20 to 39	50	60 to 79	70	100 to 159	40
10 to 19	30	40 to 59	60	40 to 99	20
Fewer than 10	0	20 to 39	30	Fewer than 40	0
--	--	10 to 19	10	--	--
--	--	Fewer than 10	0	--	--

LCC = Land Capability Classification

Table 3 Project Size Score			
Soil Type	LCC Class I–II	LCC Class III	LCC Class IV-VIII
Holtville Silty Clay, Wet	5.8	--	--
Imperial Silty Clay, Wet	--	409.9	--
Imperial-Glenbar Silty Clay Loams, Wet, 0 to 2 Percent Slopes	--	298.6	--
Meloland Very Fine Sandy Loam, Wet	--	42.4	--
Rositas Fine Sand, Wet, 0 to 2 Percent Slopes	--	6.0	--
Total Acres	5.8	757.0	--
Project Size Scores	0	100	0
Highest Project Size Score	--	**100**	--
NOTE: Totals may vary due to independent rounding. LCC = Land Capability Classification			

3.2.2 Water Resources Availability Rating

The Water Resource Availability Rating is based upon identifying the various water sources that may supply a given property, and then determining whether different restrictions in supply are likely to take place in years that are characterized as being periods of drought and non-drought (California Department of Conservation 1997).

Agricultural production on the project site is irrigated entirely by irrigation water provided by the IID. Due to the high reliability of IID to deliver water during drought and non-drought years, the proposed site was given the highest Water Resource Availability Rating of 100. Current agricultural production on the project has no physical or economic restrictions that could reduce the availability of water resource supply during either drought or non-drought years. Consequently, the project site is assigned the maximum Water Resources Availability score of 100 (Table 4).

Table 4 Water Resource Availability Score				
Project Portion	Water Source	Proportion of Project Area	Water Availability Score	Weighted Availability Score
1	Imperial Irrigation District Irrigation Water	100 percent	100	100
			Total Water Resources Score	100

3.2.3 Surrounding Agricultural Land Rating

The Surrounding Agricultural Land Rating provides a measurement of how land near a given project, both directly adjoining and within a defined distance away, may both influence and be influenced by the agricultural land use of the subject project site. The Surrounding Agricultural Land Rating is based on identification of a project site's "Zone of Influence" (ZOI), which consists of surrounding parcels located within 0.25 mile from the project boundary. Parcels that are intersected by the 0.25-mile buffer are included in their entirety. The project site is assigned a "Surrounding Agricultural Land" score based upon

the percentage of agricultural land in the ZOI. The LESA Model rates the potential significance of the conversion of an agricultural parcel that has a large proportion of surrounding land in agricultural production more highly than one that has a relatively small percentage of surrounding land in agricultural production. Table 5 shows the Surrounding Agricultural Land Rating Scores the LESA Model assigns projects based on the percentage of surrounding land in agricultural production within the ZOI (California Department of Conservation, 1997).

Table 5
Surrounding Agricultural Land Rating Scores

Percent of Project's Zone of Influence in Agricultural Use	Surrounding Agricultural Land Score
90 to 100 Percent	100
80 to 89	90
75 to 79	80
70 to 74	70
65 to 69	60
60 to 64	50
55 to 59	40
50 to 54	30
45 to 49	20
40 to 44	10
40 <	0

Figure 5 shows that land within the northern, western, and southwestern portions of the ZOI are currently in agricultural production, which constitutes approximately 55 percent of the ZOI. Because land currently in agricultural production constitutes approximately 55 percent of the ZOI, the project site is assigned a Surrounding Protected Resource Land Rating score of 40.

3.2.4 Surrounding Protected Resource Land Rating

The Surrounding Protected Resource Land Rating is essentially an extension of the Surrounding Agricultural Land Rating, and is scored in a similar manner. Protected resource lands are those lands with long-term use restrictions that are compatible with or supportive of agricultural uses of land, including the following:

- Williamson Act contracted land;
- Publicly owned lands maintained as park, forest, or watershed resources; and
- Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses (California Department of Conservation 1997).

Table 6 shows the Surrounding Protected Resource Land Rating Scores the LESA Model assigns projects based on the percentage of protected resource lands within the ZOI. Figure 6 presents the location and acreage of protected land within the ZOI. Approximately 389.6 acres of Williamson Act lands are located within the ZOI, which constitutes approximately

15 percent of the ZOI. Because the percentage of protected land is less than 40 percent of the ZOI, the project site is assigned a Surrounding Protected Resource Land Rating score of zero. Additionally, it should be noted that the County's Williamson Act program will terminate on January 1, 2020, and project construction may not begin until after that date.

Table 6
Surrounding Protected Resource Land Rating Scores

Percent of Project's Zone of Influence Defined as Protected	Surrounding Protected Resource Land Score
90-100 Percent	100
80-89	90
75-79	80
70-74	70
65-69	60
60-64	50
55-59	40
50-54	30
45-49	20
40-44	10
40 <	0

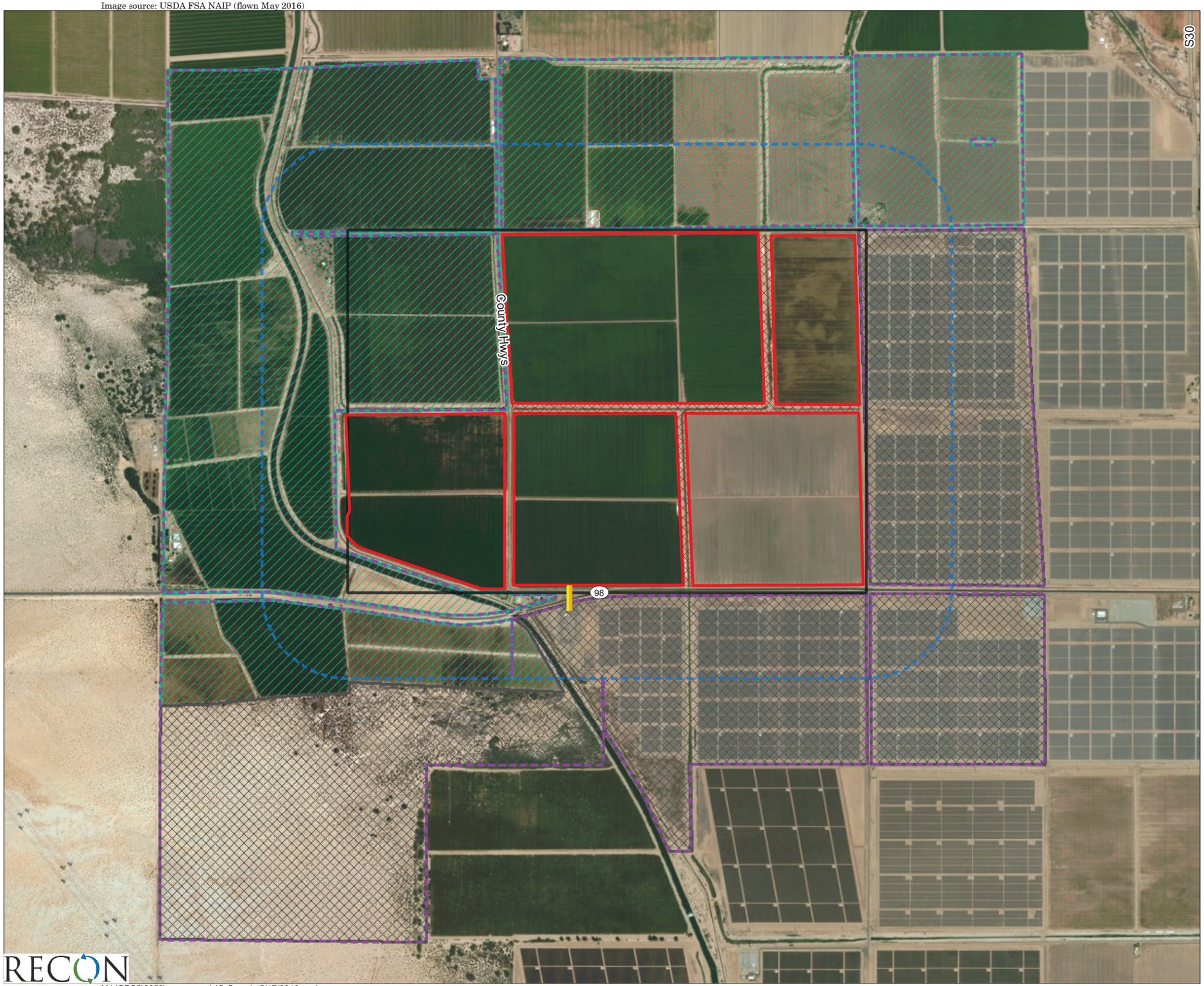
4.0 Summary

The LESA Model is weighted so that 50 percent of the total LESA score is derived from the LE factors, and 50 percent is derived from the SA factors. Table 7 presents the individual scores and factor weighting used to develop the final LESA score. As shown in Table 7, the LE subscore is 21.9, while the SA subscore is 36.0, resulting in a final LESA score of 57.90. As shown in Table 8, a final LESA score between 40 to 59 points is considered significant if both the LE and SA subscores are greater than or equal to 20 points. Because both subscores (LE and SA) are greater than 20, the project is considered to have a significant impact on agricultural resources.

Table 7
Final Land Evaluation and Site Assessment Score Sheet

Factor Name	Factor Score (0–100 Points)	Factor Weighting (Total = 1.00)	Weighted Factor Score
Land Evaluation			
Land Capability Classification	60.1	0.25	15.0
Storie Index Rating	27.7	0.25	6.9
Land Evaluation Subscore			21.9
Site Assessment			
Project Size	100	0.15	15.0
Water Resource Availability	100	0.15	15.0
Surrounding Agricultural Lands	40	0.15	6.0
Protected Resource Lands	0	0.05	0.0
Site Assessment Subscore			36.0
Total Land Evaluation and Site Assessment Score			57.9

Image source: USDA FSA NAIP (flown May 2016)



Net Farmable Area = 762.8 ac
Utility Road
Gen-Ties
Envelope
1/4 mi Buffer of Envelope
Zone of Influence - 2,685.2 ac
Active Farmland - 1,473.7 ac (55% of total)
Non-farmland - 1,211.5 ac (45% of total)

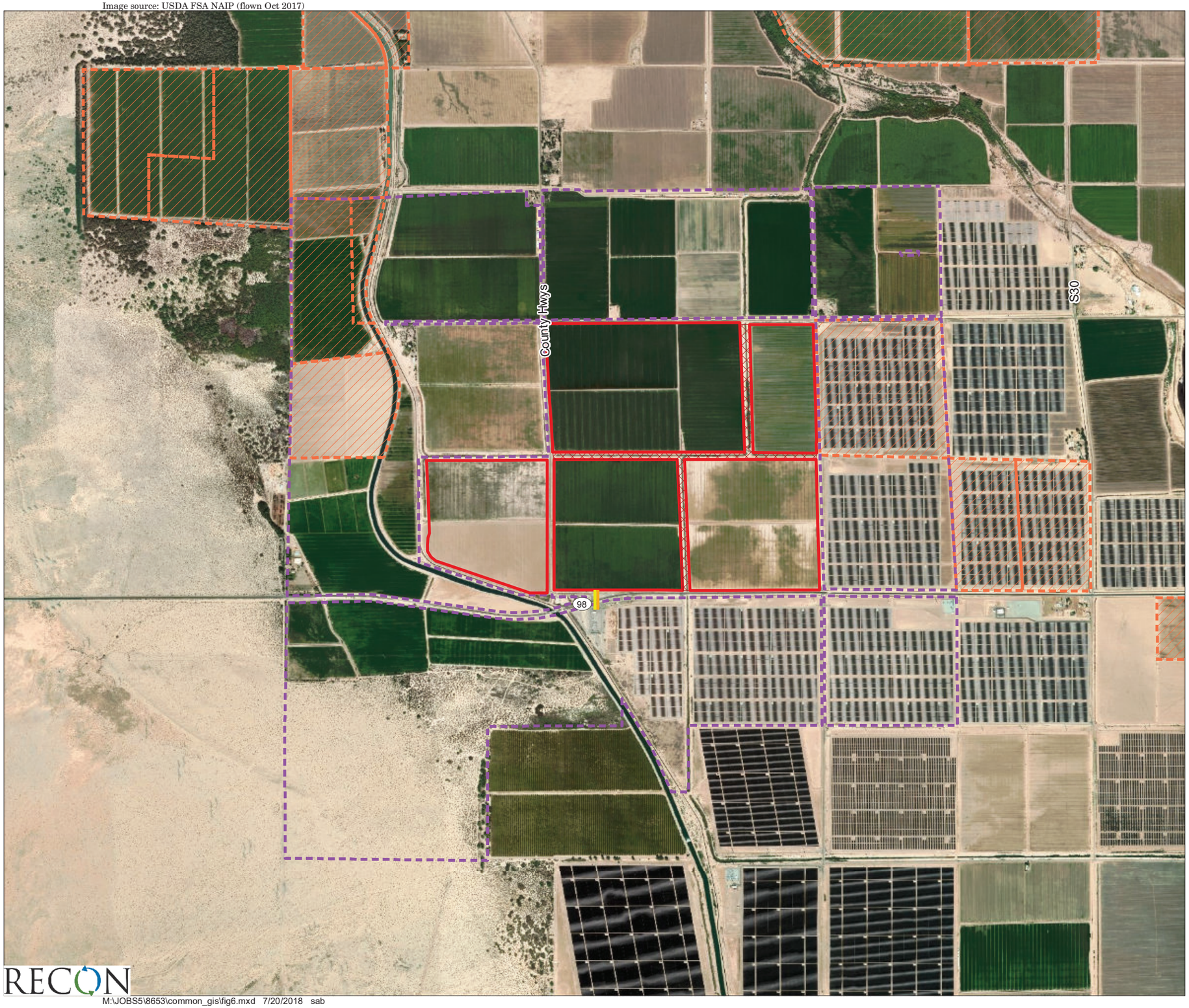
0 Feet 1,500

RECON

M:\JOBS5\8653\common_gis\fig5.mxd 5/17/2018 sab

FIGURE 5
Surrounding Agricultural Land

Image source: USDA FSA NAIP (flown Oct 2017)



Net Farmable Area = 762.8 ac

Utility Road

Gen-Ties

Zone of Influence - 2,685.2 ac

Williamson Act Parcels - 389.6 ac (15% of total)

0 Feet 2,000

RECON

M:\JOBS5\8653\common_gis\fig6.mxd 7/20/2018 sab

FIGURE 6

Surrounding Protected Resource Land

Table 8 California Land Evaluation and Site Assessment Model Scoring Thresholds	
Total Land Evaluation and Site Assessment Score	Scoring Decision
0 to 39 Points	Not Considered Significant
40 to 59 Points	Considered Significant only if Land Evaluation and Site Assessment subscores are each greater than or equal to 20 points
60 to 79 Points	Considered Significant unless either Land Evaluation or Site Assessment subscore is less than 20 points
80 to 100 Points	Considered Significant

5.0 References Cited

California Department of Conservation

1997 California Agricultural Land Evaluation and Site Assessment Model, Instruction Manual.

U.S Department of Agriculture Natural Resources Conservation Service (USDA NRCS)

2017 Web Soil Survey. Soil Survey Area: Imperial County, California, Imperial Valley Area

2013 SSURGO Imperial County, California, Imperial Valley Area (CA683) Version 2, Dec 19.

APPENDIX I

PHASE I ENVIRONMENTAL SITE ASSESSMENT

THIS PAGE INTENTIONALLY LEFT BLANK.

Phase I ESA Report

Drew Solar Project

North of State Route 98 at Drew Road
Calexico, California

Prepared for:

Drew Solar, LLC
PO Box 317
El Centro, CA 92244

Prepared by:

GS Lyon Consultants, Inc.
780 N. 4th Street
El Centro, CA 92243
(760) 337-1100

November 2017

GSLyon

Engineering And
Information Technology

November 30, 2017

Drew Solar, LLC
PO Box 317
El Centro, CA 92244

Phase I Environmental Site Assessment Report
Drew Solar Project
North of State Route 98 at Drew Road
West of Calexico, California
GSL Report No. GS1736

Gentlepersons:

We have performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM E1527-13 of the subject properties located north of State Route 98 at Drew Road about 9 miles west of Calexico, California. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. ***This assessment has revealed the following "de minimus" environmental conditions in connection with the property:***

- Pesticide residues (low concentrations) typical to agricultural crop applications may be present in the near surface soils.

We declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR §312 and we have the specific qualifications based on education, training and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Attached is our report which describes the procedures used and results of the assessment. If you have any questions or require additional information, please do not hesitate to contact the undersigned at (760) 337-1100. We appreciate the opportunity to provide our professional review for this site.

Respectfully Submitted,
GS Lyon Consultants, Inc.

Peter E. LaBrucherie, PE
Project Engineer

Jeffrey O. Lyon, P.E
Principal Engineer

Distribution:
Client (4)

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

1.1 Purpose

GS Lyon Consultants, Inc. was retained by Drew Solar, LLC to conduct a Phase I Environmental Site Assessment (ESA) for the Property (herein referred to as the subject properties or subject sites in this Phase I ESA Report) as a prerequisite to property transaction (purchase, sale, refinance, etc.). The subject properties are located north of State Route 98 at Drew Road about 9 miles west of Calexico, California (See Plate 1 Appendix B for a Vicinity Map of the subject properties).

The purpose of this Phase I Environmental Site Assessment (ESA) is to identify, to the extent feasible, recognized environmental conditions (RECs) associated with past and present activities on the subject sites or in the immediate site vicinity in general conformance to ASTM Standard E-1527-13 "*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*" that may affect future uses of the subject properties.

This report is intended to satisfy the Phase I ESA portion of "*all appropriate inquiry*" into the previous ownership and uses of the subject sites as defined under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) at Title 42 of the United States Code (U.S.C.) §9601(35)(B) and in accordance with 40 Code of Federal Regulations (CFR) Part 312, Standards and Practices for All Appropriate Inquiries; Final Rule (AAI Rule).

1.2 Scope of Services

The scope of work for this ESA is in general accordance with the requirements of ASTM Standard E 1527-13. This assessment included:

- Reconnaissance of the subject properties and adjacent properties
- Review of user-provided information
- Interviews with persons with significant knowledge of the subject properties
- Review of a regulatory database report provided by a third-party vendor
- Review of readily-available historical sources (including but not limited to: aerial photographs, fire insurance maps, property tax files, recorded land title records, and topographical maps)
- Prepare a report of findings

1.3 Limitations

No Phase I ESA can completely eliminate uncertainty regarding the potential for RECs in connection with a property. Conformance of this assessment with ASTM Standard Practice E 1527-13 is intended to reduce, but not eliminate uncertainty regarding the potential for RECs in connection with the Subject Properties. While GS Lyon has made reasonable effort to discover and interpret available historical and current information on the subject properties within the time available, the possibility of undiscovered contamination remains. Our assessment of the subject sites and surrounding areas was conducted in accordance with ASTM guidelines and the *generally accepted environmental engineering standard of practice* which existed in Imperial County, California at the time that the report was prepared. No warranty, express or implied, is made.

GS Lyon Consultants, Inc. derived the data in this report primarily from visual inspections, examination of public records and information in the public domain, informal interviews with individuals, and readily available information about the subject sites. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration of the subject sites, analysis of the data, and reevaluation of the findings, observations, and conclusions expressed in this report.

The findings, observations, and conclusions expressed by GS Lyon Consultants in this report are not, and should not be considered, an opinion concerning the compliance of any past or present owner or operator of the subject sites with any federal, state or local law or regulation.

This report should not be relied upon after **180 days** from the date of issuance, unless additional services are performed as defined in ASTM E 1527-13 - Section 4.7.

1.4 Deviations or Data Gaps

ASTM Standard E 1527-13 requires any significant data gaps, deviations, and deletions from the ASTM Standard to be identified and addressed in the Phase I ESA. A significant data gap would be one that affected the ability to identify a REC on the subject properties or adjacent properties.

Through the course of this assessment, *data failures* or *data gaps* may have been encountered. These failures or gaps, if any, are discussed below. The following provides the opinion of the Environmental Professional as to the significance of the data gaps in terms of defining *recognized environmental conditions* at the subject sites. Data failures may or may not be significant data gaps, and the discussion also provides information pertaining to whether the data failures resulted in significant data gaps.

1.4.1 Data Failures

Data failure is a failure to achieve the historical (property use) research objectives specified in the ASTM Standard Practice even after reviewing the eight standard historical sources that are reasonably ascertainable and likely to be useful. Data failure is one type of data gap.

No *data failures w*ere encountered during this investigation.

1.4.2 Data Gaps

A *data gap* is a lack of or inability to obtain information required by the ASTM Standard Practice, despite good faith efforts by the Environmental Professional to gather such information. This could include any component of the Practice, e.g., standard environmental records, interviews, or a complete reconnaissance. A data gap by itself is not inherently significant, but if other information and/or the EP's experience raises reasonable concerns about the gap, it may be judged to be significant.

Due to the location of the subject properties, Sanborn Fire Insurance maps were not available for the subject properties. Because there is no historical data or physical indications that the subject properties have ever been developed or occupied by a business that would have produced hazardous materials, the lack of Sanborn Fire Insurance maps is not considered a significant data gap.

Aerial photographs and other historical records were not available at 5 year intervals as required under the ASTM E 1527-13 standard. This resulted in a data gap for years that records were not available regarding the area of the subject sites. However, based upon other historical information reviewed, the subject sites have been agricultural fields since at least 1937. Therefore, this data gap is not considered to be significant.

1.5 Significant Assumptions

In preparing this report, GS Lyon Consultants, Inc. has relied upon and presumed accurate certain information (or the absence thereof) about the subject sites and adjacent properties by governmental officials and agencies, the Client, and others identified herein. Except as otherwise stated in the report, GS Lyon Consultants has not attempted to verify the accuracy or completeness of any such information.

1.6 User Reliance

This report has been prepared on behalf of and for the exclusive use of Drew Solar, LLC for the particular subject properties identified in this report, and is subject to and issued in connection with the referenced Agreement and the provisions thereof. This report should not be relied upon by any party other than the client, its legal counsel, and financial institution without the express permission of GS Lyon Consultants, Inc. Any reliance on this report by other parties shall be at such party's sole risk. Any future consultation or provision of services to third parties related to the subject properties require written authorization from Drew Solar, LLC or their representatives. Any such services may be provided at GS Lyon Consultants sole discretion and under terms and conditions acceptable to GS Lyon Consultants, including potential additional compensation.

2.0 SITE DESCRIPTION

2.1 Site Location and Legal Description

The subject properties are located north of State Route 98 at Drew Road (APN 052-170-031, 052-170-032, 052-170-039, 052-170-067, 052-170-056 and 052-170-037) west of Calexico, California. The site locations are depicted on Plate 2, Site Map in Appendix B.

2.2 Current Property Use and Description

The subject properties are comprised of ten (10) agricultural fields (approximately 855 gross acres after the Project's Parcel Map is recorded and 762.8 net acres). Field roads, irrigation drainage channels and concrete irrigation ditches cross the sites and border the properties. Drew Road bisects the property in a north and south alignment with State Highway 98 and Kubler Road forming the north and south boundaries. Mandrapa Road forms the west boundary and Pulliam Road forms the east.

One transformer was noted on a power pole along Drew Road near the Mount Signal Drain #1 (see Plate 2 in Appendix B). No evidence of leakage from the transformer was noted and IID records indicate that all transformers in the Imperial Valley have been tested for PCB content. All transformers containing PCB's have been replaced by the IID.

2.3 Adjoining Property Use

The subject sites are located within a rural agricultural area of southwestern Imperial Valley north of State Route 98 on either side of Drew Road west of Calexico, California. Properties surrounding the subject sites are either agricultural fields or photovoltaic solar farms built within the last 4 years. A rural residence and farm equipment repair shop is located adjacent to the southern boundary of the property between Drew Road and State Route 98. The Westside Main Canal is located adjacent to the southwestern boundary of the subject site.

2.4 Physical Site Characteristics

Topography: Topographic maps (USGS 7.5 minute Mount Signal, CA Quadrangle) indicate that the site elevation is approximately 20 feet below mean sea level (MSL) or elevation 980 (local datum). The Imperial Irrigation District, which supplies power and raw (irrigation) water to the area, established local datum by equating mean sea level to El. 1000.00 feet.

Geologic Setting: The sites are located in the Colorado Desert Physiographic province of southern California. The dominant feature of the Colorado Desert province is the Salton Trough, a geologic structural depression resulting from large-scale regional faulting. The trough is bounded on the northeast by the San Andreas Fault and the southwest by faults of the San Jacinto Fault Zone. The Salton Trough represents northward extension of the Gulf of California, which has experienced continual in-filling with both marine and non-marine sediments since the Miocene Epoch (25 million years before present). The tectonic activity that formed the trough continues at a high rate as evidenced by deformed young sedimentary deposits and high levels of historic seismicity.

The sites are directly underlain by Holocene (0-11,000 years before present) Cahuilla Lake sediments, which consist of interbedded lenticular and tabular sand, silt, and clay. The predominant surface soil is silty clay. The Holocene lake deposits are considered to be less than 100 feet thick and are characterized by surficial clay and silt deposits with varying amounts of fine sand. The topography of the Imperial Valley is relatively flat, with few significant land features. The valley floor slopes gently to the north (less than 0.5 percent) from an elevation of sea level at Calexico to approximately 225 feet below sea level at the Salton Sea.

Soil Conditions: The U. S. Soil Conservation Service compiled a map of surface soil conditions based on a thirteen-year study from 1962-1975. The Soil Survey maps were published in 1981 and indicate that surficial deposits at the sites and surrounding area consist predominantly of silty clay to sandy silt loams of the Imperial, Gelnbar and Holtville, soil groups (see Appendix B). These loams are formed in sediment and alluvium of mixed origin (Colorado River overflows and fresh-water lake-bed sediments). Based on Unified Soil Classification System presented in the Soils Survey Report, the permeability of these soils is expected to be low to very low.

Groundwater Conditions: The groundwater in the area of the subject sites is brackish and is typically encountered at a depth of 6 to 10 feet below the ground surface. Depth to groundwater may fluctuate due to localized geologic conditions, precipitation, irrigation, drainage and construction practices in the region. Based on the regional topography, groundwater flow is assumed to be generally towards the north within the sites area. Flow directions may also vary locally in the vicinity of the sites.

3.0 USER PROVIDED INFORMATION

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the *Brownfields Amendments*), the *User* must provide the following information (if available) to the *environmental professional*. Failure to provide this information could result in a determination that *all appropriate inquiry* is not complete. The user was asked to provide information or knowledge of the following:

- Environmental cleanup liens that are filed or recorded against the sites.
- Activity and land use limitations that are in place on the sites or that have been filed or recorded in a registry.
- Specialized knowledge or experience of the person seeking to qualify for the LLPs.
- Relationship of the purchase price to the fair market value of the *property* if it were not contaminated.
- Commonly known or *reasonably ascertainable* information about the *property*.
- The degree of obviousness of the presence or likely presence of contamination at the *properties*, and the ability to detect the contamination by appropriate investigation.
- The reason for preparation of this Phase I ESA.

A user questionnaire was provided to the user to aid in gathering information that may be pertinent to the evaluation of the subject sites for environmental conditions. The completed user questionnaire is provided in Appendix G.

3.1 Title Records

GS Lyon was provided with preliminary title records for review as part of this assessment. Title records are provided in Appendix I.

3.2 Environmental Liens or Activity and Use Limitations

An environmental lien is a charge, security, or encumbrance upon the title to a property to secure the payment of a cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of hazardous substances or petroleum products upon the property. According to the User Questionnaires, the property users (Derek Dessert of Drew Solar LLC), are not aware of any Environmental Liens or Activity and Use Limitations associated with the subject sites that have been filed or recorded under federal, tribal, state or local law (Appendix I).

3.3 Specialized Knowledge

According to the User Questionnaires, (Derek Dessert) is not aware of any specialized knowledge or experience associated with their respective subject sites or nearby properties.

GS Lyon has no personal knowledge of the subject sites.

3.4 Commonly Known or Reasonable Ascertainable Information

No information was provided by the Client regarding any commonly known or reasonably ascertainable information within the local community that is material to RECs in connection with the subject properties.

3.5 Valuation Reduction for Environmental Issues

The client indicated that the purchase price of the subject properties reasonably reflects the fair market value of the property with no discounts for environmental issues.

3.6 Owner, Property Manager, and Occupant Information

The subject sites are currently agricultural use land. The current owner of the subject sites is:

1. Name: Imperial Irrigation District Trust Lands
   Address: PO Box 937 Imperial, CA 92251

3.7 Previous Reports and Other Provided Documentation

No previous reports or other pertinent documentation was provided to GS Lyon for review during the course of this assessment.

4.0 RECORDS REVIEW

A review of historic aerial photographs (Appendix C), historic topographic maps (Appendix D), historic Sanborn Fire Insurance maps (Appendix E), governmental regulatory databases (Appendix F) and other regulatory and agency databases (Appendix G) was performed to evaluate potentially adverse environmental conditions resulting from previous ownership and uses of the sites. The details of the review are presented in Sections 4.1 through 4.3 of this report.

4.1 Regulatory Database Review

4.1.1 Standard Environmental Record Sources

GS Lyon Consultants contracted Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut which queries and maintains comprehensive environmental databases and historical information, including proprietary databases, aerial photography, topographic maps, Sanborn Maps, and city directories to generate a compilation of Federal, State and Tribal regulatory lists containing information regarding hazardous materials occurrences on or within the prescribed radii of ASTM Practice E 1527-13. The search of each database was conducted using the approximate minimum search distances from the subject properties defined by the Standard. The purpose of the records review is to obtain and review *reasonably ascertainable* records that will help identify *recognized environmental conditions* or *historical recognized environmental conditions* in connection with the subject sites.

EDR‘s Phase I ESA search package was ordered and performed on November 27, 2017. The search package included: DataMap Area Study, Certified Sanborn Map, Historical Topo Maps and Aerial Photographs.

The results of EDR’s search were used to evaluate if the subject property and/or properties within prescribed search distances are listed as having a past or present record of actual or potential environmental impact. Inclusion of a property in a government database list does not necessarily indicate that the properties have an environmental problem.

The following is a brief synopsis of sites identified in the EDR DataMap Area Study. The government record search report is included in its entirety in Appendix F.

Federal NPL List

The Environmental Protection Agency's (EPA) National Priorities List (NPL) of uncontrolled or abandoned hazardous waste sites was reviewed for risk sites within 1 mile of the subject sites. The NPL identifies sites for priority cleanup and long-term care of properties under the Superfund Program that are contaminated with hazardous substances.

The database search did not identify any NPL sites within 1 mile of the subject sites.

Federal CERCLIS List

The EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) listings were reviewed to determine if risks sites within ½ mile are listed for investigation. The CERCLIS database identifies hazardous waste sites that are on or proposed to be included in the NPL and sites that require investigation and possible remedial action to mitigate potential negative impacts on human health or the environment.

The CERCLIS database search did not identify any risk sites within 0.5 mile of the subject sites.

Federal CERCLIS – No Further Remedial Action Planned

The EPA's CERCLIS – No Further Remedial Action Planned (NFRAP) database was reviewed to determine if risks sites within ½ mile are listed. CERCLIS NFRAP site are risk sites that have been removed from and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at the site has been completed and the EPA has determined that no further steps will be taken to list this site on the NPL, unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time.

This designation is for sites where no contamination was found, contamination was quickly removed without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration.

The CERCLIS – NFRAP database search did not identify any risk sites within ½ mile of the subject sites.

Federal RCRA List

The Federal Resource Conservation Recovery Act (RCRA) Notifiers List was reviewed to determine if RCRA treatment, storage or disposal sites (TSD) are located within 1 mile of the subject sites. The RCRA Correction Action Sites List (CORRACTS) is maintained for risk sites which are undergoing "a corrective action". A corrective action order is issued when there has been a release of hazardous waste constituents into the environment from a RCRA facility.

The RCRA and RCRA CORRACTS database searches did not identify any RCRA TSD or RCRA CORRACTS risk sites within ½ mile of the subject sites.

Federal ERNS List

The Federal Emergency Response Notification System (ERNS) List was reviewed to determine if reported release of oil and/or hazardous substances occurred on the subject sites. The ERNS database searches did not identify any reported releases for the subject sites.

State and Tribal NPL List

The Environmental Protection Agency's (EPA) National Priorities List (NPL) of uncontrolled or abandoned hazardous waste sites was reviewed for risk sites within a 1 mile radius of the subject sites. The NPL identifies sites for priority cleanup and long-term care of properties under the Superfund Program that are contaminated with hazardous substances. The database search did not identify any NPL sites within 1 mile of the subject sites.

State and Tribal Leaking Underground Storage Tank Sites

The California State Water Resources Control Board (SWRCB) maintains a list of information concerning reported leaking underground storage tanks (LUST). The LUST inventory list was reviewed to determine if any LUSTs are located within ½ mile the subject sites. The SWRCB LUST database did not identify any risk sites within ½ mile of the subject sites.

State and Tribal Underground Storage Tank Sites

The California State Water Resource Control Board (SWRCB) underground storage tank (UST) inventory list was reviewed to determine if any UST's are located on or adjacent to the subject sites. The SWRCB UST database did not identify any risk sites within ¼ mile of the subject sites.

Solid Waste Disposal/Landfill Facilities

The Solid Waste Disposal/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data comes from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database. A review of the SWF/LF list database did not identify any risk sites within ½ mile of the subject sites.

Unmapped (Orphan) Sites

Not all sites or facilities identified in the database records can be accurately located in relation to the Subject Properties due to incomplete information being supplied to the regulatory agencies and are referred to as "orphan sites" by EDR.

The "Orphan Summary" section of the EDR DataMap Area Study Report identified 24 orphan sites. Based on a drive-by reconnaissance of the Subject Property vicinity and review of location and status information provided in the database report, the identified orphan sites are not located within the search radii for databases specified by the Standard.

4.1.2 Additional Environmental Record Sources

California Department of Toxic Substances Control (DTSC) Records – Envirostor Database: EnviroStor is an online search and Geographic Information System tool for identifying sites that have known contamination or sites for which there may be reasons to investigate further. Public Access to EnviroStor is accessible via the DTSC Web Page located at: http://www.envirostor.dtsc.ca.gov/public/. The EnviroStor database includes the following site types: Federal Superfund sites (National Priority List); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. The information includes site name, site type, status, address, any restricted use (recorded deed restrictions), past use(s) that caused contamination, potential contaminants of concern, potential environmental media affected, site history, planned and completed activities. The EnviroStor database also contains current and historical information relating to Permitted and Corrective Action facilities. The EnviroStor database includes current and historical information on the following permit-related documents: facility permits; permit renewal applications; permit modifications to an existing permit; closure of hazardous waste management units (HWMUs) or entire facilities; facility corrective action (investigation and/or cleanup); and/or post-closure permits or other required post-closure activities.

The EnviroStor database was queried on November 16, 2017. A map showing the results of the query is provided in Appendix G. No reported cases were found on the subject properties. No risk sites were located within ½ mile of the subject properties.

California State Water Resources Control Board Records – GeoTracker Database: GeoTracker is a geographic information system (GIS) maintained by the California State Water Resources Control Board (SWRCB) that provides online access to environmental data at http://www.geotracker.swrcb.ca.gov\. GeoTracker tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies. Site information from the Spills, Leaks, Investigations, and Cleanups (SLIC) Program is also included in GeoTracker.

The GeoTracker database was queried for environmental data pertaining to the Site on November 16, 2017. A map showing the results of the query is provided in Appendix G. No reported cases were found on the subject properties. No risk sites were located within ½ mile of the subject properties.

CUPA Records Search: The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. Cal/EPA and other state agencies set the standards for their programs while local governments implement the standards—these local implementing agencies are called Certified Unified Program Agencies (CUPA).

CUPA records indicate the presence of a chemical storage facility at SDG&E Drew Road Switchyard located at the southeast corner of State Route 98 and Mandrapa Road south of the subject sites. No reports of spills or leaks were identified in the EDR report for the subject sites. A map showing the results of the query is provided in Appendix G

4.2 Historical Use Records

ASTM E1527-13 requires the environmental professional to identify all obvious uses of the property from the present back to the properties first developed use or 1940, whichever is earliest. This information is collected to identify the likelihood that past uses have led to RECs in connection with the properties. This task is accomplished by reviewing standard historical sources to the extent that they are necessary, reasonably ascertainable, and likely to be useful. These standard records include aerial photographs, fire insurance maps, property tax files, land title records, topographic maps, city directories, telephone directories, building department records, and zoning/land use records.

The general type of historical use (i.e., commercial, retail, residential, industrial, undeveloped, office) should be identified at 5-year intervals, unless the specific use of the property appears to be unchanged over a period longer than 5 years. The historical research is complete when the use is defined or when data failure occurs. Data failure occurs when all of the standard historical sources have been reviewed, yet the property use cannot be identified back to its first developed use or to 1940. Data failure is not uncommon in trying to identify the use of the property at 5-year intervals back to first use or 1940, whichever is earlier.

GS Lyon reviewed historical records to identify obvious uses of the subject properties from the present back to the properties first developed use, or to 1940, whichever is earlier. The results of this research and data failure, if encountered, are presented in the following sections.

4.2.1 Title Records

GS Lyon was provided with preliminary title records for review as part of this assessment. No liens were found from reviewing the preliminary report (see Appendix I for full report).

4.2.2 Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps are large scale maps depicting the commercial, industrial, and residential sections of various cities across the United States. Since the primary use of the fire insurance maps was to assess the buildings that were being insured, the existence and location of fuel storage tanks, flammable or other potentially toxic substances, and the nature of businesses are often shown on these maps.

Due to the rural undeveloped nature of the sites and vicinity, no Sanborn Fire Insurance Maps were available for the subject sites. A “No Coverage” letter for the Sanborn Fire Insurance Maps is included in Appendix E.

4.2.3 Aerial Photographs

Aerial photographs obtained from the Imperial Irrigation District (IID) archives dating back to 1937 were reviewed for historical development of the subject sites. Reproductions of the historical aerial photographs reviewed are included in Appendix C.

The 1937, 1949, 1953, 1956, 1965, 1976, 1985, 1996, 2002, 2008, 2013 and 2014 aerial photographs show the subject sites developed as agricultural fields.

The 2014 aerial photograph is similar to the 2003 photograph with the addition of photovoltaic solar power generation facilities constructed on adjacent properties.

4.2.4 Street Directories

GS Lyon Consultants contracted Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut to conduct a search of historic city directories for the subject properties (Appendix H). City directories are used for locating individuals and businesses in a particular urban or suburban area. City directories are generally divided into three sections: a business index, a list of resident names and addresses, the name and type of businesses (if unclear from the name). While city directory coverage is comprehensive for major cities, it may be spotty for rural and small towns.

EDR Digital Archive: The EDR Digital Archive for the years 1992, 1995, 2000, 2005, 2010 and 2014 were reviewed. No listings are shown for the subject sites. No service stations, chemical manufacturers, petroleum manufacturers, distributors, or automotive repair facilities were noted at or in the immediate vicinity of the subject sites.

4.2.5 Historical Topographic Maps

Historic topographic maps (1940, 1943 and 1937), USGS 15 Min. Heber, CA Quadrangle, showed the subject site with five rural residences spread across the site. The (1957, 1976 and 2012) maps do not show any structures within the subject site. The maps can be found in Appendix D.

4.2.6 Historical Telephone Directories

Telephone Directories: Telephone directories for the Imperial County businesses published in 1941, 1955, and 1968 were reviewed. No service stations, chemical manufacturers, petroleum manufacturers, distributors, or automotive repair facilities were noted at or in the immediate vicinity of the subject sites.

4.3 Historical Use Summary

4.3.1 Summary of the Historical Use of Property

Based on a review of the historical information, the subject properties were first developed prior to 1937 for agricultural use. The subject sites have been used for agricultural use since the late-1930's.

4.3.2 Summary of the Historical Use of Adjacent Properties

Historically, the properties located immediately adjacent to the subject properties have been agricultural use lands with scattered rural residential homes.

5.0 SITE RECONNAISSANCE

5.1 Methodology and Limiting Conditions

A site reconnaissance was performed by Mr. Pete LaBrucherie, a staff engineer of GS Lyon, on November 6, 2017. The site visit consisted of a driving the perimeter of the sites and randomly crossing the subject sites. The reconnaissance included visual observations of surficial conditions at the sites and observation of adjoining properties to the extent that they were visible from public areas. Mr. LaBrucherie was unaccompanied during the site reconnaissance.

The site reconnaissance was limited to visual and/or physical observation of the exterior and interior of the subject properties and its improvements, the current uses of the properties and adjoining properties, and the current condition of the properties. The site visit evaluated the subject properties and adjoining properties for potential hazardous materials/waste and petroleum product use, storage, disposal, or accidental release, including the following: presence of tank and drum storage; mechanical or electrical equipment likely to contain liquids; evidence of soil or pavement staining or stressed vegetation; ponds, pits, lagoons, or sumps; suspicious odors; fill and depressions; or any other condition indicative of potential contamination. The site visit did not evaluate the presence of asbestos-containing materials, radon, lead-based paint, mold, indoor air quality, or structural defects, or other non-scope items.

A site reconnaissance can be limited by weather conditions, bodies of water, adjacent buildings, or other obstacles. The weather was warm and sunny and no access limitations were placed on the site visit.

5.2 General Site Setting

The subject property is comprised of ten (10) agricultural fields. Field roads, irrigation drainage channels and concrete irrigation ditches cross the sites and border the properties. Drew Road bisects the property in a north and south alignment with State Highway 98 and Kubler Road forming the north and south boundaries. Mandrapa Road forms the west boundary and Pulliam Road forms the east.

One transformer was noted on a power pole along Drew Road near the Mount Signal Drain #1 (see Plate 2 in Appendix B). No evidence of leakage from the transformer was noted and IID records indicate that all transformers in the Imperial Valley have been tested for PCB content. All transformers containing PCB's have been replaced by the IID.

Photographs of the subject properties taken on November 6, 2017 during our site reconnaissance are included in Appendix A.

5.3 Adjacent Properties

The subject sites are located within a rural agricultural area of southwestern Imperial Valley north of State Route 98 on either side of Drew Road west of Calexico, California. Properties surrounding the subject sites are either agricultural fields or photovoltaic solar power generation facilities built within the last 4 years. A rural residence and farm equipment repair shop is located adjacent to the southern boundary of the property in between Drew Road and State Route 98. ***The residence and shop site are not within the subject study area.*** The Westside Main Canal is located adjacent to the southwestern boundary of the subject site.

5.4 Exterior and Interior Observations

The following conditions were specifically assessed for their potential to indicate RECs and may include conditions inside or outside structures on the subject properties.

5.4.1 Hazardous Substances and Petroleum Products

GS Lyon did not observe operations that use, treat, store, dispose of, or generate hazardous materials or petroleum products on the subject properties.

5.4.2 Storage Tanks

Underground Storage Tanks (USTs) – No obvious visual evidence indicating the current presence of USTs (i.e. vent pipes, fill ports, etc.) was noted.

Aboveground Storage Tanks (ASTs) – No obvious visual evidence indicating the historical presence of ASTs (i.e. secondary containments, concrete saddles, etc.) was observed.

5.4.3 Odors

No obvious strong, pungent, or noxious odors were noted during the site reconnaissance.

5.4.4 Pools of Liquid

Pools of liquid were not observed during the site reconnaissance.

5.4.5 Drums and Containers

GS Lyon did not observe drums or storage containers on the subject sites other than portable tanks containing anhydrous ammonia which is used for fertilizer for the fields.

5.4.6 Unidentified Substance Containers

GS Lyon did not observe open or damaged containers containing unidentified substances at the subject sites.

5.4.7 Suspect Polychlorinated Biphenyl (PCB) Containing Equipment

No potential PCB containing equipment such as electrical transformers, capacitors, and hydraulic equipment were observed during the site reconnaissance on the subject sites or immediate vicinity.

5.5 Interior Observations

The subject properties are currently vacant with no structures.

5.5.1 Heating/Cooling

The subject sites are vacant. No heating and cooling units are present on the subject site.

5.4.2 Stains or Corrosion

No structures exist on the subject sites; therefore, stains and/or corrosion were not observed.

5.4.3 Drains and Sumps

No drains or sumps were noted on the subject properties.

5.6 Exterior Observations

5.6.1 Pits, Ponds, and Lagoons

No pits, ponds, or lagoons were noted on the subject properties.

5.6.2 Stained Soils or Pavement

No evidence of significantly stained soil or pavement was noted on the subject properties.

5.6.3 Stressed Vegetation

No evidence of stressed vegetation attributed to potential contamination was noted on the subject properties.

5.6.4 Solid Waste

No dumpsters or solid waste containers exist on the subject properties.

5.6.5 Wastewater

Storm water flows to the northeast and toward the Mount Signal Drain No. 1 (Imperial Irrigation District earthen farm drainage channel).

5.6.6 Wells

No evidence of wells (dry wells, drinking water, observation wells, groundwater monitoring wells, irrigation wells, injection wells or abandoned wells) was noted on the subject properties.

5.6.7 Septic Systems

No septic systems are present on the subject properties.

5.7 Non-Scope Issues

ASTM guidelines identify non-scope issues, which are beyond the scope of a Phase I ESA as defined by ASTM. These issues may affect environmental risk at the subject properties and may warrant discussion and/or assessment. Some of these non-scope issues include; asbestos-containing building materials, radon, lead-based paint, and wetlands which are discussed below.

5.7.1 Asbestos-Containing Building Materials

The potential for asbestos containing materials (ACM) existing at the subject properties is very low due to the lack of site structures.

5.7.2 Lead-Based Paint

The potential or lead based paint residues existing at the subject properties is very low due to the lack of site development.

5.7.3 Radon

The subject properties are located in Zone 3 as shown on the EPA Map of Radon Zones indicating a predicted average indoor radon screening level of less than 2 pCi/L.

5.7.4 Wetlands

No wetlands are located within one (1) mile of the subject properties.

5.7.5 Agricultural Use

Based on our review of environmental records, historical documents, and site conditions, the subject properties have been in agricultural use since the late 1930's. Residues of currently available pesticides and currently banned pesticides such as DDT/DDE may be present in near surface soils in limited concentrations. The concentrations of these pesticides found on other Imperial Valley agricultural sites are typically less than 25% of the current regulatory threshold limits and are not considered a significant environmental

hazard. The presence and concentration of near surface pesticides at the subject sites can be accurately characterized only by site-specific sampling and testing.

6.0 INTERVIEWS

GS Lyon interviewed various individuals familiar with the subject properties, as identified to us, and/or government officials in order to evaluate historical uses and identify potential RECs existing on the sites. The individuals interviewed were asked to provide responses in good faith and to the best of their knowledge. The following sections identify the individuals interviewed and summarize the information each provided; however, additional information provided by these individuals may be presented in other sections of this report.

6.1 Interview with Owner

Mr. Tommy Mills, Imperial Irrigation District (IID) Agricultural Management Liaison, was phone interviewed on November 16, 2017. According to Mr. Mills the properties were purchased in 2003 by the IID and have been farmed by Craig Corda for the past 35 years. Mr. Mills also indicated a previous environmental assessment had been completed for the property around the time of purchase, he had no information pertaining to any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the subject properties; any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the subject properties; or any notices from a governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.

6.2 Interview with Local Government Officials

The DTSC Imperial CUPA office was contacted (Veronica Lopez) by email on November 16, 2017. CUPA records were searched for environmental issues related to the subject sites. No records were found associated with the subject sites.

7.0 EVALUATION

7.1 Summary of Findings

The subject sites are located in an area generally developed for agricultural use in southwestern Imperial Valley approximately 9 miles west of Calexico, California. The subject properties were first developed prior to 1937 for agricultural use.

7.2 Conclusions

GS Lyon has performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM E1527-13 of the subject properties located north of State Route 98 at Drew Road (APN 052-170-031, 052-170-032, 052-170-039, 052-170-067, 052-170-056 and 052-170-037) west of Calexico, California. Any exceptions to, or deviations from, this practice are described in Section 1.4 of this Phase I ESA report. This assessment has revealed the following recognized environmental conditions (RECs) in connection with the subject properties:

7.2.1 Recognized Environmental Conditions

A *recognized environmental condition (REC)* refers to the presence or likely presence of any hazardous substance or petroleum product on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term REC includes hazardous substances and petroleum products even under conditions that might be in compliance with laws. The term is not intended to include "de minimis" conditions that do not present a threat to human health and/or the environment and that would not be subject to an enforcement action if brought to the attention of appropriate governmental agencies.

This Phase I ESA has revealed no evidence of *recognized environmental conditions* in connection with the subject sites.

7.2.2 Historical Recognized Environmental Conditions

A *historical recognized environmental condition (HREC)* refers to an environmental condition which would have been considered a REC in the past, but which is no longer considered a REC based on subsequent assessment or regulatory closure.

This Phase I ESA has revealed no evidence of *historical recognized environmental conditions* in connection with the subject sites.

7.2.3 Environmental Concerns and De Minimis Conditions

This Phase I ESA has revealed no *de minimis* conditions or environmental concerns in connection with the subject sites, except for the following:

- Pesticide residues (low concentrations) typical to agricultural crop applications may be present in the near surface soils.

7.3 Recommendations

Based on the scope of work performed for this assessment, it is our professional opinion that no RECs have been identified in connection with the subject properties that would warrant further environmental study (Phase II) at this time.

8.0 REFERENCES

40 CFR 312, Standards and Practices for All Appropriate Inquiries; Final Rule, November 2005 (AAI Rule).

American Society for Testing and Materials. 2013. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. Designation E 1527-13. West Conshohocken, Pennsylvania. 35 pp.

Department of Toxic Substances Control. 2017. EnviroStor Database Website, http://www.envirostor.dtsc.ca.gov/public/ .

Environmental Data Resources, Inc., *The EDR Radius Map with Geocheck*. Inquiry number 5098359.2s, November 06, 2017.

Environmental Data Resources, Inc., *The EDR Aerial Photo Decade Package*. Inquiry number 5098359.9, November 08, 2017.

Environmental Data Resources, Inc., *Sanborn Map Report*. Inquiry number 5098359.3, November 06, 2017.

Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, Flood Insurance Map, Community Number 06025C2050C, dated April 7, 2014.

State Water Resources Control Board. 2017. GeoTracker Database Website, http://geotracker.swrcb.ca.gov/ .

United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, accessed via the Internet, October 2017.

United States Environmental Protection Agency, EPA Map of Radon Zones (Document EPA-402-R-93-071), accessed via the Internet,November 2017

United States Geological Survey Topographic Map 1979 Mt. Signal, CA 7.5 minute series

APPENDIX A

Photo 1: Looking south from the corner of Kubler and Drew Road intersection.

Photo 2: Looking east from the corner of Kubler and Drew Road intersection.

Photo 3: Looking south along the middle of the northern boundary of the subject stie.

Photo 4: Looking south along the Mount Signal Drain #1 from Kubler Road.

Photo 5: Looking south along Kubler Road at abandoned tire.

Photo 6: Looking southwest from the northeast corner of the subject site.

Photo 7: Looking south from the northeast corner of the subject site.

Photo 8: Looking west from the middle of the eastern boundary of the subject site.

Photo 9: Looking south from the middle of the eastern boundary of the subject site.

Photo 10: Looking at fertilizer tank located at the corner of an agricultural field within the subject site.

Photo 11: Looking west along the Mount Signal Drain #1 within the subject site.

Photo 12: Looking east from the center of the subject site.

Photo 13: Looking south from the center of the subject site.

Photo 14: Looking southwest from the center of the subject site.

Photo 15: Looking northwest from the center of the subject site.

Photo 16: Looking northeast from the center of the subject site.

Photo 15: Looking east from the center of the subject site.

Photo 16: Looking northwest from the eastern boundary of the subject site at the fertilizer tank.

Photo 17: Looking northwest from the southeast corner of the subject site.

Photo 18: Looking north along the Mount Signal Drain from State Route 98.

Photo 19: Looking northwest from the Mount Signal Drain at State Route 98.

Photo 20: Looking east from the southern boundary of the subject site at Drew Road.

Photo 21: Looking south at the adjacent rural residence and shop from the southern boundary of the subject site at Drew Road.

Photo 22: Looking north from the southern boundary of the subject site at Drew Road.

Photo 23: Looking west from the southern boundary of the subject site at Drew Road.

Photo 24: Looking east from southwestern corner of the subject site.

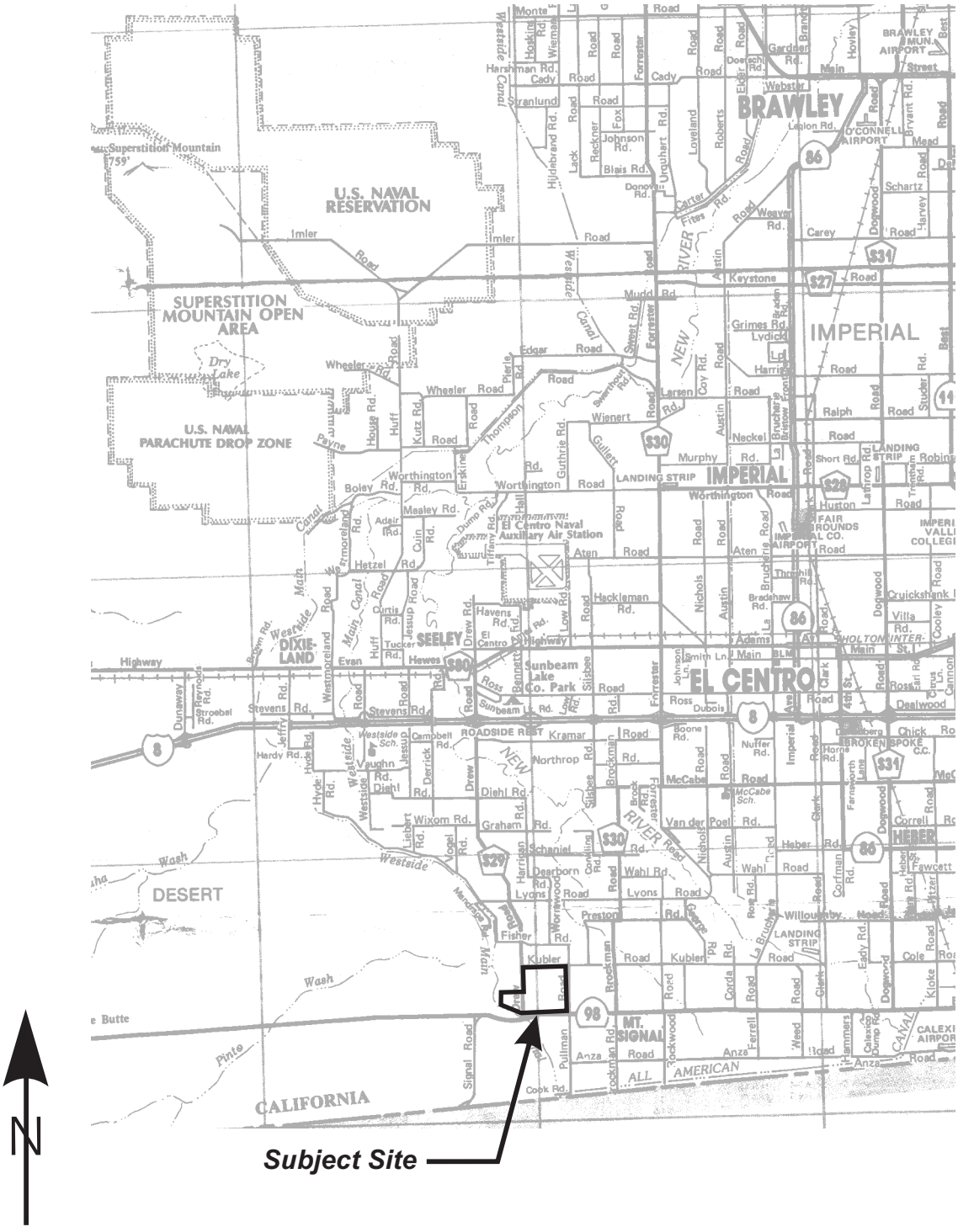
Photo 25: Looking north from the southwestern corner of the subject site.

Photo 26: Looking southeast from the north corner of the western boundary of the subject site.

Photo 27: Looking east from the north corner of the western boundary of the subject site.

Photo 28: Looking at the drain pump and IID transformer along Drew Road at the concave corner of the subject site.

APPENDIX B



GS Lyon

Project No.: GS1736

Vicinity Map

Plate 1

● Transformer

GSLyon

Project No.: GS1736

Site Map

Plate 2

GS Lyon Project No.: GS1736	Soil Survey Map	Plate 3

TABLE 12.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS

[The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group
							K	T	
	In	In/hr	In/in	pH	Mmhos/cm				
100----------	0-13	2.0-6.0	0.08-0.09	7.9-8.4	<4	Very low	0.17	5	2
Antho	13-60	2.0-6.0	0.08-0.12	7.9-8.4	<4	Low-------	0.32		
101*:									
Antho----------	0-8	2.0-6.0	0.08-0.09	7.9-8.4	<4	Very low	0.17	5	2
	8-60	2.0-6.0	0.08-0.12	7.9-8.4	<4	Low-------	0.32		
Superstition----	0-6	2.0-6.0	0.05-0.11	7.9-8.4	<2	Low-------	0.15	5	2
	6-60	2.0-6.0	0.05-0.11	7.9-8.4	<2	Low-------	0.15		
102*.									
Badland									
103----------	0-10	6.0-20	0.03-0.06	7.4-8.4	<4	Low-------	0.10	5	1
Carsitas	10-60	6.0-20	0.03-0.06	7.4-8.4	<4	Low-------	0.10		
104*.									
Fluvaquents									
105----------	0-13	0.2-0.6	0.19-0.21	7.4-8.4	2-4	Moderate	0.37	5	4L
Glenbar	13-60	0.2-0.6	0.19-0.21	7.4-8.4	2-4	Moderate	0.37		
106----------	0-13	0.2-0.6	0.19-0.21	7.4-8.4	2-8	Moderate	0.37	5	4L
Glenbar	13-60	0.2-0.6	0.19-0.21	7.4-8.4	2-8	Moderate	0.37		
107*----------	0-13	0.6-2.0	0.13-0.15	8.5-9.0	4-8	Low-------	0.43	5	4L
Glenbar	13-60	0.2-0.6	0.16-0.18	8.5-9.0	>4	Moderate	0.43		
108----------	0-14	0.6-2.0	0.15-0.25	7.4-8.4	2-8	Low-------	0.43	5	4L
Holtville	14-22	0.06-0.2	0.17-0.25	7.4-8.4	2-8	High------	0.32		
	22-60	0.6-2.0	0.15-0.25	7.4-8.4	2-8	Low-------	0.43		
109, 110------	0-17	0.06-0.2	0.17-0.25	7.4-8.4	2-8	High------	0.32	5	4
Holtville	17-24	0.06-0.2	0.17-0.25	7.4-8.4	2-8	High------	0.32		
	24-35	0.6-2.0	0.15-0.25	7.4-8.4	2-8	Low-------	0.43		
	35-60	2.0-6.0	0.08-0.10	7.4-8.4	2-8	Low-------	0.28		
111*:									
Holtville-------	0-10	0.06-0.2	0.17-0.25	7.4-8.4	2-8	High------	0.32	5	4
	10-22	0.06-0.2	0.17-0.25	7.4-8.4	2-8	High------	0.32		
	22-60	0.6-2.0	0.15-0.25	7.4-8.4	2-8	Low-------	0.43		
Imperial--------	0-12	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High------	0.43	5	4
	12-60	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High------	0.43		
112----------	0-12	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High------	0.43	5	4
Imperial	12-60	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High------	0.43		
113----------	0-12	0.06-0.2	0.06-0.17	8.5-9.0	>8	High------	0.43	5	4
Imperial	12-60	0.06-0.2	0.06-0.17	8.5-9.0	>8	High------	0.43		
114----------	0-12	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High------	0.43	5	4
Imperial	12-60	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High------	0.43		
115*:									
Imperial--------	0-12	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High------	0.43	5	4
	12-60	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High------	0.43		
Glenbar---------	0-13	0.2-0.6	0.19-0.21	7.9-8.4	2-8	Moderate	0.37	5	4L
	13-60	0.2-0.6	0.19-0.21	7.9-8.4	2-8	Moderate	0.37		

See footnote at end of table.

TABLE 12.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

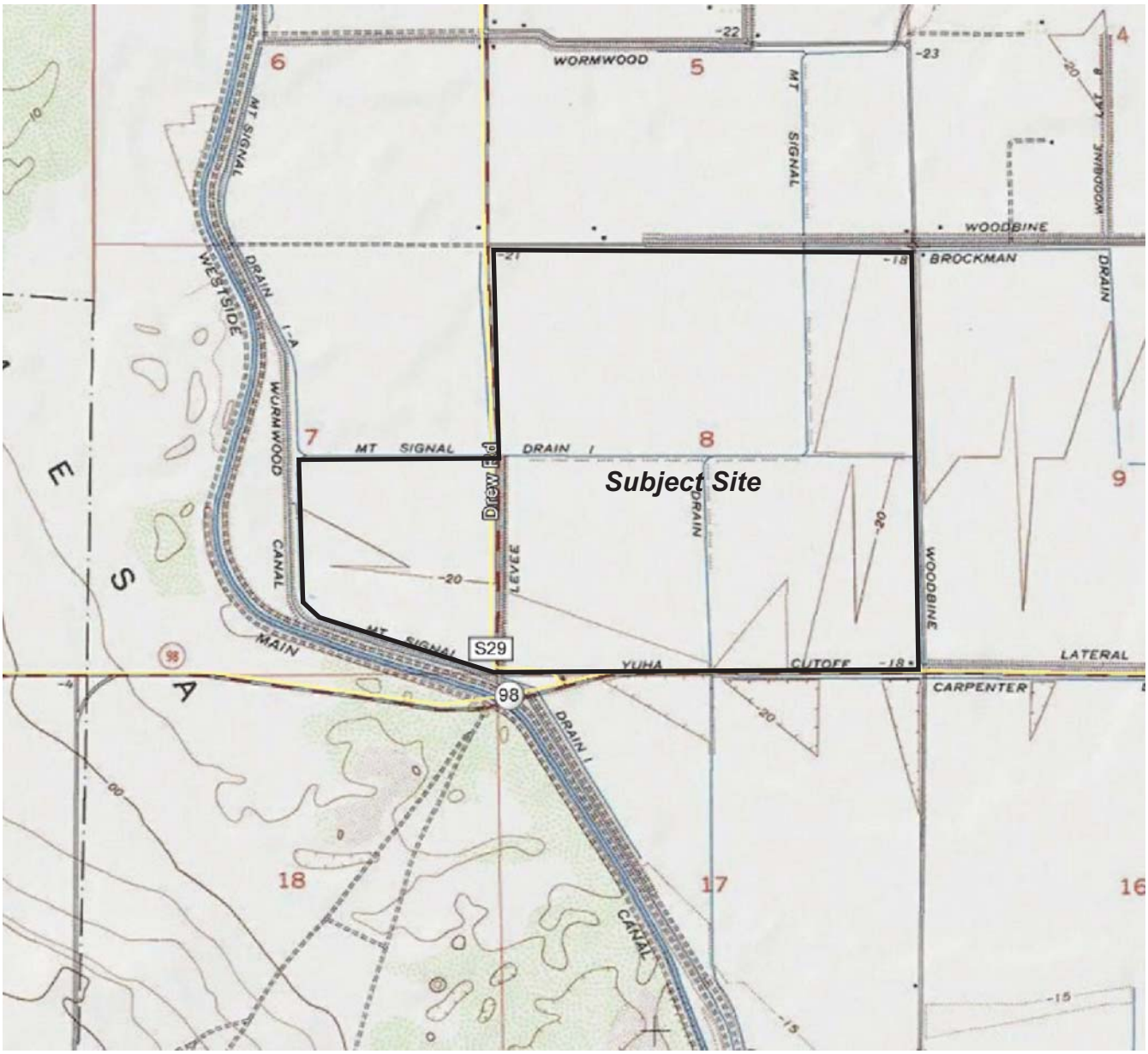
Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group
							K	T	
	In	In/hr	In/in	pH	Mmhos/cm				
116*:									
Imperial	0-13	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High	0.43	5	4
	13-60	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High	0.43		
Glenbar	0-13	0.2-0.6	0.19-0.21	7.9-8.4	2-4	Moderate	0.37	5	4L
	13-60	0.2-0.6	0.19-0.21	7.9-8.4	2-4	Moderate	0.37		
117, 118	0-12	0.6-2.0	0.18-0.20	7.9-8.4	<4	Low	0.55	5	4L
Indio	12-72	0.6-2.0	0.16-0.20	7.9-8.4	<4	Low	0.49		
119*:									
Indio	0-12	0.6-2.0	0.18-0.20	7.9-8.4	<4	Low	0.55	5	4L
	12-72	0.6-2.0	0.16-0.20	7.9-8.4	<4	Low	0.49		
Vint	0-10	2.0-6.0	0.09-0.11	7.9-8.4	2-4	Low	0.24	4	2
	10-60	2.0-6.0	0.09-0.11	7.9-8.4	2-4	Low	0.24		
120*	0-12	0.6-2.0	0.16-0.18	7.9-8.4	<4	Low	0.37	4	4L
Laveen	12-60	0.6-2.0	0.16-0.18	7.9-8.4	<4	Low	0.43		
121	0-12	2.0-6.0	0.08-0.09	7.4-8.4	2-8	Low	0.28	5	1
Meloland	12-26	0.6-2.0	0.08-0.25	7.4-8.4	2-8	Low	0.43		
	26-71	0.06-0.2	0.06-0.15	7.4-8.4	8-16	High	0.32		
122	0-12	0.6-2.0	0.15-0.25	7.4-8.4	2-8	Low	0.43	5	4L
Meloland	12-26	0.6-2.0	0.08-0.25	7.4-8.4	2-8	Low	0.43		
	26-71	0.06-0.2	0.06-0.15	7.4-8.4	8-16	High	0.32		
123*:									
Meloland	0-12	0.6-2.0	0.15-0.25	7.4-8.4	2-8	Low	0.43	5	4L
	12-26	0.6-2.0	0.08-0.25	7.4-8.4	2-8	Low	0.43		
	26-38	0.06-0.2	0.06-0.15	7.4-8.4	8-16	High	0.32		
	38-60	0.6-2.0	0.08-0.25	7.4-8.4	8-16	Low	0.43		
Holtville	0-12	0.6-2.0	0.15-0.25	7.4-8.4	2-8	Low	0.43	5	4L
	12-24	0.06-0.2	0.17-0.25	7.4-8.4	2-8	High	0.32		
	24-36	0.6-2.0	0.15-0.25	7.4-8.4	2-8	Low	0.43		
	36-60	2.0-6.0	0.08-0.10	7.4-8.4	2-8	Low	0.28		
124, 125	0-23	6.0-20	0.04-0.06	7.9-8.4	2-8	Low	0.24	5	1
Niland	23-60	0.06-0.2	0.10-0.16	7.9-8.4	2-16	High	0.32		
126, 127	0-23	6.0-20	0.06-0.08	7.9-8.4	2-8	Low	0.28	5	2
Niland	23-60	0.06-0.2	0.10-0.16	7.9-8.4	2-16	High	0.32		
128*:									
Niland	0-23	6.0-20	0.04-0.06	7.9-8.4	2-8	Low	0.24	5	1
	23-60	0.06-0.2	0.10-0.16	7.9-8.4	2-16	High	0.32		
Imperial	0-12	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High	0.43	5	4
	12-60	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High	0.43		
129*.									
Pits									
130, 131, 132,									
133, 134	0-9	6.0-20	0.05-0.07	7.9-8.4	2-4	Low	0.20	5	1
Rositas	9-60	6.0-20	0.05-0.08	7.9-8.4	2-4	Low	0.20		
135	0-9	6.0-20	0.05-0.07	7.9-8.4	2-8	Low	0.20	5	1
Rositas	9-60	6.0-20	0.05-0.08	7.9-8.4	2-8	Low	0.20		
136	0-4	6.0-20	0.06-0.08	7.9-8.4	2-4	Low	0.20	5	2
Rositas	4-60	6.0-20	0.05-0.08	7.9-8.4	2-4	Low	0.20		
137	0-12	0.6-2.0	0.20-0.25	7.9-8.4	2-4	Low	0.49	5	4L
Rositas	12-60	6.0-20	0.05-0.08	7.9-8.4	2-4	Low	0.20		
138*:									
Rositas	0-4	6.0-20	0.06-0.08	7.9-8.4	2-4	Low	0.20	5	2
	4-60	6.0-20	0.05-0.08	7.9-8.4	2-4	Low	0.20		

See footnote at end of table.

TABLE 12.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Wind erodibility group
							K	T	
	In	In/hr	In/in	pH	Mmhos/cm				
138*:									
Superstition----	0-6	2.0-6.0	0.05-0.11	7.9-8.4	<2	Low-------	0.15	5	2
	6-60	2.0-6.0	0.05-0.11	7.9-8.4	<2	Low-------	0.15		
139----------	0-6	2.0-6.0	0.05-0.11	7.9-8.4	<2	Low-------	0.15	5	2
Superstition	6-60	2.0-6.0	0.05-0.11	7.9-8.4	<2	Low-------	0.15		
140*:									
Torriorthents									
Rock outcrop									
141*:									
Torriorthents									
Orthids									
142----------	0-10	2.0-6.0	0.10-0.20	7.9-8.4	2-8	Low-------	0.32	5	3
Vint	10-60	2.0-6.0	0.09-0.11	7.9-8.4	2-8	Low-------	0.17		
143----------	0-12	0.6-2.0	0.13-0.15	7.9-8.4	2-4	Low-------	0.37	4	3
Vint	12-60	2.0-6.0	0.09-0.11	7.9-8.4	2-4	Low-------	0.24		
144*:									
Vint----------	0-10	2.0-6.0	0.10-0.20	7.9-8.4	2-8	Low-------	0.32	5	3
	10-40	2.0-6.0	0.09-0.11	7.9-8.4	2-8	Low-------	0.17		
	40-60	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High------	0.43	5	3
Indio----------	0-12	0.6-2.0	0.18-0.20	7.9-8.4	<4	Low-------	0.55	5	4L
	12-40	0.6-2.0	0.16-0.20	7.9-8.4	<4	Low-------	0.49		
	40-70	0.06-0.2	0.17-0.35	7.9-8.4	4-8	High------	0.43		

* See description of the map unit for composition and behavior characteristics of the map unit.



N

GS Lyon		
Project No.: GS1736	Topographic Map	Plate 4

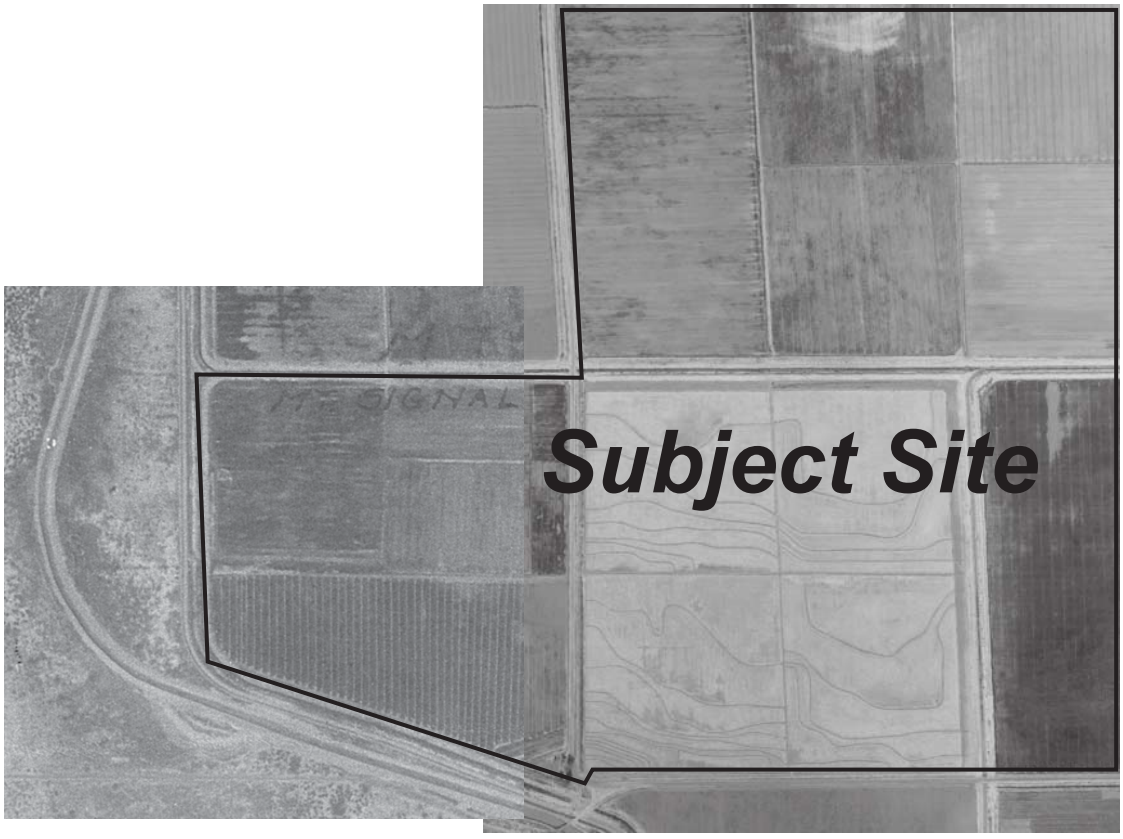
APPENDIX C

GS Lyon

Project No.: GS1736

1937 Aerial Photograph

Plate 5



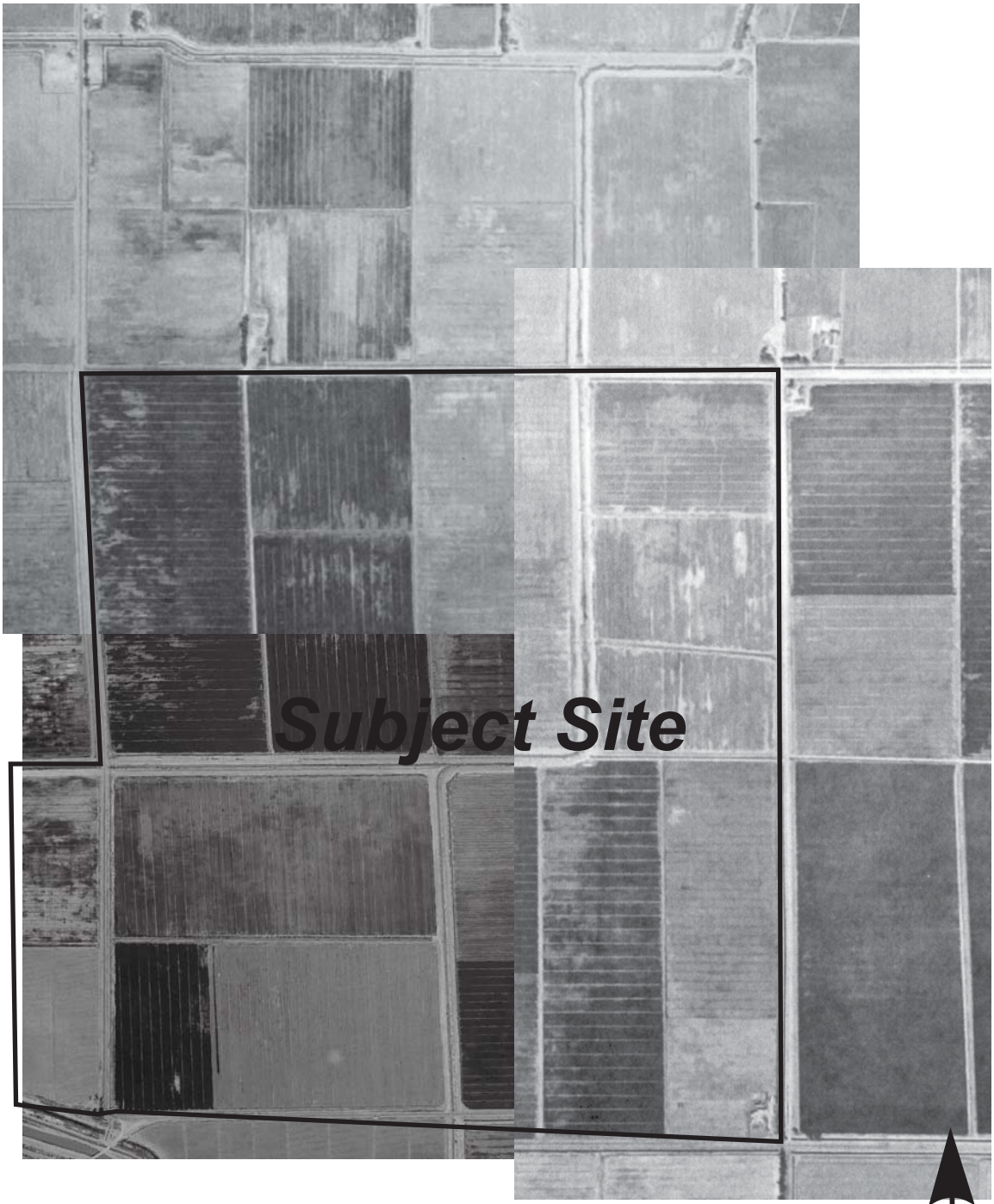
N

GS Lyon

Project No.: GS1736

1949 Aerial Photograph

Plate 6

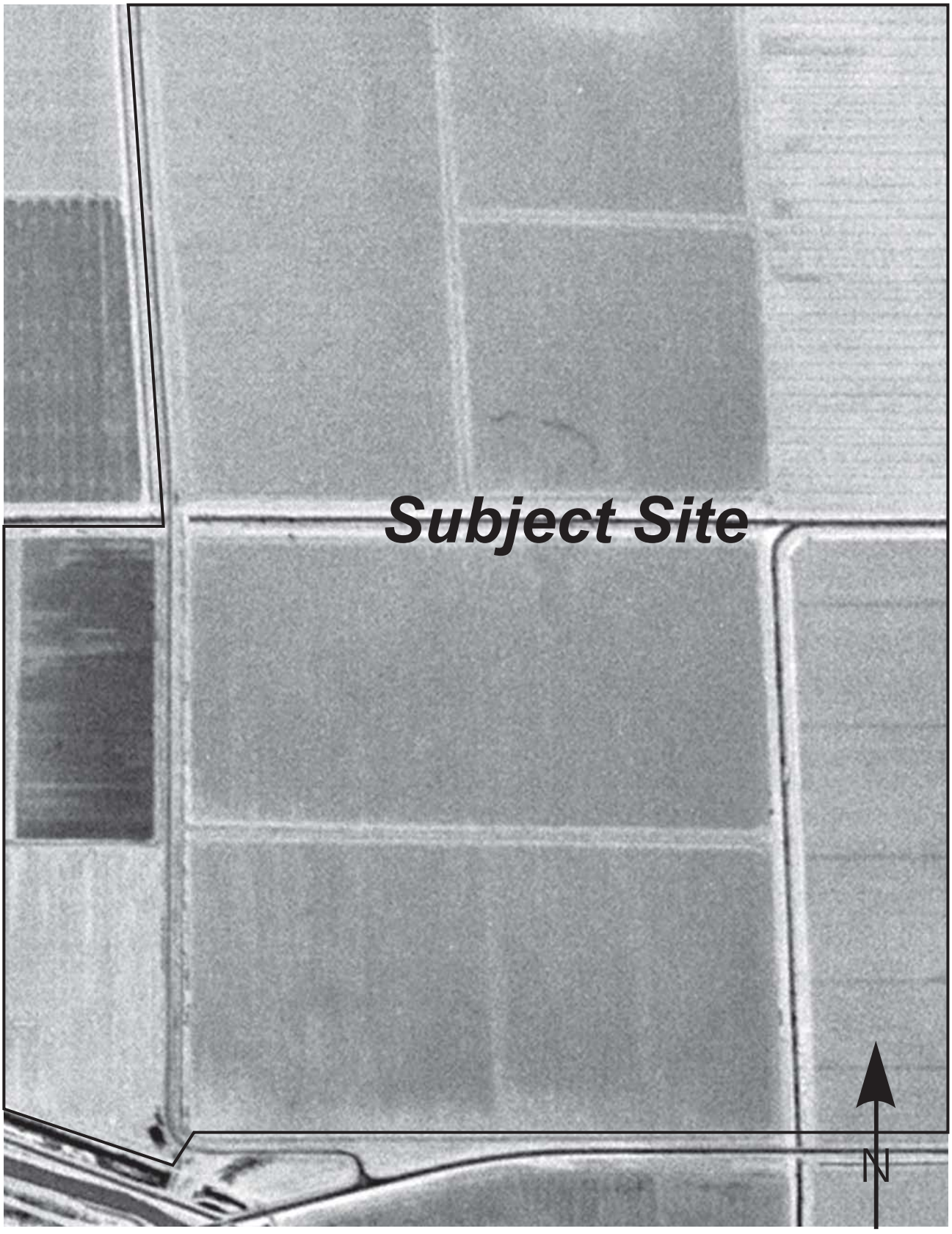


GSLyon

Project No.: GS1736

1953 Aerial Photograph

Plate
7



GS Lyon

Project No.: GS1736

1956 Aerial Photograph

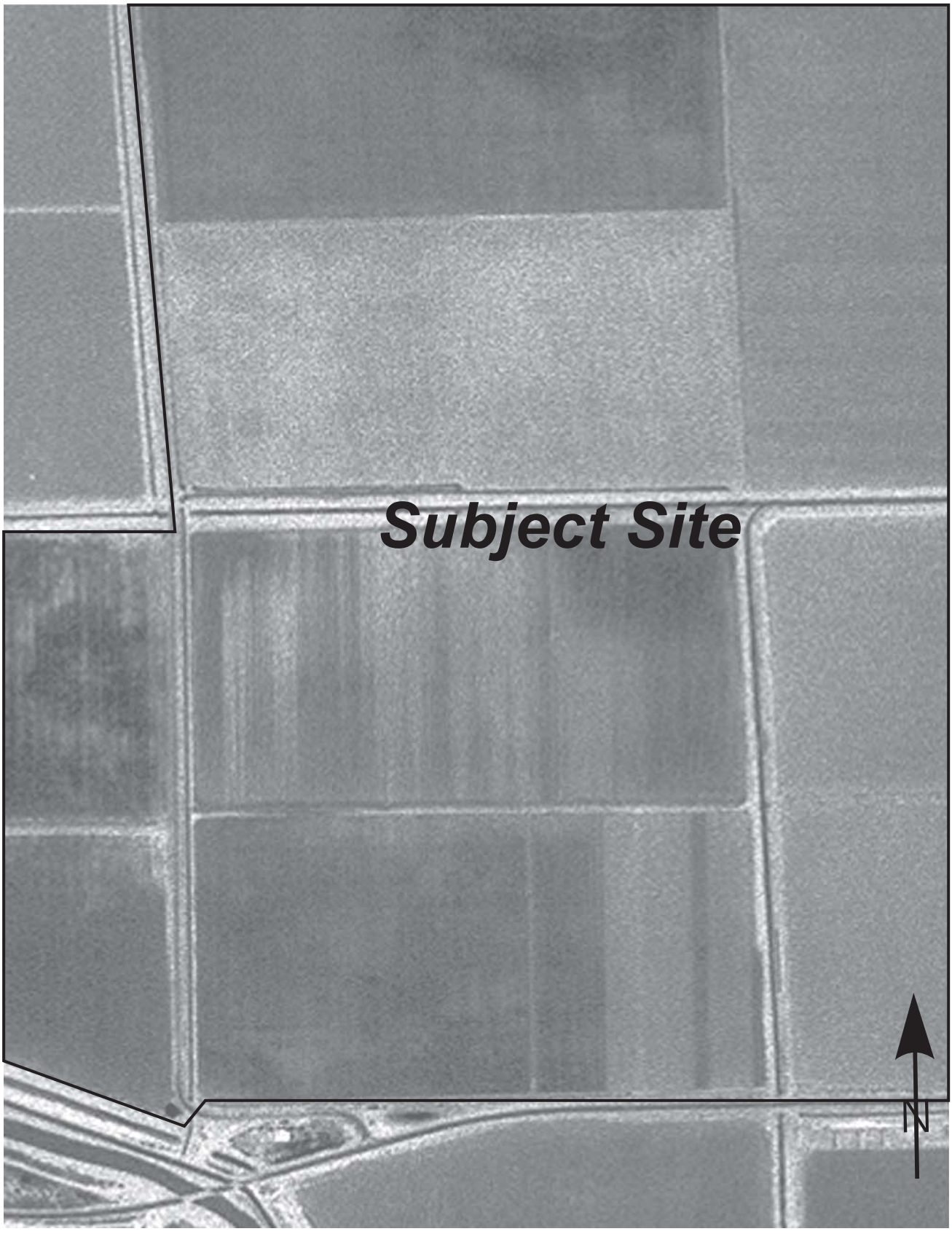
Plate 8

GSLyon

Project No.: GS1736

1965 Aerial Photograph

Plate 9

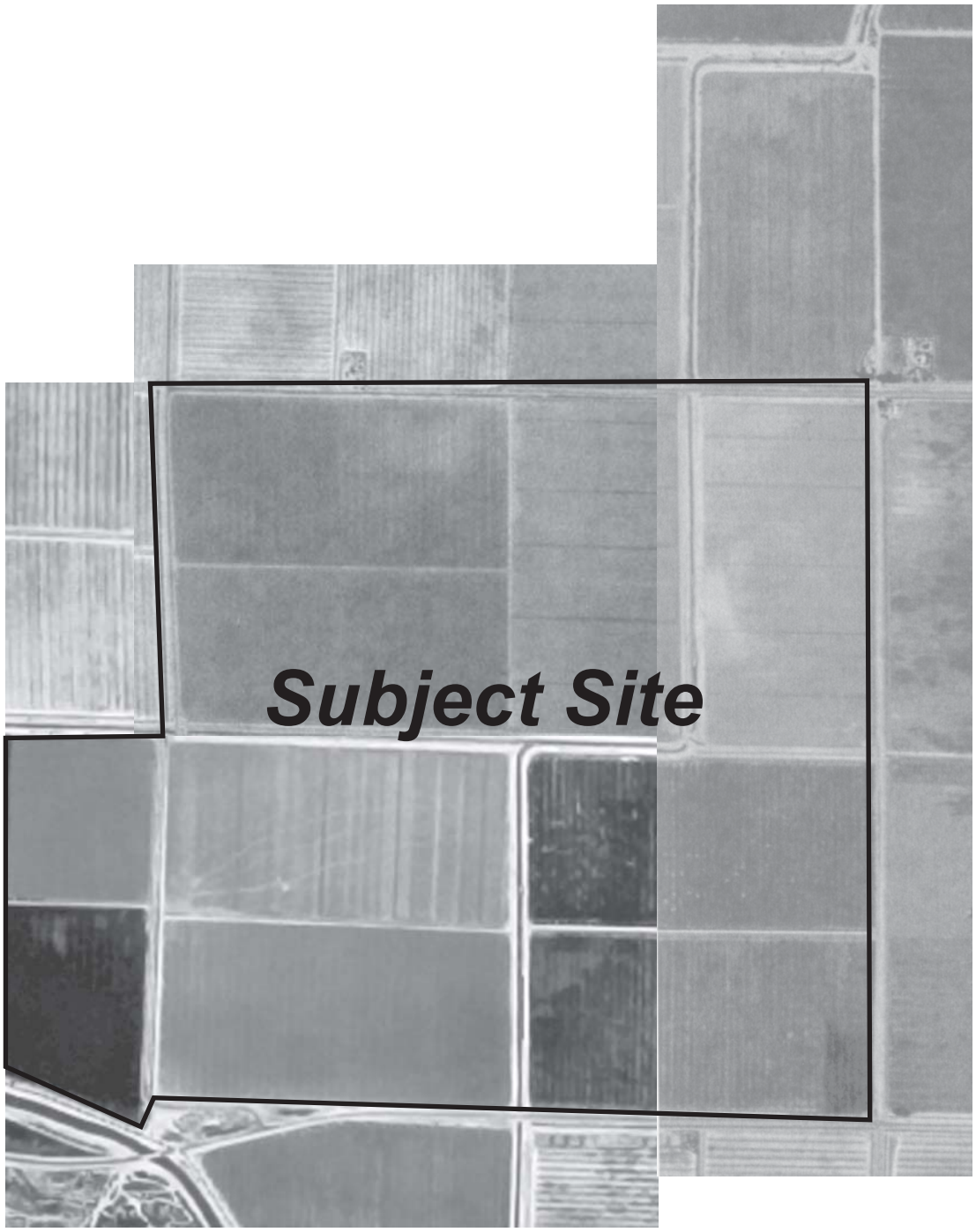


GS Lyon

Project No.: GS1736

1976 Aerial Photograph

Plate 10



GS Lyon

Project No.: GS1736

1985 Aerial Photograph

Plate 11

N

GS Lyon

Project No.: GS1736

1996 Aerial Photograph

Plate 12

N

GS Lyon

Project No.: GS1736

2002 Aerial Photograph

Plate 13

N

GS Lyon

Project No.: GS1736

2008 Aerial Photograph

Plate 14

N

GS Lyon

Project No.: GS1736

2013 Aerial Photograph

Plate 15

N

GS Lyon

Project No.: GS1736

2014 Aerial Photograph

Plate 16

APPENDIX D

Drew Solar Project

Drew Road and Highway 98

Calexico, CA 92231

Inquiry Number: 5098359.4

November 06, 2017

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

11/06/17

Site Name:

Drew Solar Project
Drew Road and Highway 98
Calexico, CA 92231
EDR Inquiry # 5098359.4

Client Name:

GS Lyon Consultants
780 N. Fourth Street
El Centro, CA 92243
Contact: Pete Labrucherie

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by GS Lyon Consultants were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# GS1736
Project: Drew Solar Project

Coordinates:

Latitude:	32.68627 32° 41' 11" North
Longitude:	-115.669326 -115° 40' 10" West
UTM Zone:	Zone 11 North
UTM X Meters:	624748.80
UTM Y Meters:	3617290.08
Elevation:	-15.00' below sea level

Maps Provided:

2012
1976
1957
1947
1943
1940

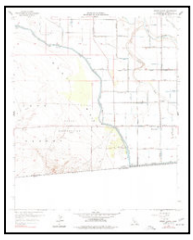
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets

Mount Signal
2012
7.5-minute, 24000

1976 Source Sheets

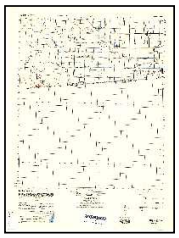


Mount Signal
1976
7.5-minute, 24000
Aerial Photo Revised 1953

1957 Source Sheets

Mount Signal
1957
7.5-minute, 24000
Aerial Photo Revised 1953

1947 Source Sheets



HEBER
1947
15-minute, 50000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1943 Source Sheets

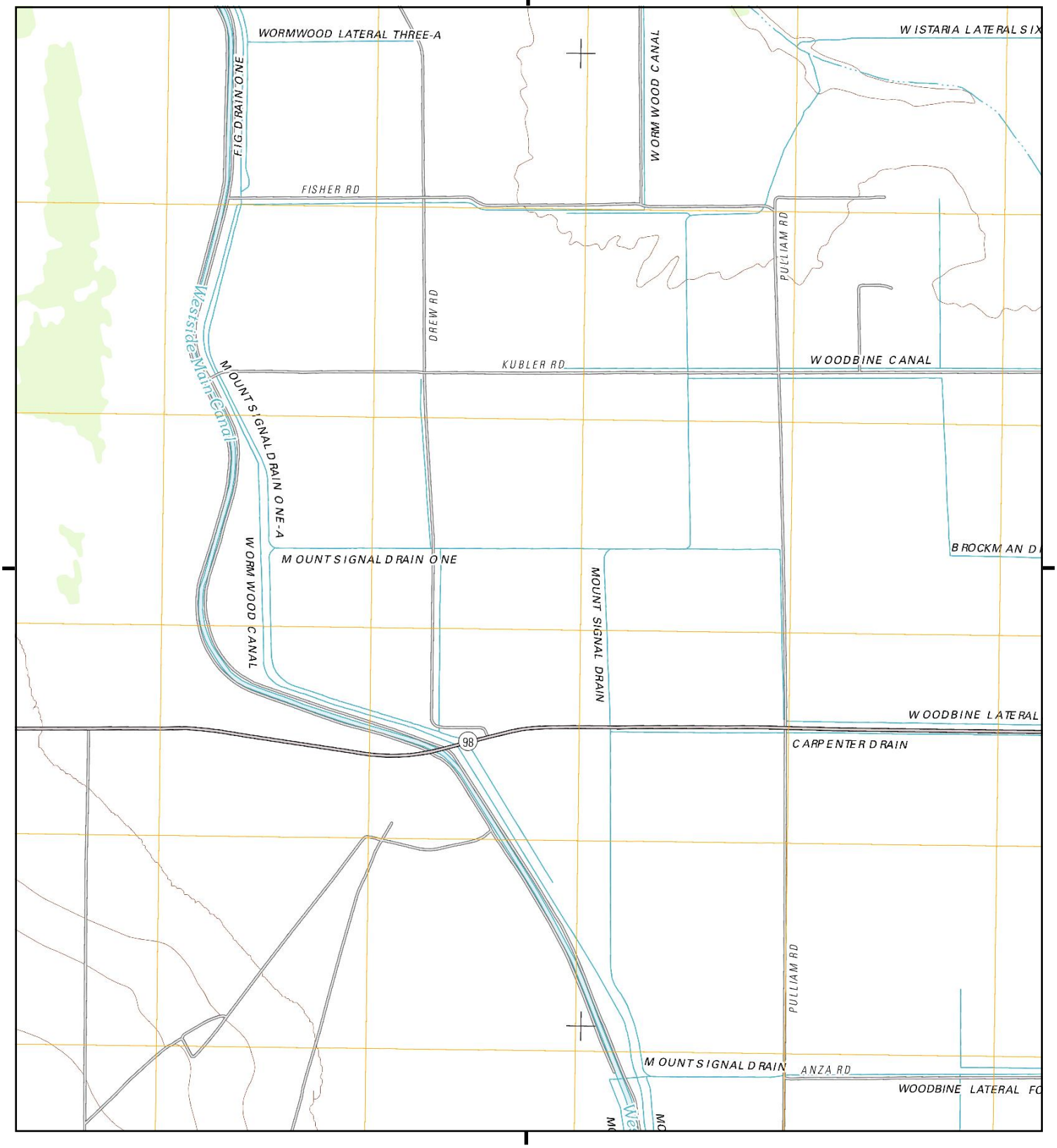
Heber
1943
15-minute, 62500
Aerial Photo Revised 1940

1940 Source Sheets

Heber
1940
15-minute, 62500
Aerial Photo Revised 1940

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

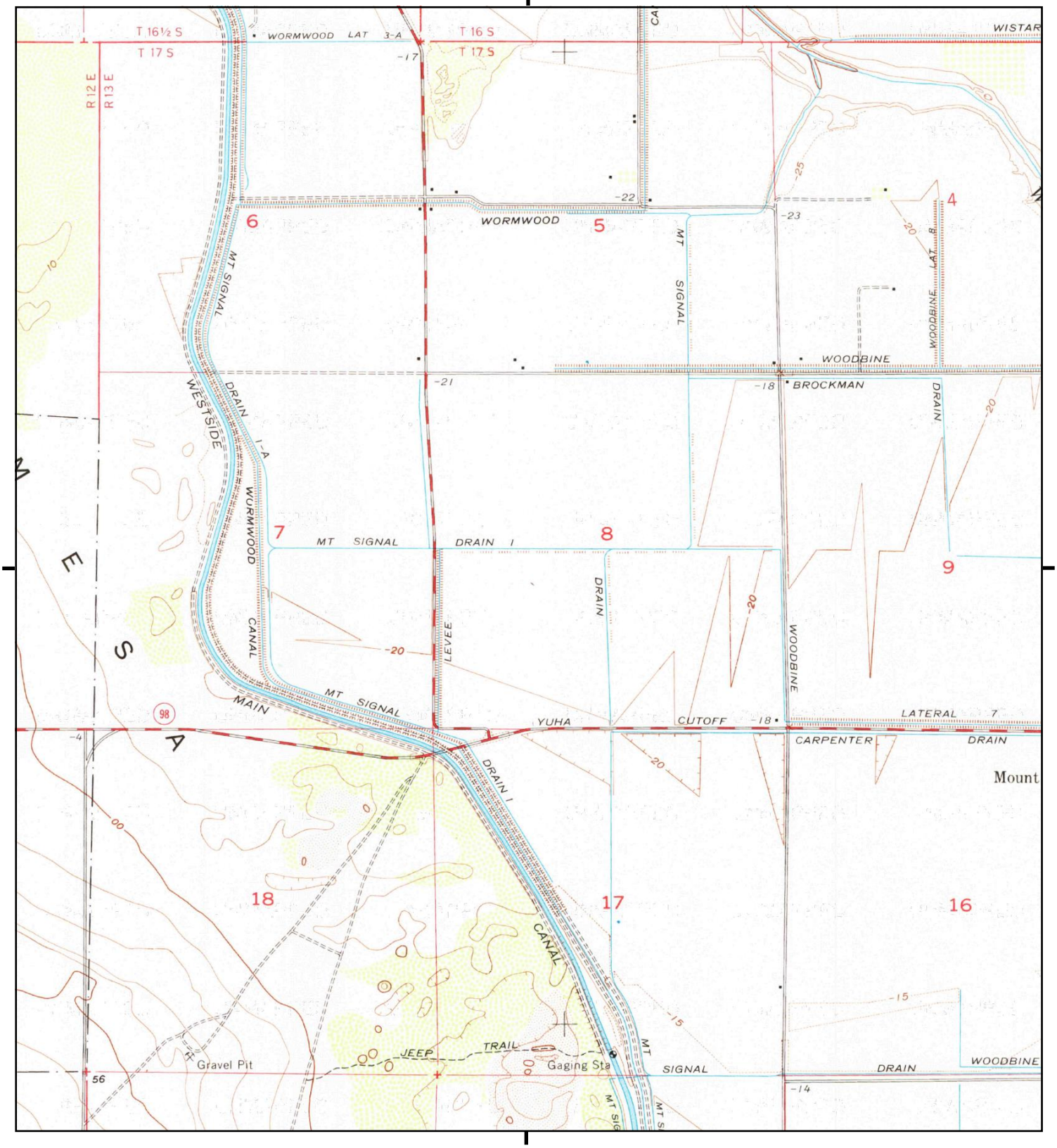
TP, Mount Signal, 2012, 7.5-minute

SITE NAME: Drew Solar Project
ADDRESS: Drew Road and Highway 98
Calexico, CA 92231
CLIENT: GS Lyon Consultants

N

Historical Topo Map

1976



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

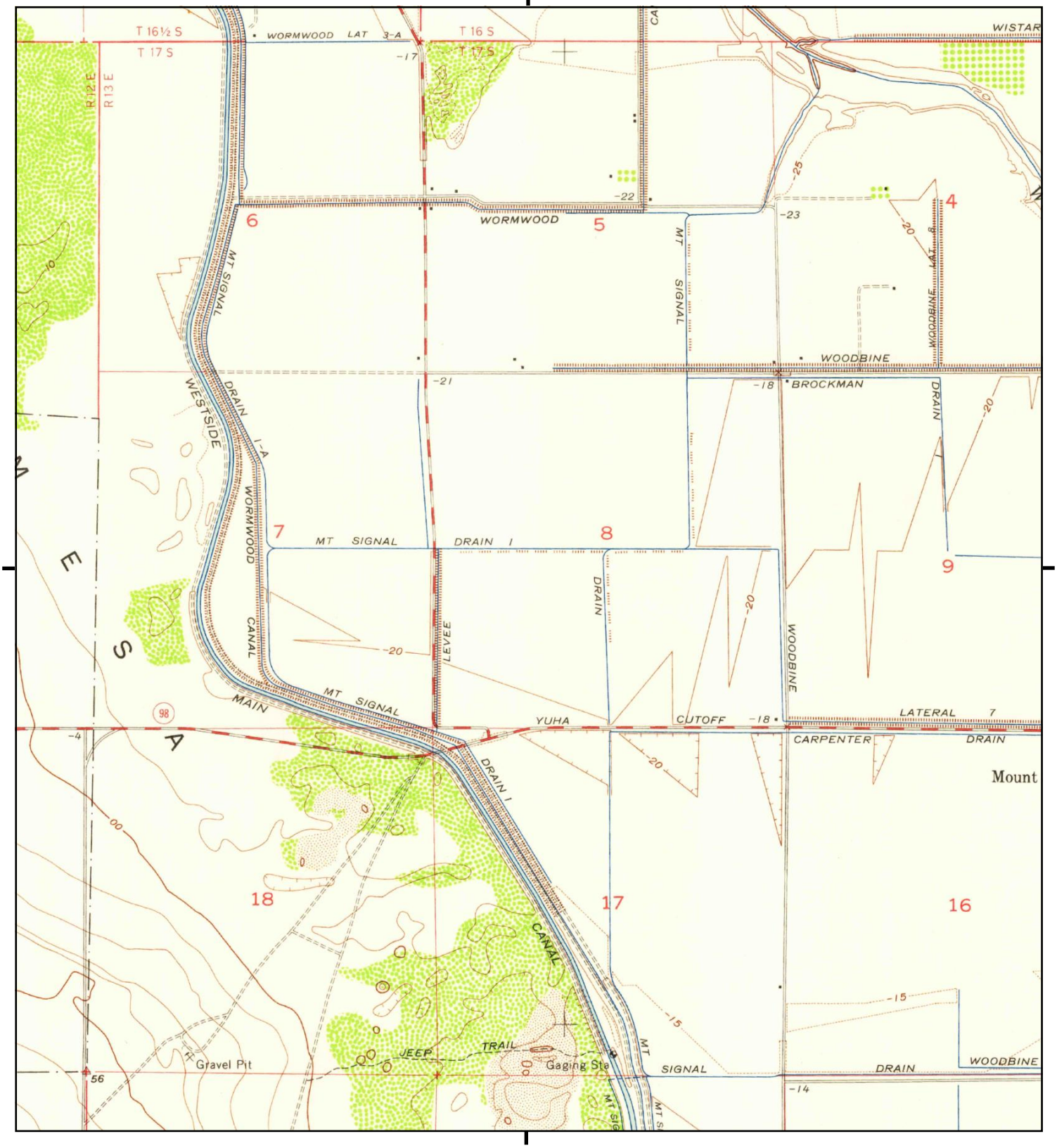
TP, Mount Signal, 1976, 7.5-minute

SITE NAME: Drew Solar Project
ADDRESS: Drew Road and Highway 98
Calexico, CA 92231
CLIENT: GS Lyon Consultants

N

Historical Topo Map

1957



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

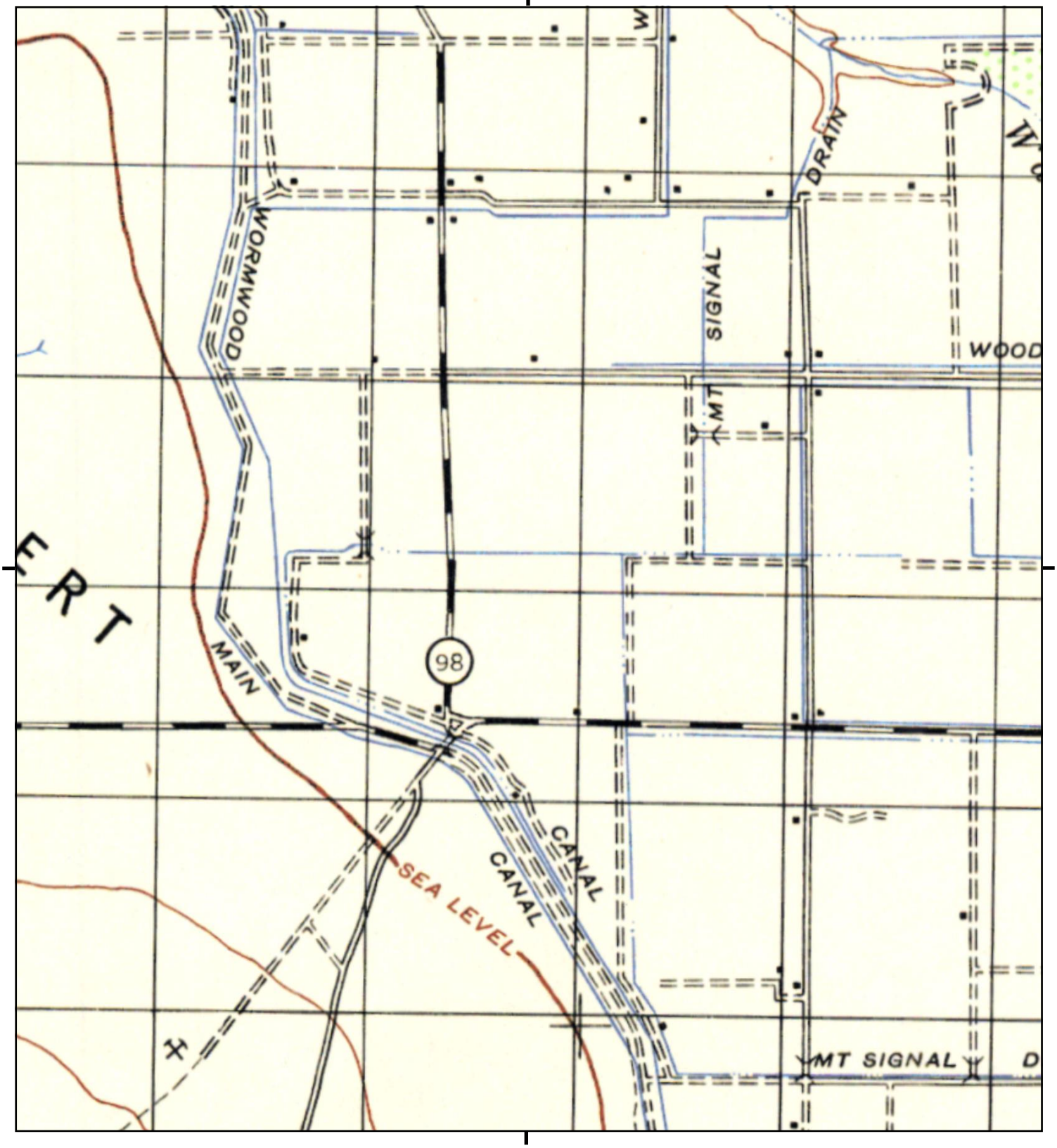
TP, Mount Signal, 1957, 7.5-minute

SITE NAME: Drew Solar Project
ADDRESS: Drew Road and Highway 98
Calexico, CA 92231
CLIENT: GS Lyon Consultants

N

Historical Topo Map

1947



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

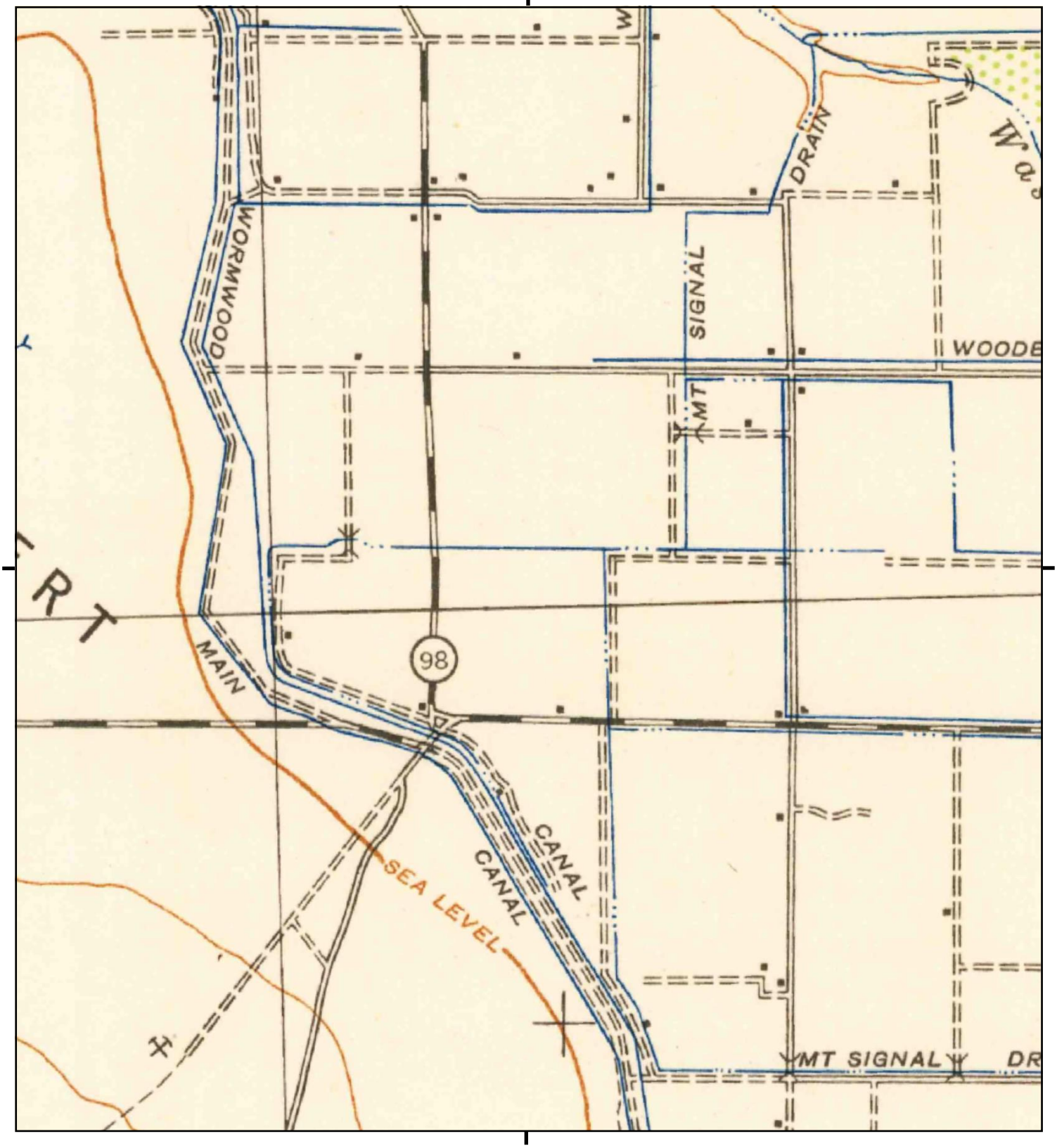
TP, HEBER, 1947, 15-minute

SITE NAME: Drew Solar Project
ADDRESS: Drew Road and Highway 98
Calexico, CA 92231
CLIENT: GS Lyon Consultants

N

Historical Topo Map

1943



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

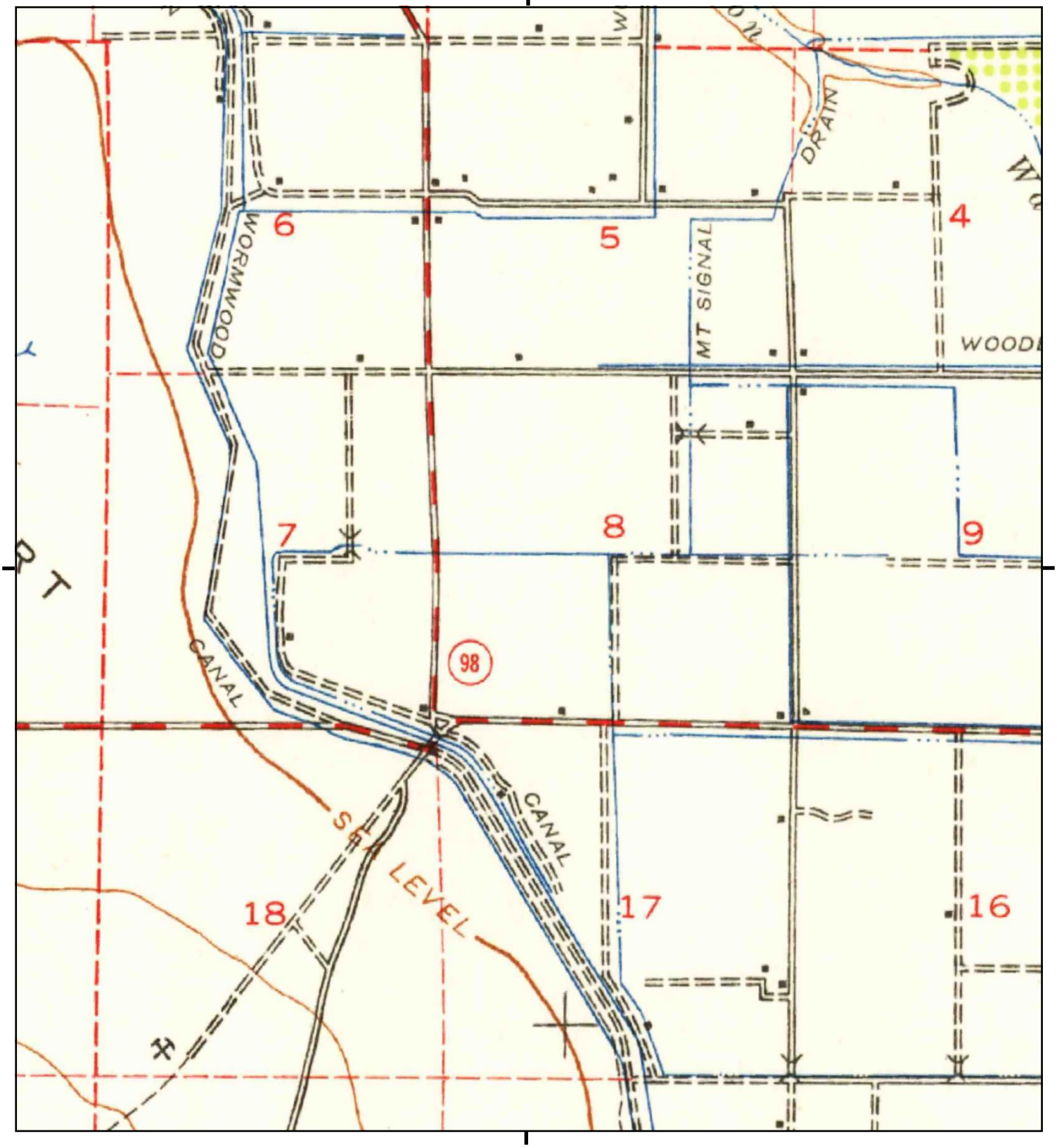
TP, Heber, 1943, 15-minute

SITE NAME: Drew Solar Project
ADDRESS: Drew Road and Highway 98
Calexico, CA 92231
CLIENT: GS Lyon Consultants

N

Historical Topo Map

1940



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Heber, 1940, 15-minute

SITE NAME: Drew Solar Project
ADDRESS: Drew Road and Highway 98
Calexico, CA 92231
CLIENT: GS Lyon Consultants

N

APPENDIX E

Drew Solar Project

Drew Road and Highway 98

Calexico, CA 92231

Inquiry Number: 5098359.3

November 06, 2017

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

11/06/17

Site Name:

Drew Solar Project
Drew Road and Highway 98
Calexico, CA 92231
EDR Inquiry # 5098359.3

Client Name:

GS Lyon Consultants
780 N. Fourth Street
El Centro, CA 92243
Contact: Pete Labrucherie

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by GS Lyon Consultants were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 1040-45E7-9185

PO # GS1736

Project Drew Solar Project

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 1040-45E7-9185

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

Limited Permission To Make Copies

GS Lyon Consultants (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

APPENDIX F

EDR DataMap®
Area Study

Drew Solar Project

- Listed Sites
- Earthquake Epicenters (Richter 5 or greater)
- Search Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Pipelines
- Powerlines
- Fault Lines
- Water
- Superfund Sites
- Federal DOD Sites
- Indian Reservations BIA
- 100-Yr Flood Zones
- National Wetland Inventory

Calexico, CA

0 1/4 1/2

Scale in Miles

EDR® Environmental Data Resources Inc

Drew Solar Project
Calexico, CA 92231

Inquiry Number: 5119562.1s
November 29, 2017

EDR DataMap™ Area Study

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

CALEXICO, CA 92231
CALEXICO, CA 92231

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL RECORDS

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL LIENS	Federal Superfund Liens
SEMS	Superfund Enterprise Management System
SEMS-ARCHIVE	Superfund Enterprise Management System Archive
LIENS 2	CERCLA Lien Information
CORRACTS	Corrective Action Report
RCRA-TSDF	RCRA - Treatment, Storage and Disposal
RCRA-LQG	RCRA - Large Quantity Generators
RCRA-SQG	RCRA - Small Quantity Generators
RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generator
RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
DOT OPS	Incident and Accident Data
US CDL	National Clandestine Laboratory Register
US BROWNFIELDS	A Listing of Brownfields Sites
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
LUCIS	Land Use Control Information System
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
US MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems

EXECUTIVE SUMMARY

ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System
RMP	Risk Management Plans
ECHO	Enforcement & Compliance History Information
FUELS PROGRAM	EPA Fuels Program Registered Listing
DOCKET HWC	Hazardous Waste Compliance Docket Listing
UXO	Unexploded Ordnance Sites
FUSRAP	Formerly Utilized Sites Remedial Action Program
COAL ASH DOE	Steam-Electric Plant Operation Data
2020 COR ACTION	2020 Corrective Action Program List
PRP	Potentially Responsible Parties
EPA WATCH LIST	EPA WATCH LIST
US FIN ASSUR	Financial Assurance Information
PCB TRANSFORMER	PCB Transformer Registration Database
US HIST CDL	Delisted National Clandestine Laboratory Register
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
IHS OPEN DUMPS	Open Dumps on Indian Land
ABANDONED MINES	Abandoned Mines
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
FEMA UST	Underground Storage Tank Listing
FEDERAL FACILITY	Federal Facility Site Information listing
US AIRS	Aerometric Information Retrieval System Facility Subsystem
LEAD SMELTERS	Lead Smelter Sites

STATE AND LOCAL RECORDS

HIST Cal-Sites	Historical Calsites Database
CA BOND EXP. PLAN	Bond Expenditure Plan
SCH	School Property Evaluation Program
Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System
WDS	Waste Discharge System
NPDES	NPDES Permits Listing
UIC	UIC Listing
Cortese	"Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE	Hazardous Waste & Substance Site List
SWRCY	Recycler Database
LUST	Geotracker's Leaking Underground Fuel Tank Report
CA FID UST	Facility Inventory Database
SLIC	Statewide SLIC Cases
UST	Active UST Facilities
HIST UST	Hazardous Substance Storage Container Database
LIENS	Environmental Liens Listing
SWEEPS UST	SWEEPS UST Listing
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
AST	Aboveground Petroleum Storage Tank Facilities
Notify 65	Proposition 65 Records
DEED	Deed Restriction Listing
VCP	Voluntary Cleanup Program Properties

DRYCLEANERS Cleaner Facilities
WIP Well Investigation Program Case List
ENF Enforcement Action Listing
CDL Clandestine Drug Labs
RESPONSE State Response Sites
HAZNET Facility and Manifest Data
EMI Emissions Inventory Data
HAULERS Registered Waste Tire Haulers Listing
ENVIROSTOR EnviroStor Database
MINES Mines Site Location Listing
MWMP Medical Waste Management Program Listing
PEST LIC Pesticide Regulation Licenses Listing
HWP EnviroStor Permitted Facilities Listing
BROWNFIELDS Considered Brownfieds Sites Listing
PROC Certified Processors Database
HWT Registered Hazardous Waste Transporter Database
ICE ICE
WASTEWATER PITS Oil Wastewater Pits Listing
WMUDS/SWAT Waste Management Unit Database

TRIBAL RECORDS

INDIAN RESERV Indian Reservations
INDIAN ODI Report on the Status of Open Dumps on Indian Lands
INDIAN LUST Leaking Underground Storage Tanks on Indian Land
INDIAN UST Underground Storage Tanks on Indian Land
INDIAN VCP Voluntary Cleanup Priority Listing

EDR PROPRIETARY RECORDS

EDR MGP EDR Proprietary Manufactured Gas Plants
EDR Hist Auto EDR Exclusive Historical Auto Stations
EDR Hist Cleaner EDR Exclusive Historical Cleaners
RGA LUST Recovered Government Archive Leaking Underground Storage Tank
RGA LF Recovered Government Archive Solid Waste Facilities List

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STATE AND LOCAL RECORDS

CUPA Listings: A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

A review of the CUPA Listings list, as provided by EDR, has revealed that there is 1 CUPA Listings

site within the searched area.

Site	Address	Map ID	Page
SDG&E - DREW ROAD SW	DREW ROAD & HIGHWAY	1	4

Database: CUPA IMPERIAL, Date of Government Version: 10/23/2017

EXECUTIVE SUMMARY

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

MAP FINDINGS SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
SEMS	0
SEMS-ARCHIVE	0
LIENS 2	0
CORRACTS	0
RCRA-TSDF	0
RCRA-LQG	0
RCRA-SQG	0
RCRA-CESQG	0
RCRA NonGen / NLR	0
US ENG CONTROLS	0
US INST CONTROL	0
ERNS	0
HMIRS	0
DOT OPS	0
US CDL	0
US BROWNFIELDS	0
DOD	0
FUDS	0
LUCIS	0
CONSENT	0
ROD	0
UMTRA	0
ODI	0
DEBRIS REGION 9	0
US MINES	0
TRIS	0
TSCA	0
FTTS	0
HIST FTTS	0
SSTS	0
ICIS	0
PADS	0
MLTS	0
RADINFO	0
FINDS	0
RAATS	0
RMP	0
ECHO	0
FUELS PROGRAM	0
DOCKET HWC	0
UXO	0
FUSRAP	0
COAL ASH DOE	0
2020 COR ACTION	0

MAP FINDINGS SUMMARY

Database	Total Plotted
PRP	0
EPA WATCH LIST	0
US FIN ASSUR	0
PCB TRANSFORMER	0
US HIST CDL	0
SCRD DRYCLEANERS	0
IHS OPEN DUMPS	0
ABANDONED MINES	0
COAL ASH EPA	0
FEMA UST	0
FEDERAL FACILITY	0
US AIRS	0
LEAD SMELTERS	0

STATE AND LOCAL RECORDS

HIST Cal-Sites	0
CA BOND EXP. PLAN	0
SCH	0
Toxic Pits	0
SWF/LF	0
WDS	0
NPDES	0
UIC	0
Cortese	0
HIST CORTESE	0
SWRCY	0
LUST	0
CA FID UST	0
SLIC	0
UST	0
HIST UST	0
LIENS	0
CUPA Listings	1
SWEEPS UST	0
CHMIRS	0
LDS	0
MCS	0
AST	0
Notify 65	0
DEED	0
VCP	0
DRYCLEANERS	0
WIP	0
ENF	0
CDL	0
RESPONSE	0
HAZNET	0
EMI	0
HAULERS	0
ENVIROSTOR	0

MAP FINDINGS SUMMARY

Database	Total Plotted
MINES	0
MWMP	0
PEST LIC	0
HWP	0
BROWNFIELDS	0
PROC	0
HWT	0
ICE	0
WASTEWATER PITS	0
WMUDS/SWAT	0

TRIBAL RECORDS

INDIAN RESERV	0
INDIAN ODI	0
INDIAN LUST	0
INDIAN UST	0
INDIAN VCP	0

EDR PROPRIETARY RECORDS

EDR MGP	0
EDR Hist Auto	0
EDR Hist Cleaner	0
RGA LUST	0
RGA LF	0

NOTES:

Sites may be listed in more than one database

Map ID / Direction / Distance / Distance (ft.)	Site	Database(s)	EDR ID Number / EPA ID Number
1	**SDG&E - DREW ROAD SWITCHYARD** **DREW ROAD & HIGHWAY 98** **CALEXICO, CA 92231**	**CUPA Listings**	**S117726277** **N/A**

CUPA IMPERIAL:
Facility ID: FA0001258
Region: IMPERIAL

Count: 24 records

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CALEXICO	S118421468	VERIZON WIRELESS: NORTH CALEXICO	559-565 HIGHWAY 111	92231	CUPA Listings
CALEXICO	S113663160	ROBCO FARMS, INC.	200 HIGHWAY 98	92231	CUPA Listings
CALEXICO	S111785844	NEXTEL OF CALIFORNIA SITE CA8984	HWY 98	92231	CUPA Listings
CALEXICO	S111785782	NEXTEL OF CALIFORNIA SITE CA5844	HWY 98-TRACT 50	92231	CUPA Listings
CALEXICO	S113450063	CSOLAR TO DREW SUBSTATION 230KV TRANSMISSION LINE	SR98 AND MANDRAPA ROAD	92231	NPDES
CALEXICO	1023350581	SDG&E - DREW ROAD SWITCHYARD	DREW RD & HWY 98	92231	FINDS
CALEXICO	S111785709	VERIZON WIRELESS(SITE: MIDWAY WELLS	4710 E HIGHWAY 98	92231	CUPA Listings
CALEXICO	S111785683	AT&T MOBILITY-UNION PACIFIC TOWER	E HIGHWAY 98	92231	CUPA Listings
CALEXICO	1003879886	A & A AUTO DISMANTLERS	30 WEST HIGHWAY 98	92231	SEMS-ARCHIVE, NPDES, WDS
CALEXICO	S111785338	A & A AUTO DISMANTLERS	30 W HWY 98	92231	CUPA Listings
CALEXICO	1003879888	CALEXICO COUNTY LANDFILL	3 MILES W. OF CALEXICO ON HAMMERS RD.	92231	SEMS-ARCHIVE
CALEXICO	S112241558	200MW MOUNT SOLAR MSS PV PLANT	STATE HWY 98 BETWEEN FERRELL AND PULLIAM ROADS	92231	NPDES
CALEXICO	S111785786	NEXTEL OF CALIFORNIA SITE CA5850	STATE HWY 98	92231	CUPA Listings
IMPERIAL COUNTY	1015730569	TORREZ-MARTINEZ DRUG LAB	POSTAL ADDRESS IS UNAVAILABLE FOR THE SITE		SEMS
MECCA	S111459402	AVENUE 62 COMMUNITY SEWER PROJECT	SOUTHWEST CORNER OF AVENUE 62 AND PIERCE STREET	92274	NPDES
OCOTILLO	S111785735	AT&T CORP.-CAR190	EVAN HEWES HWY & 1 MI N/O	92274	CUPA Listings
THERMAL	S105027062	JPH ENTERPRISES	HWY 111/AVENUE 60	92274	HIST CORTESE
THERMAL	S118408141	BRITO RANCH	78-479 HWY 86	92274	HIST UST
THERMAL	U001574231	TINACHI RANCH	HIGHWAY 86	92274	HIST UST
THERMAL	U001574202	HORNUNG RANCH	92-770 HWY 86	92274	HIST UST
THERMAL	S118416178	TINACMI RANCH	HIGHWAY 86	92274	HIST UST
THERMAL	U001574217	PETER RABBIT FARMS	AVE 58 BETWEEN HWY 86 AND VAN	92274	HIST UST
THERMAL	1010313704	DESERT MOBILE HOME PARK INC	68 800 HWY 195	92274	RCRA-CESQG, HAZNET
THERMAL	1015730669	TORRES MARTINEZ PESTICIDE SITE	EAST OF OF HWY 195 AND 68TH STREET	92274	SEMS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 06/08/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 99

Source: EPA
Telephone: N/A
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 98

Source: EPA
Telephone: N/A
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 98

Source: EPA
Telephone: N/A
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/11/2017
Date Data Arrived at EDR: 07/21/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 77

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Quarterly

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/11/2017
Date Data Arrived at EDR: 07/28/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 70

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 07/11/2017
Date Data Arrived at EDR: 07/26/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Semi-Annually

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 10

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/10/2017
Date Data Arrived at EDR: 08/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/27/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 08/10/2017
Date Data Arrived at EDR: 08/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/27/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: Varies

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/18/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/21/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/21/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/21/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 10/31/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 07/13/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 30

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/28/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: Quarterly

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/19/2017
Date Data Arrived at EDR: 06/20/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/20/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: Semi-Annually

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/13/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/22/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/22/2017
Date Data Arrived at EDR: 06/13/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 94

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/08/2017
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2017
Date Data Arrived at EDR: 08/03/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 78

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 09/27/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 8

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/22/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/20/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 07/31/2017
Date Data Arrived at EDR: 08/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 44

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 11/28/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/01/2017
Next Scheduled EDR Contact: 12/11/2017
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 09/01/2017
Next Scheduled EDR Contact: 12/11/2017
Data Release Frequency: Varies

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/20/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/22/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 10/11/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/13/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/16/2017
Next Scheduled EDR Contact: 11/20/2017
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2017
Date Data Arrived at EDR: 10/05/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 8

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/05/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/23/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 9

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 09/06/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2017
Date Data Arrived at EDR: 02/09/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/23/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218
Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 11/20/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Biennially

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92
Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/06/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Varies

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 10/03/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Varies

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100
Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100
Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/10/2017
Date Data Arrived at EDR: 05/17/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 121
Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/06/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Quarterly

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/08/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/13/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Varies

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/17/2017
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: Varies

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 07/13/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 30

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/28/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: No Update Planned

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2016
Date Data Arrived at EDR: 06/02/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 133
Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 10/16/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Varies

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Quarterly

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36
Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 98
Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 11/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Varies

2020 COR ACTION: 2020 Corrective Action Program List
The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6
Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/09/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 02/13/2017
Date Data Arrived at EDR: 02/15/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 261
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 11/21/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/25/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 24

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/02/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 09/06/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Quarterly

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 11/02/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 10/26/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/17/2017
Date Data Arrived at EDR: 08/17/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 29

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/20/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Quarterly

STATE AND LOCAL RECORDS

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 07/31/2017
Date Data Arrived at EDR: 08/01/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 14

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/31/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/14/2017
Date Data Arrived at EDR: 08/17/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 35

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: Quarterly

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Quarterly

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 08/14/2017
Date Data Arrived at EDR: 08/17/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 61

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 01/20/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 50

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/12/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 09/21/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/21/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 09/11/2017
Date Data Arrived at EDR: 09/12/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 9

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/12/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Quarterly

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/11/2017
Date Data Arrived at EDR: 09/12/2017
Date Made Active in Reports: 11/09/2017
Number of Days to Update: 58

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 09/12/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases (GEOTRACKER)

Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/11/2017
Date Data Arrived at EDR: 09/12/2017
Date Made Active in Reports: 11/09/2017
Number of Days to Update: 58

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/12/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 09/11/2017
Date Data Arrived at EDR: 09/12/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 57

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 09/12/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Semi-Annually

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 06/02/2017
Date Data Arrived at EDR: 06/06/2017
Date Made Active in Reports: 08/25/2017
Number of Days to Update: 80

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 11/28/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 08/31/2017
Date Data Arrived at EDR: 09/05/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/31/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Varies

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 05/09/2017
Date Data Arrived at EDR: 07/26/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 57

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/11/2017
Date Data Arrived at EDR: 09/12/2017
Date Made Active in Reports: 11/09/2017
Number of Days to Update: 58

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/12/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Quarterly

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/11/2017
Date Data Arrived at EDR: 09/12/2017
Date Made Active in Reports: 11/09/2017
Number of Days to Update: 58

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 09/12/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 06/16/2017
Date Data Arrived at EDR: 06/20/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 119

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/18/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: No Update Planned

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 09/05/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 63

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 09/06/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Semi-Annually

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 07/31/2017
Date Data Arrived at EDR: 08/01/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 14

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/31/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/02/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 69

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 08/08/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2017
Date Data Arrived at EDR: 08/18/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 34

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 10/10/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/18/2017
Date Data Arrived at EDR: 08/22/2017
Date Made Active in Reports: 10/24/2017
Number of Days to Update: 63

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 07/31/2017
Date Data Arrived at EDR: 08/01/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 14

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/31/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Quarterly

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 97

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/10/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 03/21/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 147

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/22/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: Varies

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 05/31/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 76

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 11/09/2017
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: Varies

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 07/31/2017
Date Data Arrived at EDR: 08/01/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 14

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/31/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 09/01/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 63

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 09/06/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Varies

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 09/05/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 63

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 09/06/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Quarterly

WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 10/13/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/10/2017
Date Data Arrived at EDR: 10/10/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 7

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/10/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Quarterly

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/21/2017
Date Data Arrived at EDR: 08/22/2017
Date Made Active in Reports: 10/25/2017
Number of Days to Update: 64

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/20/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 09/11/2017
Date Data Arrived at EDR: 09/12/2017
Date Made Active in Reports: 10/18/2017
Number of Days to Update: 36
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/12/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Quarterly

ICE: ICE
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 08/21/2017
Date Data Arrived at EDR: 08/22/2017
Date Made Active in Reports: 10/25/2017
Number of Days to Update: 64
Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 11/20/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 09/11/2017
Date Data Arrived at EDR: 09/12/2017
Date Made Active in Reports: 11/01/2017
Number of Days to Update: 50
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/12/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Quarterly

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 09/21/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 11/09/2017
Number of Days to Update: 49
Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/21/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30
Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 11/06/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: No Update Planned

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546
Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/11/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Semi-Annually

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/30/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/07/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 11/07/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/25/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 05/02/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 10/01/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 10/27/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 09/22/2017
Date Data Arrived at EDR: 09/22/2017
Date Made Active in Reports: 10/10/2017
Number of Days to Update: 18

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/21/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 27

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 10/10/2017
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 09/13/2017
Date Data Arrived at EDR: 09/15/2017
Date Made Active in Reports: 11/14/2017
Number of Days to Update: 60

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 08/31/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 09/18/2017
Next Scheduled EDR Contact: 10/23/2017
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing

Cupa Facility Listing

Date of Government Version: 08/31/2017
Date Data Arrived at EDR: 09/05/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 64

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/05/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 08/07/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 69

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 08/17/2017
Date Data Arrived at EDR: 08/22/2017
Date Made Active in Reports: 10/25/2017
Number of Days to Update: 64

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 10/30/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 10/31/2017
Date Data Arrived at EDR: 11/01/2017
Date Made Active in Reports: 11/14/2017
Number of Days to Update: 13

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 10/25/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/18/2017
Date Data Arrived at EDR: 08/22/2017
Date Made Active in Reports: 10/24/2017
Number of Days to Update: 63

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 10/30/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/03/2017
Date Data Arrived at EDR: 10/06/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 40

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 09/27/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 10/25/2017
Date Data Arrived at EDR: 10/27/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 19

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 10/23/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/03/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 69

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 10/24/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 22

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/23/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/08/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 56

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 08/07/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 44

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 09/22/2017
Date Data Arrived at EDR: 09/22/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 24

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 11/09/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 5

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/16/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 07/24/2017
Date Data Arrived at EDR: 07/26/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 82

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 10/23/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 09/18/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: No Update Planned

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 5

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/10/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 07/17/2017
Date Data Arrived at EDR: 07/18/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 65

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/17/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 04/21/2017
Date Made Active in Reports: 10/09/2017
Number of Days to Update: 171

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 10/16/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 06/21/2017
Date Data Arrived at EDR: 06/23/2017
Date Made Active in Reports: 10/30/2017
Number of Days to Update: 129

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/16/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/23/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 07/11/2017
Date Data Arrived at EDR: 07/14/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 69

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/10/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 10/26/2017
Date Data Arrived at EDR: 10/27/2017
Date Made Active in Reports: 11/06/2017
Number of Days to Update: 10

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/28/2017
Date Data Arrived at EDR: 10/05/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 34

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 09/27/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 10/02/2017
Date Data Arrived at EDR: 10/03/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 14

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 40

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 11/21/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 09/11/2017
Date Data Arrived at EDR: 09/15/2017
Date Made Active in Reports: 11/28/2017
Number of Days to Update: 74

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 11/20/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/21/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 08/24/2017
Date Data Arrived at EDR: 08/25/2017
Date Made Active in Reports: 10/27/2017
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/21/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 8

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 10/25/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 08/07/2017
Date Data Arrived at EDR: 08/11/2017
Date Made Active in Reports: 10/11/2017
Number of Days to Update: 61

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/06/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 08/07/2017
Date Data Arrived at EDR: 08/11/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 41

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/06/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 08/07/2017
Date Data Arrived at EDR: 08/09/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 43

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/07/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 09/05/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 63
Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/31/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 12
Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/09/2017
Number of Days to Update: 28
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/18/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 27
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/18/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/02/2017
Date Data Arrived at EDR: 10/03/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 3
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/02/2017
Date Data Arrived at EDR: 10/03/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 44
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/03/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 11/17/2017
Number of Days to Update: 14

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 08/31/2017
Date Data Arrived at EDR: 09/19/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 58

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 11/06/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/05/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 63

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 09/06/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 10/23/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 08/31/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 05/03/2017
Date Data Arrived at EDR: 05/08/2017
Date Made Active in Reports: 08/25/2017
Number of Days to Update: 109
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 10/03/2017
Date Data Arrived at EDR: 10/06/2017
Date Made Active in Reports: 10/10/2017
Number of Days to Update: 4
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 08/28/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/18/2017
Date Data Arrived at EDR: 08/22/2017
Date Made Active in Reports: 10/25/2017
Number of Days to Update: 64
Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 09/15/2017
Date Data Arrived at EDR: 09/19/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 28
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/07/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 09/15/2017
Date Data Arrived at EDR: 09/19/2017
Date Made Active in Reports: 11/09/2017
Number of Days to Update: 51
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/07/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 08/07/2017
Date Data Arrived at EDR: 08/10/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 67

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 11/21/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 08/07/2017
Date Data Arrived at EDR: 08/15/2017
Date Made Active in Reports: 10/24/2017
Number of Days to Update: 70

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 09/26/2017
Date Data Arrived at EDR: 09/27/2017
Date Made Active in Reports: 11/10/2017
Number of Days to Update: 44

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 09/26/2017
Date Data Arrived at EDR: 09/27/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 42

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 09/25/2017
Date Data Arrived at EDR: 09/27/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 50

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 01/01/2018
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 10/03/2017
Date Data Arrived at EDR: 10/06/2017
Date Made Active in Reports: 11/10/2017
Number of Days to Update: 35

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/25/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 6

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 10/16/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Varies

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 08/31/2017
Date Data Arrived at EDR: 09/05/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 64

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 08/31/2017
Next Scheduled EDR Contact: 12/18/2017
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA Facility List
Cupa facilities

Date of Government Version: 07/19/2017
Date Data Arrived at EDR: 08/11/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 66

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 10/24/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 23

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 10/23/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

TULARE COUNTY:

CUPA Facility List
Cupa program facilities

Date of Government Version: 09/27/2017
Date Data Arrived at EDR: 09/28/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 18

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 02/19/2018
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 10/24/2017
Date Data Arrived at EDR: 10/25/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 22

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 10/23/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 06/26/2017
Date Data Arrived at EDR: 08/03/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 74

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/23/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/27/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/08/2017
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 06/26/2017
Date Data Arrived at EDR: 08/03/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 75

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/23/2017
Next Scheduled EDR Contact: 02/05/2018
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 08/28/2017
Date Data Arrived at EDR: 09/12/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 9

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/12/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 09/27/2017
Date Data Arrived at EDR: 10/02/2017
Date Made Active in Reports: 11/14/2017
Number of Days to Update: 43

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/27/2017
Next Scheduled EDR Contact: 01/15/2018
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 11/08/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 6

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 10/25/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/28/2017
Date Data Arrived at EDR: 08/18/2017
Date Made Active in Reports: 11/14/2017
Number of Days to Update: 88

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/14/2017
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 07/27/2017
Number of Days to Update: 107

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/05/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 10/01/2017
Date Data Arrived at EDR: 11/01/2017
Date Made Active in Reports: 11/13/2017
Number of Days to Update: 12

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 11/01/2017
Next Scheduled EDR Contact: 02/12/2018
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/25/2017
Date Made Active in Reports: 09/25/2017
Number of Days to Update: 62

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/16/2017
Next Scheduled EDR Contact: 01/29/2018
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/16/2017
Next Scheduled EDR Contact: 03/05/2018
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/13/2017
Date Made Active in Reports: 07/14/2017
Number of Days to Update: 92

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/11/2017
Next Scheduled EDR Contact: 12/25/2017
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

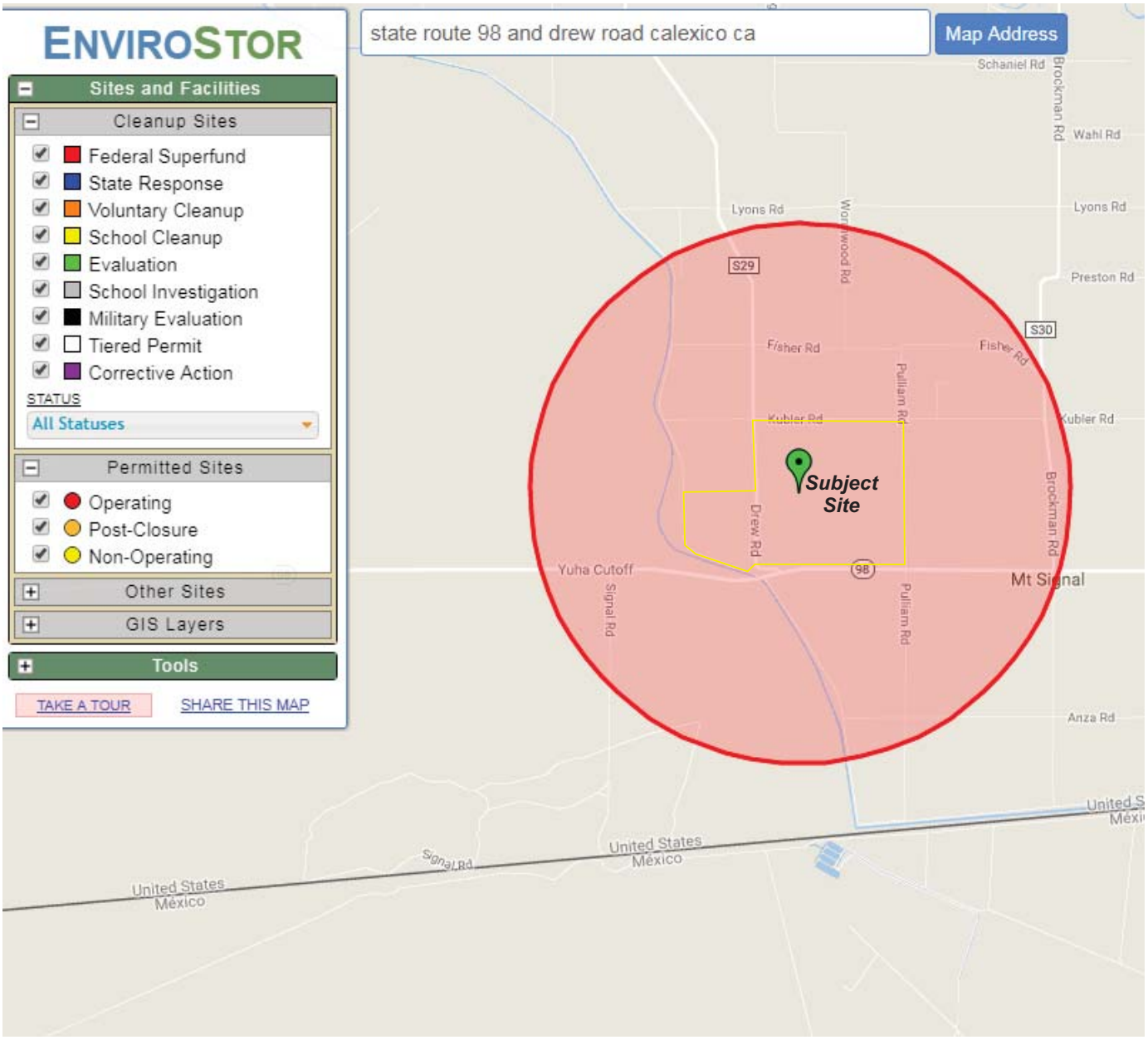
NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

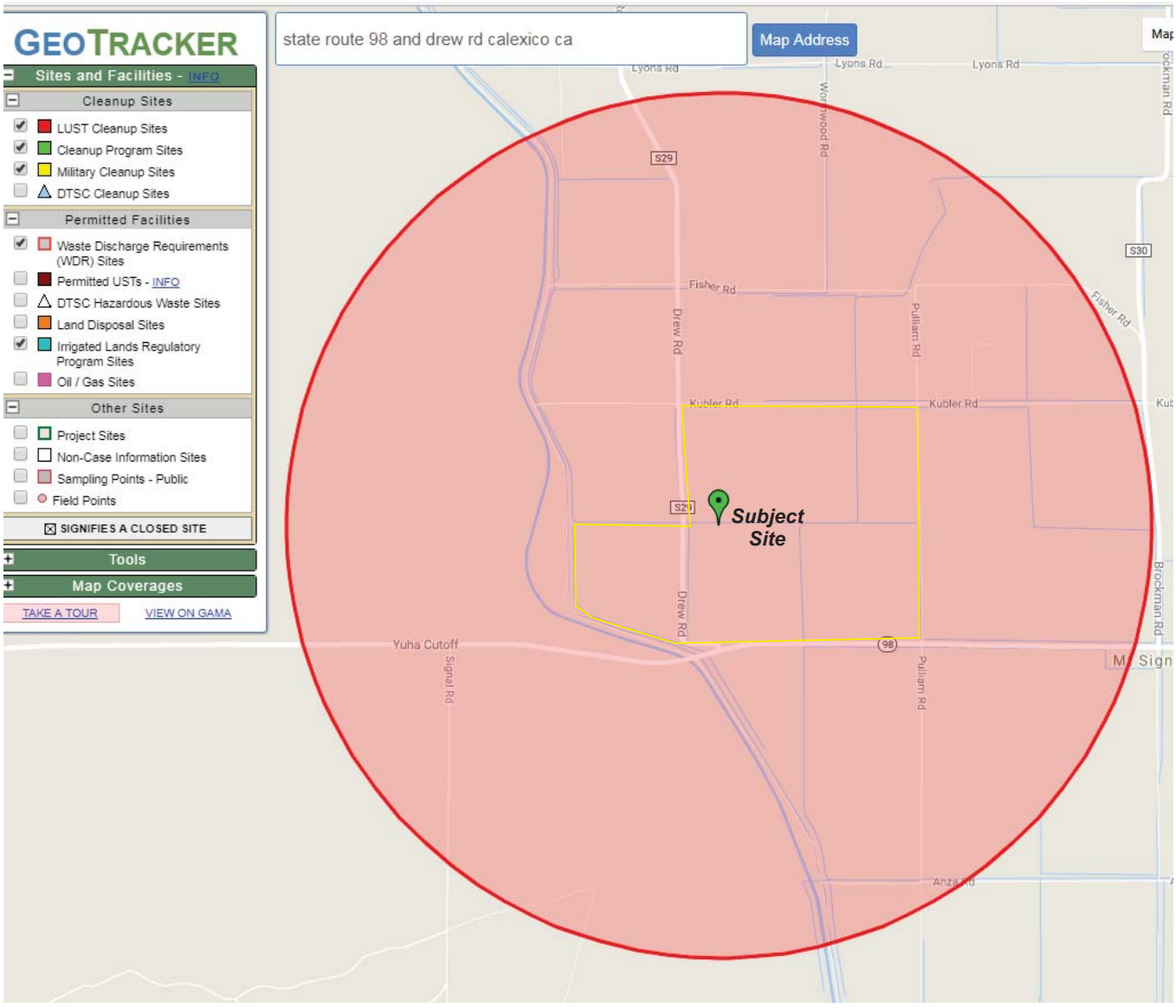
California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

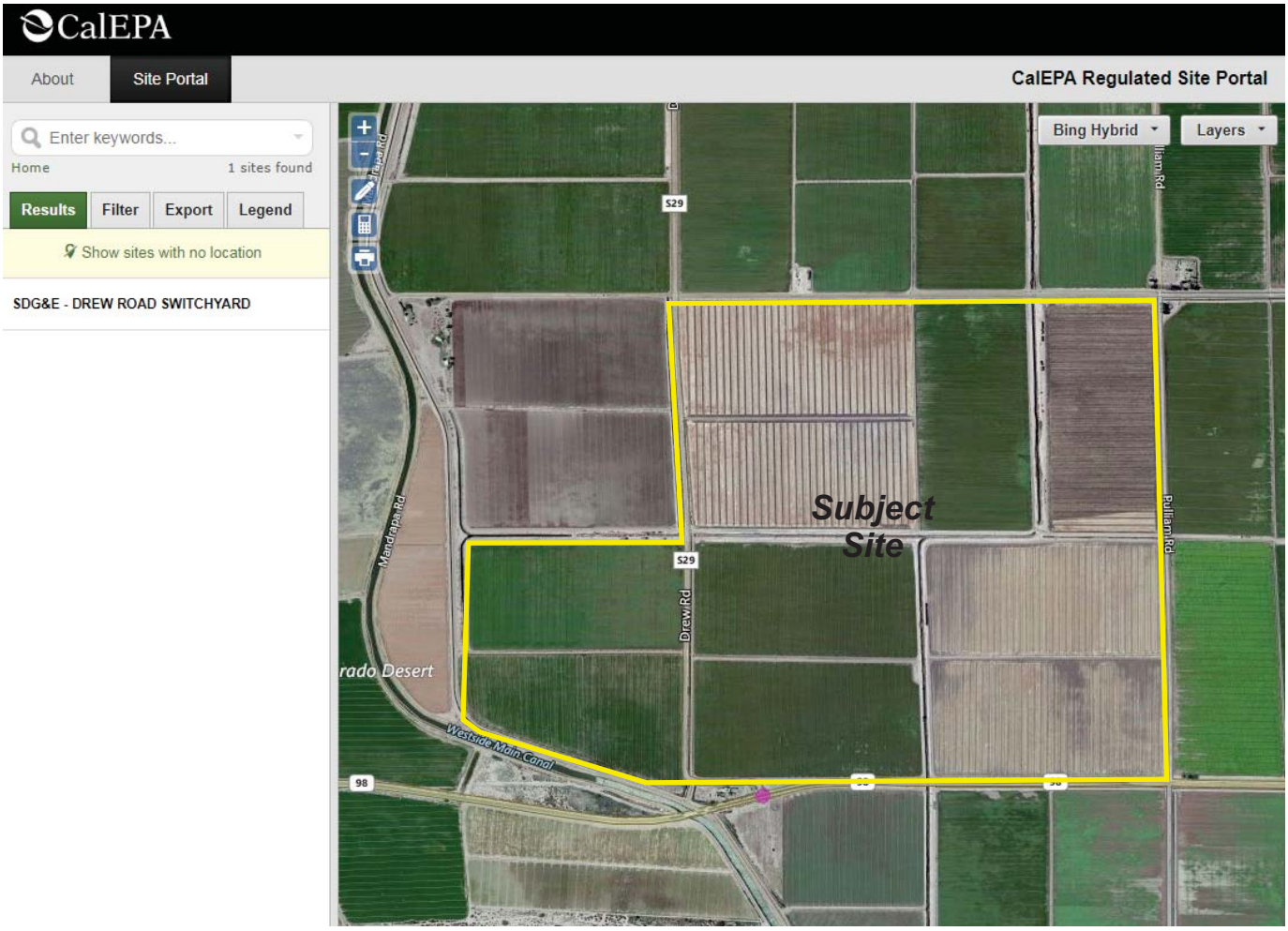
APPENDIX G



GSLyon Project No.: GS1736	Envirostor Map	Plate 17



GS Lyon Project No.: GS1736	Geotracker Map	Plate 18



GSLyon Project No.: GS1736	CalEPA Map	Plate 19

APPENDIX H

Drew Solar Project
Drew Road and Highway 98
Calexico, CA 92231

Inquiry Number: 5098359.5
November 07, 2017

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

EDR is licensed to reproduce certain City Directory works by the copyright holders of those works. The purchaser of this EDR City Directory Report may include it in report(s) delivered to a customer. Reproduction of City Directories without permission of the publisher or licensed vendor may be a violation of copyright.

Data by
infoUSA®

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☑	☑	EDR Digital Archive
2010	☑	☑	EDR Digital Archive
2005	☑	☑	EDR Digital Archive
2000	☑	☑	EDR Digital Archive
1995	☑	☑	EDR Digital Archive
1992	☑	☑	EDR Digital Archive
1987	☐	☐	Polk's City Directory
1982	☐	☐	Polk's City Directory
1977	☐	☐	Polk's City Directory
1972	☐	☐	Polk's City Directory
1967	☐	☐	Polk's City Directory
1964	☐	☐	Polk's City Directory
1959	☐	☐	Polk's City Directory

FINDINGS

TARGET PROPERTY STREET

Drew Road and Highway 98
Calexico, CA 92231

Year	CD Image	Source	
DREW RD			
2014	pg A1	EDR Digital Archive	
2010	pg A3	EDR Digital Archive	
2005	pg A5	EDR Digital Archive	
2000	pg A7	EDR Digital Archive	
1995	pg A9	EDR Digital Archive	
1992	pg A11	EDR Digital Archive	
1987	-	Polk's City Directory	Street not listed in Source
1982	-	Polk's City Directory	Street not listed in Source
1977	-	Polk's City Directory	Street not listed in Source
1972	-	Polk's City Directory	Street not listed in Source
1967	-	Polk's City Directory	Street not listed in Source
1964	-	Polk's City Directory	Street not listed in Source
1959	-	Polk's City Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
HIGHWAY 98			
2014	-	EDR Digital Archive	Target and Adjoining not listed in Source
2010	-	EDR Digital Archive	Target and Adjoining not listed in Source
2005	-	EDR Digital Archive	Target and Adjoining not listed in Source
2000	-	EDR Digital Archive	Target and Adjoining not listed in Source
1995	-	EDR Digital Archive	Target and Adjoining not listed in Source
1992	-	EDR Digital Archive	Target and Adjoining not listed in Source
1987	-	Polk's City Directory	Target and Adjoining not listed in Source
1982	-	Polk's City Directory	Target and Adjoining not listed in Source
1977	-	Polk's City Directory	Target and Adjoining not listed in Source
1972	-	Polk's City Directory	Target and Adjoining not listed in Source
1967	-	Polk's City Directory	Target and Adjoining not listed in Source
1964	-	Polk's City Directory	Target and Adjoining not listed in Source
1959	-	Polk's City Directory	Target and Adjoining not listed in Source
KUBLER RD			
2014	pg. A2	EDR Digital Archive	
2010	pg. A4	EDR Digital Archive	
2005	pg. A6	EDR Digital Archive	
2000	pg. A8	EDR Digital Archive	
1995	pg. A10	EDR Digital Archive	
1992	pg. A12	EDR Digital Archive	
1987	-	Polk's City Directory	Street not listed in Source
1982	-	Polk's City Directory	Street not listed in Source
1977	-	Polk's City Directory	Street not listed in Source
1972	-	Polk's City Directory	Street not listed in Source
1967	-	Polk's City Directory	Street not listed in Source
1964	-	Polk's City Directory	Street not listed in Source
1959	-	Polk's City Directory	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

DREW RD 2014

405	OCCUPANT UNKNOWN,
573	BISHOP, A
695	PENA, RAYMOND C
706	SMITH, JAMES A
740	ZIMMERMANN, ANNMARIE
750	KEMP, JOHN H

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

KUBLER RD 2014

591	JESUS, GARCIA
604	ACEVEDO, REFUGIO
	AUTOS VICKY
605	OCCUPANT UNKNOWN,
852	STUDER, MARGARET A
865	RUIZ, JOSE A
1166	ROMERO, AUGUSTINE T

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

DREW RD 2010

405	SOTO, ALFONSO R
573	BISHOP, SO
583	PERAZA, VICENTE E
695	PENA, JOSE
706	PAZ, DAGOBERTO E
740	ZIMMERMANN, ANN M
750	KEMP, JOHN H

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

KUBLER RD 2010

591	GARCIA, JUAN J
595	KUBLER, REMINGTON
604	ACEVEDO, REFUGIO
	AUTOS VICKY
605	OCCUPANT UNKNOWN,
852	STUDER, ALBERT
865	RUIZ, JOSE
1160	FLOR MARGARITA SOLORZANO
1166	ROMERO, AUGUSTINE T

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

DREW RD 2005

405	MURPHY, JOHN M
573	BISHOP, KAY B
583	OCCUPANT UNKNOWN,
695	BOJORQUEZ, ALEJANDRINA
706	PAZ, DAGOBERTO E
740	ZIMMERMANN, ANN M
750	KEMP, JOHN H

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

KUBLER RD 2005

591	OCCUPANT UNKNOWN,
595	KUBLER, REMINGTON
604	ACEVEDO, REFUGIO
605	OCCUPANT UNKNOWN,
852	OCCUPANT UNKNOWN,
865	REYES, SALLY
1160	ARELLANO, RICARDO
1166	ROMERO, AUGUSTINE T
1398	MORINO, ALPHONSO

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

DREW RD 2000

405	MARTINEZ, MARIA M
	MURPHY, JOHN M
	SOTO, ELSA L
573	BISHOP, KAY
583	OCCUPANT UNKNOWN,
599	STROBEL, J S
695	PENA, LUIS
706	LAWRENCE, BOB
740	OCCUPANT UNKNOWN,
750	KEMP, JOHN

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

KUBLER RD 2000

604	ACEVEDO, REFUGIO
605	ACEVEDO, FEDERIC
865	OCCUPANT UNKNOWN,
1160	OCCUPANT UNKNOWN,
1166	ROMERO, A T
1398	MORINO, ALPHONS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

DREW RD 1995

599 STROBEL, J S
695 PENA, LUIS
740 BEECROFT, J R
750 KEMP, JOHN

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

KUBLER RD 1995

604	ACEVEDO, REFUGIO
605	ACEVEDO, F
619	OCCUPANT UNKNOWNN
1398	MORINO, A

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

DREW RD 1992

405 SOTO, ALFONSO
599 STROBEL, J S
706 WILLIAMS, JACK E

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

KUBLER RD 1992

591	NAVARRETE, HECTOR
604	ACEVEDO, REFUGIO
605	ACEVEDO, F
865	GARCIA, FIDELIA
1398	MORINO, A

APPENDIX I

780 N. 4th Street
El Centro, CA 92243
(760) 337-1100

Phase I Environmental Site Assessment (ESA)
User Questionnaire

1) Environmental liens that are filed or recorded against the *property*.
Did a search of *recorded land title records* (or judicial records where appropriate) identify any environmental liens filed or recorded against the *property* under federal, tribal, state, or local law?

No based on preliminary title report.

2) Activity and use limitations that are in place on the *property* or that have been filed or recorded against the *property*.
Did a search of *recorded land title records* (or judicial records where appropriate) identify any AULs, such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the property and/or have been filed or recorded against the *property* under federal, tribal, state or local law?

No based on preliminary title report.

3) Specialized knowledge or experience of the person seeking to qualify for the LLP.
Do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the *property* or an *adjoining property* so that you would have specialized knowledge of the chemicals and processes used by this type of business?

Same line of business as the neighboring properties to the east and south, which are solar farms.

4) **Relationship of the purchase price to the fair market value of the *property* if it were not contaminated.**
Does the purchase price being paid for this *property* reasonable reflect the fair market value of the *property*? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*?

Project is leasing the land (not purchasing), and contamination is not anticipated.

5) **Commonly known or *reasonably ascertainable* information about the *property*.**
Are you aware of commonly known or *reasonably ascertainable* information about the *property* that would help the *environmental professional* to identify conditions indicative of releases or threatened releases? For example,

a. Do you know the past uses of the *property*? Historically farmed and still being farmed.

b. Do you know of specific chemicals or oils that are present or once were present at the *property*? Tenant farmers use certain chemicals that seem non-toxic for flat crop production.

c. Do you know of spills or other chemical releases that have taken place at the *property*? Tenant farmers use certain chemicals that seem non-toxic for flat crop production.

d. Do you know of any environmental cleanups that have taken place at the *property*? No.

6) **The degree of obviousness of the presence or likely presence of contamination at the *property*, and the ability to detect the contamination by appropriate investigation.**
Based on your knowledge and experience related to the *property* are there any *obvious* indicators that point to the presence or likely presence of releases at the *property*? Tenant farmers use certain chemicals that seem non-toxic for flat crop production.

Additional Information

1) Reason why Phase I ESA is required:

For CEQA and financing purposes

2) Type of Property:

Commercial	☐
Industrial	☐
Residential	☐
Vacant/Undeveloped	☐
Other Agricultural	

Type of Transaction:

Purchase	☐
Financing	☐
Sale	☐
Lease	■
Other	

3) Complete and correct address for the property:

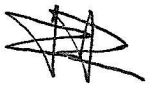
APN	Gross Acres	Net Acres	Zoning
052-170-039	80.00	69.8	A2 & A3
052-170-067	72.71	67.2	A2
052-170-031	160.00	157.1	A2 & A2R
052-170-032	167.08	152.2	A2R
052-170-056	158.79	157.9	A2
052-170-037	169.82	158.6	A2 & A2R

4) Are there any existing environmental report, documents, correspondence, etc. available for review?

No.

User Name/Company: Drew Solar, LLC

Address: 1166 Avenue of the Americas
New York, NY 10036

User Signature: 
Derek Dessert, Authorized Signatory

Date: 11/20/2017

stewart title

Kaz Bernath
Stewart Title of California, Inc.
11870 Pierce St Ste 100
Riverside, CA 92505
Phone: (951) 276-2700
Fax:
KBernath@stewart.com

PRELIMINARY REPORT

Order No.	:	01180-264080
Title Unit No.	:	7435
Your File No.	:	
Buyer/Borrower Name	:	
Seller Name	:	Imperial Irrigation District, a California Irrigation District

Property Address: Vacant land, Imperial County, CA

In response to the above referenced application for a Policy of Title Insurance, Stewart Title of California, Inc. hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a Stewart Title Guaranty Company Policy or Policies of Title Insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referenced to as an Exception on Schedule B or not excluded from coverage pursuant to the printed Schedules, Conditions, and Stipulations of said Policy forms.

The printed Exceptions and Exclusions from the coverage and Limitations on covered Risks of said policy or policies are set forth in Exhibit A attached. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Limitations on Covered Risks applicable to the CLTA and ALTA Homeowner's Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limits of Liability for certain coverages are also set forth in Exhibit A. Copies of the policy forms should be read. They are available from the office which issued this report.

Please read the exceptions shown or referred to below and the exceptions and exclusions set forth in Exhibit A of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters, which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects, and encumbrances affecting title to the land.

This report, (and any supplements or amendments thereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance a binder or commitment should be requested.

Dated as of March 15, 2017 at 7:30 a.m.

Amendment No. 2

Kaz Bernath, Title Officer

When replying, please contact: Kaz Bernath, Title Officer

PRELIMINARY REPORT

The form of Policy of Title Insurance contemplated by this report is:

☐ CLTA Standard Coverage Policy

☐ CLTA/ALTA Homeowners Policy

☒ 2006 ALTA Owner's Policy

☐ 2006 ALTA Loan Policy

☐ ALTA Short Form Residential Loan Policy

☐

SCHEDULE A

The estate or interest in the land hereinafter described or referred to covered by this report is:

Fee

Title to said estate or interest at the date hereof is vested in:

Imperial Irrigation District, a California Irrigation District

LEGAL DESCRIPTION

The land referred to herein is situated in the State of California, County of Imperial and described as follows:

Parcel A: (Brockman II Ranch)

Parcel 1:

The Northwest quarter of Section 8, Township 17 South , Range 13 East, San Bernardino Base and Meridian, County of Imperial, State of California, according to the Official Plat thereof.

Excepting therefrom, an undivided 50% interest in all mineral rights and all oil, gas, steam, petroleum or other hydrocarbon substances within or underlying said land, as reserved by Brockman Crop Dusters, Inc., in deed recorded June 12, 1964 in Book 1185, Page 251 of Official Records.

(APN: 052-170-031)

Parcel 2:

The Southwest quarter of Section 8, Township 17 South , Range 13 East, San Bernardino Base and Meridian, County of Imperial, State of California, according to the Official Plat thereof.

Excepting therefrom, the North 75.00 feet *and* the East 75.00 feet; and

Also excepting therefrom, the Southerly 40.00 feet as conveyed to the State of California, in deed recorded August 27, 1941 in Book 573, Page 495 of Official Records.

(APN: 052-170-056)

Parcel B: (Horton Ranch)

Blocks 4 and 5 of Brockman Subdivision, in the County of Imperial, State of California, according to Map No. 118 on file in Book 2, Page 49 of Official Maps, in the Office of the County Recorder of Imperial County.

(APN: 052-170-032)

Parcel C: (Lowry Ranch)

Parcel 1:

The North half of the Southeast quarter of Section 7, Township 17 South , Range 13 East, San Bernardino Base and Meridian, in an unincorporated area of the County of Imperial, State of California, according to the Official Plat thereof.

(APN: 052-170-039)

Parcel 2:

The South half of the Southeast quarter of Section 7, Township 17 South , Range 13 East, San Bernardino Base and Meridian, in an unincorporated area of the County of Imperial, State of California, according to the Official Plat thereof.

Excepting therefrom, that portion lying Southwest of the West Side Main Canal, conveyed to W. H. Herbert, et al, in deed recorded June 26, 1914 in Book 46, Page 359 of Deeds.

Also excepting therefrom, the North 20.00 feet conveyed to Adolphus M. Shenk in deed recorded July 22, 1920 in Book 165, Page 303 of Deeds.

(APN: Portion of 052-170-067)

Parcel 3:

The North 20.00 feet of the South half of the Southeast quarter of Section 7, Township 17 South , Range 13 East, San Bernardino Meridian, in an unincorporated area of the County of Imperial, State of California, according to the Official Plat thereof.

(APN: Portion of 052-170-067)

Parcel D: (West-Gro Ranch)

Lots 13 and 14 of Brockman Subdivision, in an unincorporated area of the County of Imperial, State of California, according to the Map No. 118 on file in Book 2, Page 49 of Official Maps, in the Office of the County Recorder of Imperial County.

Excepting therefrom, all oil, gas, hydrocarbons, minerals, steam, hot water, thermal energy, fluids and other substances below a depth of 500 feet of the natural surface of the land, without any rights of surface entry, as conveyed in deeds recorded February 12, 1975 in Book 1371, Page 1386, June 23, 1975 in Book 1375, Page 1937 and November 27, 1991 as Instrument No. 91022306, all of Official Records.

(APN: 052-170-037)

(End of Legal Description)

THE MAP CONNECTED HEREWITH IS BEING PROVIDED AS A COURTESY AND FOR INFORMATIONAL PURPOSES ONLY; THIS MAP SHOULD NOT BE RELIED UPON. FURTHERMORE, THE PARCELS SET OUT ON THIS MAP MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES. STEWART ASSUMES NO LIABILITY, RESPONSIBILITY OR INDEMNIFICATION RELATED TO THE MAPS NOR ANY MATTERS CONCERNING THE CONTENTS OF OR ACCURACY OF THE MAP.

SCHEDULE B

At the date hereof, exceptions to coverage in addition to the printed exceptions and exclusions contained in said policy or policies would be as follows:

Taxes:

A. Property taxes, which are a lien not yet due and payable, including any assessments collected with taxes, to be levied for the fiscal year 2017 – 2018.

B. This property is currently not being assessed for real property taxes.

Exceptions:

1. Water rights, claims or title to water in or under said land, whether or not shown by the public records.

2. Said land is located within the boundary of the Imperial Irrigation District.

3. Rights or claims of easements for canals, drains, laterals, irrigation pipelines and gates not recorded in the public records.

4. Title to, and easements in, any portion of the land lying within any highways, roads, streets, or other ways.

5. Rights of tenants in possession as tenants only under unrecorded leases.

6. Any facts, rights, interests or claims, which would be disclosed by a current ALTA/NSPS Survey certified to both Stewart Title of California, Inc. and to Stewart Title Guaranty Company.

The following items affect Parcel A:

7. An easement for public road, and rights incidental thereto, in favor of the County of Imperial, as set forth in a document recorded March 10, 1911 in Book 59, Page 12 of Deeds.

8. An easement for a public road, and rights incidental thereto, in favor of the County of Imperial, as set forth in a document recorded May 6, 1926 in Book 115, Page 421 of Official Records.

9. An easement for public highway, and rights incidental thereto, in favor of the State of California, as set forth in a document recorded March 15, 1944 in Book 613, Page 469 of Official Records.

   A relinquishment of all or a portion of said right of way, to the County of Imperial, as disclosed in document recorded January 27, 1956 in Book 928, Page 318 of Official Records.

10. A reservation of an undivided 50% interest in all mineral rights and all oil, gas, steam, petroleum or other hydrocarbon substances within or underlying said land, as reserved by Brockman Crop Dusters, Inc., in deed recorded June 12, 1964 in Book 1185, Page 251 of Official Records.

The following items affect Parcel B:

11. An easement for ditches, and rights incidental thereto, in favor of Louis E. Brockman, et ux, as set forth in a document recorded August 12, 1914 in Book 88, Page 346 of Deeds.

12. Matters contained in an agreement, upon the terms therein provided, recorded June 11, 1956 in

Book 945, Page 453 of Official Records.

The following items affect Parcel C:

13. An easement for public road, and rights incidental thereto, in favor of Imperial County, as set forth in a document recorded March 9, 1910 in Book 48, Page 117 of Deeds.

14. The effect of a quitclaim deed to the County of Imperial, an easement for public highways recorded May 6, 1926 in Book 115, Page 421 of Official Records.

    (Affects Parcel 1)

15. An easement for public highway, and rights incidental thereto, in favor of the State of California, as set forth in a document recorded March 15, 1944 in Book 613, Page 469 of Official Records.

16. An easement for public highway, and rights incidental thereto, in favor of the State of California, as set forth in a document recorded March 15, 1944 in Book 613, Page 470 of Official Records.

17. An easement for public highway, and rights incidental thereto, in favor of the State of California, as set forth in a document recorded March 15, 1944 in Book 613, Page 471 of Official Records.

18. An easement for an underground tile line and necessary appurtenances, and rights incidental thereto, in favor of T. G. Darrough et ux, as set forth in a document recorded September 15, 1960 in Book 1059, Page 585 of Official Records.

19. An easement for a tile line and necessary appurtenances, and rights incidental thereto, in favor of Clarence A. Darrough, as set forth in a document recorded March 12, 1973 in Book 1343, Page 493 of Official Records.

20. Matters contained in agreement, upon the terms therein provided recorded July 2, 1979 in Book 1436, Page 328 of Official Records.

The following items affect Parcel D:

21. Matters contained in an agreement, upon the terms therein provided, recorded November 26, 1969 in Book 1286, Page 348 of Official Records.

22. A grant of all oil, gas, hydrocarbons, minerals, steam, hot water, thermal energy, fluids and other substances below a depth of 500 feet of the natural surface of the land, without any rights of surface entry, as conveyed in deeds recorded February 12, 1975 in Book 1371, Page 1386, June 23, 1975 in Book 1375, Page 1937 and November 27, 1991 as Instrument No. 91022306, all of Official Records.

(End of Exceptions)

NOTES AND REQUIREMENTS

For transactions where Stewart Title of California, Inc. is not the settlement/closing agent, a signed and dated copy of the attached "Acknowledgment of Receipt, Understanding and Approval of Affiliated Business Arrangement Disclosure Statement and STG Privacy Notice for Stewart Title Companies", will be required prior to recording.

A. Basic Rate

B. There are no conveyances affecting said land, recorded with the County Recorder within 24 months of the date of this report.

CALIFORNIA "GOOD FUNDS" LAW

California Insurance Code Section 12413.1 regulates the disbursement of escrow and sub-escrow funds by title companies. The law requires that funds be deposited in the title company escrow account and available for withdrawal prior to disbursement. Funds received by Stewart Title of California, Inc. via wire transfer may be disbursed upon receipt. Funds received via cashier's checks or teller checks drawn on a California Bank may be disbursed on the next business day after the day of deposit. If funds are received by any other means, recording and/or disbursement may be delayed, and you should contact your title or escrow officer. All escrow and sub-escrow funds received will be deposited with other escrow funds in one or more non-interest bearing escrow accounts in a financial institution selected by Stewart Title of California, Inc.. Stewart Title of California, Inc. may receive certain direct or indirect benefits from the financial institution by reason of the deposit of such funds or the maintenance of such accounts with the financial institution, and Stewart Title of California, Inc. shall have no obligation to account to the depositing party in any manner for the value of, or to pay to such party, any benefit received by Stewart Title of California, Inc.. Such benefits shall be deemed additional compensation to Stewart Title of California, Inc. for its services in connection with the escrow or sub-escrow.

If any check submitted is dishonored upon presentation for payment, you are authorized to notify all principals and/or their respective agents of such nonpayment.

EXHIBIT "A"

LEGAL DESCRIPTION

Order No.: 01180-264080
Escrow No.: 01180-264080

The land referred to herein is situated in the State of California, County of Imperial, and described as follows:

Parcel A: (Brockman II Ranch)

Parcel 1:

The Northwest quarter of Section 8, Township 17 South , Range 13 East, San Bernardino Base and Meridian, County of Imperial, State of California, according to the Official Plat thereof.

Excepting therefrom, an undivided 50% interest in all mineral rights and all oil, gas, steam, petroleum or other hydrocarbon substances within or underlying said land, as reserved by Brockman Crop Dusters, Inc., in deed recorded June 12, 1964 in Book 1185, Page 251 of Official Records.

(APN: 052-170-031)

Parcel 2:

The Southwest quarter of Section 8, Township 17 South , Range 13 East, San Bernardino Base and Meridian, County of Imperial, State of California, according to the Official Plat thereof.

Excepting therefrom, the North 75.00 feet *and* the East 75.00 feet; and

Also excepting therefrom, the Southerly 40.00 feet as conveyed to the State of California, in deed recorded August 27, 1941 in Book 573, Page 495 of Official Records.

(APN: 052-170-056)

Parcel B: (Horton Ranch)

Blocks 4 and 5 of Brockman Subdivision, in the County of Imperial, State of California, according to Map No. 118 on file in Book 2, Page 49 of Official Maps, in the Office of the County Recorder of Imperial County.

(APN: 052-170-032)

Parcel C: (Lowry Ranch)

Parcel 1:

The North half of the Southeast quarter of Section 7, Township 17 South , Range 13 East, San Bernardino Base and Meridian, in an unincorporated area of the County of Imperial, State of California, according to the Official Plat thereof.

(APN: 052-170-039)

Parcel 2:

The South half of the Southeast quarter of Section 7, Township 17 South , Range 13 East, San Bernardino Base and Meridian, in an unincorporated area of the County of Imperial, State of California, according to the Official Plat thereof.

Excepting therefrom, that portion lying Southwest of the West Side Main Canal, conveyed to W. H. Herbert, et al, in deed recorded June 26, 1914 in Book 46, Page 359 of Deeds.

Also excepting therefrom, the North 20.00 feet conveyed to Adolphus M. Shenk in deed recorded July 22, 1920 in Book 165, Page 303 of Deeds.

(APN: Portion of 052-170-067)

Parcel 3:

The North 20.00 feet of the South half of the Southeast quarter of Section 7, Township 17 South , Range 13 East, San Bernardino Meridian, in an unincorporated area of the County of Imperial, State of California, according to the Official Plat thereof.

(APN: Portion of 052-170-067)

Parcel D: (West-Gro Ranch)

Lots 13 and 14 of Brockman Subdivision, in an unincorporated area of the County of Imperial, State of California, according to the Map No. 118 on file in Book 2, Page 49 of Official Maps, in the Office of the County Recorder of Imperial County.

Excepting therefrom, all oil, gas, hydrocarbons, minerals, steam, hot water, thermal energy, fluids and other substances below a depth of 500 feet of the natural surface of the land, without any rights of surface entry, as conveyed in deeds recorded February 12, 1975 in Book 1371, Page 1386, June 23, 1975 in Book 1375, Page 1937 and November 27, 1991 as Instrument No. 91022306, all of Official Records.

(APN: 052-170-037)

APN: 052-170-003, 052-170-057, 052-170-012, 052-170-009, 052-170-011, 052-170-031, 052-170-056, 052-170-024, 052-170-025, 052-170-026, 052-170-032, 052-170-039, 052-170-067, 052-170-045, 052-170-030, and 052-170-037

(End of Legal Description)

APPENDIX J

Jeffrey O. Lyon, PE
Principal Engineer

Education

B.S. Civil Engineering (Magna Cum Laude)
California Polytechnic University, Pomona Campus 1978

Registration

Registered Civil Engineer No. 31921, California
Registered Civil Engineer No. 16994, Arizona

Professional Experience

1987 - Present	Principal Engineer Southland Geotechnical, Inc.
1982 - 1987	Principal Engineer Lyon Engineers, Inc.
1978 - 1981	Partner/Senior Engineer Tesco Engineering
1974 - 1977	Survey Party Chief Tesco Engineering
1972 - 1973	Survey Party Chief Lyon & Associates

Summary of Experience

As Principal Engineer, Mr. Lyon is responsible for financial and technical management of all employees in Southland Geotechnical's four branch offices. Mr. Lyon has performed site investigations for residential subdivisions, geogrid-reinforced slopes, shopping centers, military airfields, roadways, administration and office buildings, elementary and high schools, goldmine mill processing facilities, hydro-electric plants, power transmission lines, electrical substations, co-generation power plants and geothermal power plants. He has provided design for drilled piers, driven piles, stone columns and floating (rigid) mats, and has performed seismic risk evaluations, ground shaking analyses, liquefaction studies and liquefaction induced settlements studies. Mr. Lyon has conducted Phase I and Phase II ESA's throughout the Imperial and Coachella Valleys for over 7 years. Mr. Lyon's experience also includes forensic investigations for foundation/structural distress to residential, commercial and educational facilities, and has performed pressure grout stabilization and lifting for distress remediation.

Selected Project Experience

- **Aten Road Improvements, Imperial, CA**

Performed Phase I environmental site assessment for improvements to Aten Road in accordance to CalTrans requirements.

- **Gateway to the Americas, Calexico, CA**

Conducted Phase I ESA, geologic hazards study and geotechnical investigation including liquefaction evaluation for 1,700 acre development associated with new Port of Entry east of Calexico

- **El Centro Magistrate Court, El Centro, CA**

Conducted geotechnical investigation and Phase I ESA for new Federal Magistrate Court building at site with soft soil conditions requiring foundation settlement analysis

- **El Centro Regional Medical Center, El Centro, CA**

Conducted Phase I ESA and geotechnical investigation for 50,000 sf, 2-story addition to the medical center's emergency room, operating rooms, and recovery rooms.

- **Brawley Union High School, Brawley, CA**

Conducted Phase II investigation for PCB and lead contamination of surficial soil and hydrocarbon contamination of subsurface soil of a property proposed for purchase.

- **EW Corporation Site, Westmorland, CA**

Conducted Phase II investigation for hydrocarbon contamination of subsurface soil of a service station site with leaking underground storage tanks prior to property purchase

- **Various Apartment Complexes, Imperial County, CA**

Conducted Phase I environmental investigation at numerous proposed apartment complex site within the Imperial Valley

- **Hwy 98 Improvements, Imperial, CA**

Performed Phase I environmental site assessment for improvements to Hwy 98 for a new intersection in accordance to CalTrans requirements.

Professional Affiliations

American Society of Civil Engineers, Member
American Society of Testing Materials, Member
American Concrete Institute, Certified Examiner
Association of Professional Firms Practicing in the Geosciences, Member

Peter LaBrucherie, PE
Staff Engineer

Education

B.S. Civil Engineering
California Polytechnic University, San Luis Obispo, 2011

M.S. Civil Engineering
California Polytechnic University, San Luis Obispo, 2012

Registration
Professional Engineer C84812, California

Professional Experience

2013 - Present	Staff Engineer GS Lyon, Inc.
2012 - 2013	Project Engineer BNBuilders.

Summary of Experience
As an Environmental Technician, Mr. LaBrucherie performs Phase I Environmental Site Assessments in Imperial County. The scope of work for these assessments typically includes site reconnaissance, review of government records pertaining to previous site uses, and preparation of a report identifying potential environmental risks.

Selected Project Experience

Seville Solar Farm, Westmorland, CA
Conducted Phase I environmental site assessment for solar project located about 9 miles northwest of Westmorland, Ca.

Clean Harbors Facility, Westmorland, CA
Conducted annual reports which included flood diversion, photo documentation and post closure for waste facility located about 5 miles west of Westmorland, Ca.

Ching Properties, Brawley, CA
Conducted Phase I environmental site assessment for vacant property located in Brawley, Ca.

Chelsea - 470 W. Wall Road, Imperial, CA
Conducted Phase I environmental site assessment for vacant property located in Imperial, Ca. Property is being proposed for apartment complex.

1409 E. Alamo Road, Holtville, CA
Conducted Phase I environmental site assessment for property (mostly vacant with some unused shop buildings and abandoned residential home) located west of Holtville, Ca.

BUSD School Site, Brawley, CA
Conducted Phase I environmental site assessment for school site proposal on a vacant property located in south Brawley, Ca.

CR&R Direct Transfer, El Centro, CA
Conducted Phase I environmental site assessment for commercial property (large warehouse and office with large laydown area) located in El Centro, Ca.

Villa Primavera Apartments, Calexico, CA
Conducted Phase I environmental site assessment for vacant property located in Calexico, Ca.

THIS PAGE INTENTIONALLY LEFT BLANK.

APPENDIX J

DREW SOLAR CONCEPTUAL DRAINAGE STUDY AND STORM WATER QUALITY ANALYSIS

THIS PAGE INTENTIONALLY LEFT BLANK.

DREW SOLAR CONCEPTUAL DRAINAGE STUDY AND STORM WATER QUALITY ANALYSIS

Date: August 2018

Prepared By:

Fuscoe Engineering, Inc.
6390 Greenwich Drive, Suite 170
San Diego, CA 92122
858.554.1500

Paul D. Haaland, PE RCE 63656 8/3/18 Exp: 09-30-18

CONTENTS

1.0 INTRODUCTION

1.1 STUDY DESCRIPTION

The purpose of this conceptual study is to describe the existing and proposed hydrologic conditions for the Drew Solar project. The study will analyze the peak runoff flow volume from the existing condition and the proposed project, provision of runoff detention with respect to County of Imperial standards, and potential impact to the Imperial Irrigation District (IID) Drain system.

This study also includes an analysis of storm water quality concerns as they pertain to the project with respect to the California Environmental Quality Act (CEQA) Guidelines.

1.2 PROJECT DESCRIPTION

The proposed Drew Solar project is located between the Westside Main Canal and Pulliam Road, and between Kubler Road and State HWY 98. The project site includes APNs 052-170-039, 052-170-067, 052-170-031, 052-170-032, 052-170-037, and 052-170-056 and is located in an unincorporated area of the County of Imperial, approximately 6.5 miles southwest of the City of El Centro. The proposed project is a PV solar energy and energy storage facility within a limit of work of 844.2 gross acres and 762.8 net acres. A Parcel Map will be prepared for APN 052-170-039 that will increase the gross acreage to 855 acres. The project includes but is not limited to 6 CUP applications, an application for zone change to add the RE Overlay to the project site, and an associated General Plan Amendment. See Vicinity Map in Appendix A. The project may be constructed in up to 5 phases over several years and this study reviews the technical feasibility, from a storm water runoff perspective, of potential phasing.

The IID has constructed a network of Canals and Drains that are located both within the project and along portions of the perimeter of the project. The IID Canals convey water to customers and the IID Drains collect and convey agricultural and storm water runoff (surface and subsurface). The project site are served by IID Canals and discharge to IID Drains that are on and adjacent to the project site.

Storm water detention can be defined as the impoundment of runoff resulting from a rainfall event (or dry weather flows), and either slow release of impounded water to receiving water bodies or infiltration into underlying soil. The general purpose of detention is to attenuate (lessen) peak flow rates of runoff from a site, which reduces the potential for flooding, erosion, sedimentation, hydromodification and water quality impacts.

Detention requirements over the project site will be satisfied by in shallow ponding areas within the project footprint or within designated detention basins outside arrays, or combination of both. This study calculates a required volume of runoff to be stored per County of Imperial requirements. In accordance with County requirements, the site will be designed and constructed to provide retention for a minimum of either 3" of runoff from the contributing area (if the anticipated drawdown time is less than 72 hours) or 5" of runoff from the contributing area (if the anticipated drawdown time is greater than 72 hours). At the time of final design, a final hydrology study will be prepared and processed for approval with the County of Imperial Department of Public Works and the IID.

In addition, for the purpose of determining proposed changes in storm water runoff volume from the project, the existing and proposed condition runoff volume has been calculated for the 100-year storm event.

Ultimate locations and limits of detention basins will be determined at the time of final engineering. The project will utilize connection to existing discharge locations to the IID Drain System, connection to relocated discharge locations to the IID Drain System, and/or percolation into the underlying soil.

The final hydrology study will provide a more in-depth analysis of the project's hydrology and hydraulics, considering items such as finished ground topography, infiltration rates for underlying soils, final limits of array development, and routing of flow through discharge pipes to the IID Drain system. The final hydrologic design will be such that the proposed condition peak discharge for the 100-year storm event is attenuated to be equal to or less than the existing condition discharge peak discharge for the 100-year storm event.

1.3 HYDROLOGIC SETTING

The perimeter of the project site is surrounded by public roads, IID Canals, and IID Drains (see Appendix E, Drainage Basin Map). Based upon review of topography and perimeter conditions, it is determined that the only offsite flow that enters the project originates from adjacent paved and unpaved roads; flow from adjacent agricultural fields does not enter the project. As such, this study includes consideration of runoff from adjacent paved and unpaved roads, but runoff from adjacent fields entering the project limits need not be considered.

Under existing conditions, two types of flow, agricultural and storm water are discharged to the IID Drains through a combination of surface runoff collection and subsurface perforated tile drain collection. During the life of the proposed project, agricultural runoff from the project limits to the Drains will cease and the Drains will only receive storm water runoff.

The site is underlain by a network of perforated tile drains (typically clay pipes). This network of tile drains was installed by prior landowners (farmers) to collect runoff that percolates into the soil. Tile drains will only be removed from the site if they are in conflict with proposed septic leach field systems or permanent structures (such as the Substation, Operation and Maintenance Building, or gen-tie/transmission poles, and collection systems).

IID facilities that accept flow from the project site include the Mt. Signal Drain, Mt. Signal Drain #1, Mt. Signal Drain #1A, Mt. Signal Drain #1B, Carr Drain and Brockman Drain #1. Mt. Signal Drain #1A, and Mt. Signal Drain #1B discharge to the Mt. Signal Drain #1. Mt. Signal Drain #1, Carr Drain and Brockman Drain #1 all discharge to the Mt. Signal Drain. Mt. Signal Drain discharges to the Greeson Drain approximately 0.9 miles north-east of the project.

The IID Drain system was not designed to convey runoff from large storm events. Rather, the primary purpose of the Drains is to convey agricultural runoff. The Drains typically have the capacity to convey peak flow from the 5-year to 10-year storm event. Runoff from larger storm events (for example the 100-year event) is detained within low lying areas of agricultural fields until the peak of the storm has passed, after which the detained runoff is slowly discharged to the Drains via pipe connections from surface collection and/or tile drains that are typically 12" in diameter or less.

To mimic the existing condition and provide storage of storm water runoff, the County of Imperial requires that projects provide storage for 3" of runoff from project sites. The County of Imperial further requires that storage areas provided with development be designed such that they are able to drain within 72 hours, either via infiltration or through discharge to IID Drains. If the 72 hour drawdown time cannot be satisfied due to low potential of soils infiltration or if a project developer chooses to not process for approval of discharge to the IID Drains, per County requirements, storage of 5" of runoff must be provided and a Mosquito Abatement Plan has to be prepared for review and approval by the Environmental Health Department.

In addition, should the developer choose to process for approval of a discharge into the IID Drains, the IID does not allow pipe connections that are greater than 12" in diameter. The project will satisfy

the requirements (3" runoff storage, 5" runoff storage, preparation of Mosquito Abatement Plan, outlet pipe design) as they apply to final project design

The project site is divided into individual fields by existing Canals, Drains, public roads, and private roads that have multiple discharge points to the various IID Drains. Based upon a review of the Phasing Plan, the limits of each individual CUP encompass the entirety of individual fields and do not propose partial development of a field in any singular CUP. The phasing of the CUPs can be performed in a manner that does not require diversion of runoff from one existing point of discharge to a different location. Should the developer choose to process for approval of discharge into the IID Drains, doing so will be consistent with existing drainage patterns, and phasing of the project is feasible from a storm water runoff perspective.

2.0 HYDROLOGIC ANALYSIS

2.1 METHOD OF ANALYSIS

Hydrologic calculations are made within this section of the study in accordance with the following parameters/criteria:

1. The maximum volume of water to be detained will be equal to 3" or 5" of runoff from the project per County of Imperial Public Works Department (DPW) requirements.
2. Should the developer choose to discharge runoff from the project into the IID Drains, at final design a final hydrology study will be prepared and processed for approval with the IID. The final hydrology study will utilize standard industry practices that model factors such as runoff coefficient or curve number, infiltration into underlying soils, and flow in storm drain discharge pipes connected to the IID Drain system.
3. Detention will be provided in shallow ponding areas within the project footprint or within designated detention basins outside arrays, or combination of both.
4. Infiltration of runoff into native soils is preferred, where percolation rates allow.
5. Discharge of runoff to IID Drains via 12" storm drain connection per IID standards for connection of private facilities may be utilized. Existing surface connection points to the IID Drain system will either remain in their existing location and continue to be used if possible, be relocated as necessary, or be cut and capped if no longer needed. Addition of connection points to the IID Drain system is not proposed.
6. The volume of runoff from the 100-year storm is calculated by the Rational Method with weighted C value.
7. Information gained from the National Resource Conservation Service (NRCS) website is used to determine hydrologic soil classification.
8. National Oceanic and Atmospheric Administration (NOAA) precipitation data is used for determination of the 100-year storm rainfall.

See Appendix C for reference material pertaining to County standards and Rational Method parameters (including runoff coefficient). The modeling of runoff and routing of flow through proposed detention areas/basins will be provided at the time of final design. Said modeling and routing is beyond the scope of this conceptual study and is dependent upon and will consider factors such as infiltration rates of underlying soils, flow in discharge pipes outletting to the IID Drain system, final site development area, and final site finished ground topography.

2.2 RATIONAL METHOD PARAMETERS

The Rational Method, used for determination of runoff volumes, is provided by the equation below:

$V = C \times P \times A$

V = Volume of runoff, acre-feet
C = Runoff coefficient
P = Precipitation, converted to feet
A = Area, acres

2.2.1 RUNOFF COEFFICIENT

The runoff coefficient is an empirical value to estimate the runoff expected from rainfall. The value for the runoff coefficient is based on site characteristics that influence runoff including topography, land use, vegetation, and soil type. To assign runoff coefficients to existing and proposed conditions, multiple references were reviewed and compared for consistency. Chapter 810 of the CalTrans Highway Design Manual (HDM, which is commonly used and accepted for use in the County of Imperial) and Chapter 13 of the Wisconsin DOT Facilities Development Manual (which provides runoff coefficient reference for row crops, has been accepted for use by the County of Imperial on similar recent projects, and due to its relevance to the existing land use of farming row crops) were reviewed.

a. Soil Group Determination:

The runoff coefficient was determined for existing and proposed conditions through consideration of two separate sources and reference to the soil classes found onsite as given in the NRCS Soil Survey for Imperial County. From the soil survey, the following soil types are located onsite:

Table 1 – Soil Types

Soil Map Symbol	Soil Type Name	Soil Description	Hydrologic Soil Group
110	Holtville	Silty clay	D
114	Imperial	Silty clay, wet	C
115	Imperial	Silty clay loams, wet	C
122	Meloland	Loamy very fine sandy loam, wet	D
135	Rositas	Fine sand, wet	A
145	Water	-	-

GIS information from the soil survey was overlaid into the project limits to determine the distribution of soil groups as a percentage of the site and to graphically determine the locations of the different hydrologic soil groups for use in hydrologic calculations. Table 2 below provides in tabular format the combined percentage of the soul groups presented on the site. The Soils Group Maps in Appendix B graphically shows the locations of soil groups through the site.

Table 2 – Soil Group Distribution

Hydrologic Soil Group	% of Site
A	2.5%
B	0%
C	91.2%
D	6.3%

b. Existing Condition "C" Factor:

For the existing condition, Figure 819.2A of the CalTrans HDM was reviewed to determine a runoff coefficient for cultivated field areas. Below is a summary of the components of the runoff coefficient per Figure 819.2A.

Table 3 – Existing "C" Factor Per HDM Figure 819.2A

Component	Manual Description	Site Condition	"C" Contribution
Relief	Relatively flat, slopes 0%-5%	Slopes generally < 0.5%	0.08
Soil Infiltration	Clay/shallow loams or sandy/silty loams	Sandy loan, clay loam, silty clay	0.08
Vegetal Cover	80% of area in good cover	Well cultivated crops > = 80% cover	0.05
Surface Storage	Well defined system of small drainageways	Rows crops graded to convey irrigation well	0.09
Aggregate C Factor			0.30

The runoff coefficient determined from Figure 819.2A of the HDM was then cross-checked against Figure 2, Detail B of Procedure 13-10-5 from the WDOT Manual for consistency with another accepted reference for runoff coefficient from cultivated areas. Figure 2, Detail B provides a range of runoff coefficients based on land use, soil group, slope of topography, and storm recurrence interval. The project site is soil groups A (2.5%), B (0%), C (91.2%), and D (6.3%), topographic slope is between 0% and 2%, and the recurrence interval being considered is the 100-year event. For a land use of row crops, the runoff coefficients for each soil group and the weighted "C" factor for the site are provided in Table 4 below.

Table 4 – Existing "C" Factor Per WDOT Manual, Figure 2, Detail B

Hydrologic Soil Group	"C" Factor	% of Site	Weighted "C" Factor
A	0.22	2.5	0.0055
B	0.26	*0*	0
C	0.30	91.2	0.2736
D	0.34	6.3	0.0214
Project Site Weighted "C" Factor			0.3005

Determination of the existing condition runoff coefficient from both methods is consistent and for hydrologic calculation purposes, an existing condition average runoff coefficient of 0.30 is to be used.

c. Proposed Condition "C" Factor:

For the proposed condition, a study was performed on a representative portion of the project (Drainage Area J, see Appendix E, Drainage Basin Map for the location of the study area), and the results of the study were then applied throughout the project. For the study, the following elements were considered:

a. Perimeter Roadways – typical developed areas will feature a 20' wide perimeter roadways consisting of native compacted material. Figure 2, Detail B of the WDOT Manual gives a runoff coefficient range of 0.40 - 0.60 for gravel roads and shoulders and a value of 0.60 is

selected for the 100-year storm. The CalTrans HDM does not provide a runoff coefficient for native material roads.

b. The geotechnical investigation for this site has not been prepared yet. Array clearing, disc-and-roll, and compaction for similar solar projects recommends that sheet graded areas may be compacted in-place to a minimum relative compaction of 85%. Since this may apply to the soils under the arrays, the array areas are assigned the same runoff coefficient (0.60) as the perimeter roadways. Note that final compaction requirements for the array footings/pilings are dependent on the recommendations of the final geotechnical report, which will be performed at the time of final engineering. Assignment of a runoff coefficient of 0.60 to arrays is a conservative, worst-case approach taken at this preliminary phase.
c. Power Conversion Station (PCS) – each array block may require an impervious PCS on impervious concrete foundation. Both Figure 2B of the HDM and Figure 2, Detail B of the WDOT Manual give a runoff coefficient range of 0.75 – 0.95 for roofs, and a value of 0.95 is selected for the 100-year storm.
d. Remaining areas – remaining areas within the developable limit of work outside of the above listed elements considered have the potential to be developed as part of the project and are therefore assigned a runoff coefficient equal to that of the gravel/base roads and areas under the arrays (0.60).

The weighted runoff coefficient for the representative portion (Drainage Area J) is determined in the table below:

Table 5 – Proposed "C" Factor

Description	Runoff Coefficient	Area, ac	% of Total Area	Weighted C
Perimeter Roadways	0.60	3.5	4.4%	0.026
Arrays	0.60	47.5	60.0%	0.360
PCS Shelters	0.95	0.1	0.1%	0.001
Remaining Areas	0.60	28.1	35.5%	0.213
Total		79.2	100.0%	0.600

The runoff coefficient for the proposed condition to be used in hydrologic calculations is 0.60. As the proposed project site is similar in composition across the site, this weighted coefficient is used for the entire site.

2.2.2 PRECIPITATION

A precipitation estimate for the 100-year storm is obtained through referencing data available on the NOAA website for Imperial Valley. Storm duration of 24-hours is assumed, and the corresponding precipitation estimate is 3.79 inches. NOAA data is provided in Appendix D.

2.2.3 AREA

The project site has been delineated into tributary drainage basins for the existing and proposed conditions (see Appendix E for Drainage Basin Map). Points of concentration in drainage basins are shown on this map. Ultimate points of discharge to the IID Drains for the existing and proposed conditions will be similar.

The project site is divided into ten watersheds that are tributary into five IID Drains. Drainage Area A tributary to the Mt. Signal Drain #1A, Drainage Areas B and D tributary to the Mt. Signal Drain #1, Drainage Areas C, E, F and H tributary to the Mt. Signal Drain, Drainage Area G tributary to the Brockman Drain #1, Drainage Areas I and J tributary to the Mt. Signal Drain #1B.

Ultimately, all discharge from the project tributary to an IID Drain is discharged to the Greeson Drain. Note that flow from the Greeson Drain is discharged to the New River approximately 4.2 miles north of the project.

In the proposed condition, the conveyance situation described above will remain unchanged, and there is no change in basin areas from existing to proposed conditions. Therefore, the project does not propose a significant change in existing drainage patterns.

2.3 CALCULATIONS/RESULTS

2.3.1 EXISTING CONDITIONS

a. Storm Water Runoff:

Volumes of storm water runoff for the existing condition are provided in Table 6. The volume reported as "County Storage" is the volume based on 3" and 5" of runoff. The volume reported as "100-year Runoff" is the estimated volume anticipated based on a "C" factor of 0.3 and 100-year 24-hour precipitation of 3.79 inches.

Table 6: Existing Condition Storm Water Runoff

Receiving Drain: Mt. Signal Drain #1A				
Drainage Area Name	Area (ac)	County Storage (ac-ft)		100-Year Runoff (ac-ft)
		3"	5"	
A	72.1	18.0	30.0	6.8
Total	72.1	18.0	30.0	6.8

Receiving Drain: Mt. Signal Drain #1B				
Drainage Area Name	Area (ac)	County Storage (ac-ft)		100-Year Runoff (ac-ft)
		3"	5"	
I	83.0	20.8	34.6	7.9
J	79.2	19.8	33.0	7.5
Total	162.2	40.6	37.6	15.4

Receiving Drain: Mt. Signal Drain #1				
Drainage Area Name	Area (ac)	County Storage (ac-ft)		100-Year Runoff (ac-ft)
		3"	5"	
B	75.5	18.9	31.4	7.2
D	82.4	20.6	34.3	7.8
Total	157.9	39.5	65.7	15.0

Receiving Drain: Brockman Drain #1				
Drainage Area Name	Area (ac)	County Storage (ac-ft)		100-Year Runoff (ac-ft)
		3"	5"	
G	85.9	21.5	35.8	8.1
Total	85.9	21.5	35.8	8.1

Receiving Drain: Mt. Signal Drain			
Drainage	Area (ac)	County Storage (ac-ft)	100-Year Runoff (ac-ft)

Area Name		3”	5”	
C	83.8	21.0	34.9	7.9
E	89.5	22.4	37.3	8.5
F	84.9	21.2	35.4	8.0
H	79.7	19.9	33.2	7.6
Total	337.9	84.5	140.8	32.0

Each of the drainage basins given in Table 6 are discharged directly to an IID Drain.

b. Agricultural Runoff:

In the existing condition, runoff from agricultural activities is discharged to the IID Drain system. The IID meters agricultural runoff to their Drain system. Metered values of agricultural runoff are not available, so an average annual volume of agricultural runoff from the project limits is not included in the scope of this study.

However, in general, the average annual amount of water applied to fields and subsequently discharged to the Drain system from agricultural runoff is greater than that which is discharged from storm water runoff. For example, the average annual rainfall in Imperial Valley is approximately 2.9 inches (0.24 acre-feet per acre per year) and by contrast, alfalfa, the dominant crop grown in Imperial Valley, requires at least 6 acre-feet of irrigation water per acre per year under the surface/flood irrigation practices typically used at the site. The use of such flood irrigation practices results in annual agricultural runoff to the IID Drains that far exceeds the annual storm water runoff to the IID Drains.

2.3.2 PROPOSED CONDITIONS

a. Storm Water Runoff:

Under proposed conditions, the existing drainage characteristics of the project site will remain substantially the same. Existing low-lying areas which receive runoff will continue to do so in the proposed conditions. Section 2.2.3 discusses the areas of existing and proposed drainage basins and sub-basins. As discussed in Section 2.3.2.b, some on-site soils may have the potential to infiltrate runoff. Where this is the case, runoff will be infiltrated. Where infiltration is not feasible, runoff may be detained and slowly released to the IID Drain system such that the peak flowrate of runoff from the 100-year storm event in the proposed condition is equal to or less than it is in the existing condition. Should the project developer choose, a final option available is to terminate runoff from the project site to the IID Drains and retain a greater volume of water in accordance with County requirements. Therefore, there will be no resultant hydraulic impact to IID Drains due to the proposed project.

To enable the development of the solar arrays, private dirt roads and ditches within the project will be re-graded as necessary, and, if necessary, cultivated areas may be re-graded to provide smooth transitions across arrays and to produce positive surface drainage to the designated shallow ponding areas, which will provide storm water detention. A private perimeter access road will be constructed around the arrays. As discussed previously, this conceptual study calculates a maximum volume of runoff that may be detained in accordance with the County standard of 3” or 5” of runoff within the project site. Detention requirements over the project site will be satisfied by ponding areas within the project footprint or within designated detention basins outside arrays, or combination of both. At the time of final design and engineering, a final hydrology study will be prepared and processed for approval with DPW utilizing standard industry practice that models factors such as runoff coefficient or curve number, infiltration into underlying soils, and flow in storm drain discharge pipes connected to

the IID Drain system. Ultimate locations, volumes, and limits of detention basins will be determined at the time of final engineering.

Table 7 provides the required volumes of detention to meet both the County standard of 3" and 5" of runoff from the project and the 100-year runoff. Note that the required storage to meet the County standard is the same for the existing and proposed conditions due to the fact that the County does not consider the runoff coefficient in its standard. The 100-year runoff is the estimated volume based on a "C" factor of 0.60 and a 100-year 24-hour precipitation of 3.79 inches.

The project would utilize connection to existing discharge locations to the IID Drain System, connection to relocated discharge locations to the IID Drain System, and/or percolation into the underlying soil.

Table 7: Proposed Condition Storm Water Runoff

Receiving Drain: Mt. Signal Drain #1A				
Drainage Area Name	Area (ac)	County Storage (ac-ft)		100-Year Runoff (ac-ft)
		3"	5"	
A	72.1	18.0	30.0	13.7
Total	72.1	18.0	30.0	13.7

Receiving Drain: Mt. Signal Drain #1B				
Drainage Area Name	Area (ac)	County Storage (ac-ft)		100-Year Runoff (ac-ft)
		3"	5"	
I	83.0	20.8	34.6	15.7
J	79.2	19.8	33.0	15.0
Total	162.2	40.6	37.6	30.7

Receiving Drain: Mt. Signal Drain #1				
Drainage Area Name	Area (ac)	County Storage (ac-ft)		100-Year Runoff (ac-ft)
		3"	5"	
B	75.5	18.9	31.4	14.3
D	82.4	20.6	34.3	15.6
Total	157.9	39.5	65.7	29.9

Receiving Drain: Brockman Drain #1				
Drainage Area Name	Area (ac)	County Storage (ac-ft)		100-Year Runoff (ac-ft)
		3"	5"	
G	85.9	21.5	35.8	16.3
Total	85.9	21.5	35.8	16.3

Receiving Drain: Mt. Signal Drain				
Drainage Area Name	Area (ac)	County Storage (ac-ft)		100-Year Runoff (ac-ft)
		3"	5"	
C	83.8	21.0	34.9	15.9
E	89.5	22.4	37.3	17.0
F	84.9	21.2	35.4	16.1
H	79.7	19.9	33.2	15.1
Total	337.9	84.5	140.8	64.1

It shall be noted that County of Imperial requirements for storage are significantly higher than the anticipated runoff from the 100-year storm. The 5" and 3" requirements, which will be applied depending on the final drawdown time, are 120% and 32%, respectively, greater than the anticipated volume of runoff from the 100-year storm event.

b. Potential for Infiltration of Runoff:

As discussed in Section 2.2.1b, soil groups A, C and D are present on the project site. In areas where the dominate soils belong to group A, infiltration of storm water runoff may be feasible. While infiltration testing has not been done on the site at this time, group A generally consists of soils that have moderate to high percolation rates (0.15 inches/hour and above) and are therefore suitable for infiltration. Soil group A is generally presents in the southern portion of the project site. (Refer to Appendix B for an NRCS soils resource report and an exhibit showing the location of the various soil groups on the project site.)

At the time of final engineering, infiltration tests will be performed to confirm infiltration feasibility and calculate drawdown times at the proposed ponding locations. At this preliminary stage, ponding areas which are underlain by group A soils are proposed to drain primarily through infiltration into the ground, although storm drain connection to the receiving IID Drain may be necessary. Ponding areas which are underlain by ground C or D soils, or are calculated to have a drawdown time of greater than 72 hours through infiltration alone, may be provided with a storm drain connection to the IID Drain system. These storm drain connections will take the place of existing connections, will be located at or near existing connections, and will be constructed in accordance with IID standard drawing number 12F-6855. The project proposes to match or reduce the number of existing connections to the IID Drain system and at the time of final engineering outflow hydrographs will be provided for the existing and proposed conditions. The detention basins and outlet structures will be designed such that 100-yr peak flow rates in the proposed condition will be less than existing conditions. In combination with infiltration through the underlying soils, the connections will be designed to provide the ponding areas with a drawdown time of 72 hours or less while limiting proposed conditions flow rates to be equal to or below existing levels. At the time of final design, for locations where runoff from the project site will be discharged to the IID Drains, outflow hydrographs will be developed for both the existing and proposed conditions. Final detention basin design and outlet structure design will be performed to demonstrate, via modeling, that the existing condition peak flowrate of runoff from the 100-year storm event is not increased in the proposed condition.

Should the underlying soils prove to not be conducive to infiltration and if the developer does not intend to pursue discharge of project runoff into the IID Drains, then drawdown of stored runoff may exceed 72 hours. In said condition, the project will prepare a Mosquito Abatement Plan and process it for approval with the County of Imperial Department of Environmental Health.

c. Agricultural Runoff:

In the proposed condition, runoff from agricultural activities will cease from the start of construction of a CUP through the life of the project. As such, the total volume of runoff (storm water plus agricultural runoff) discharged to the IID Drain system will decrease during the life of the project because water applied on the project site during the project construction, operations and decommissioning phases will be substantially less than that applied during agricultural operations.

d. Phasing:

The project may be constructed in individual phases due to the presence of roads, canals, and drains surrounding and crossing through the project, each individual area of development associated with a

particular CUP is hydrologically isolated from the other CUP's associated with the project. As such, should the phasing of the project be necessary, the hydrologic aspects of the project would be similar to constructing the project in one phase. Whether the project is constructed in several phases or one phase, the project can be constructed without substantial change to existing drainage patterns.

e. FEMA Zone

The project is located within FEMA flood hazard Zone X. There are no project areas subject to inundation by the 100-year storm event. Please see Appendix F for illustration of the project location with respect to FEMA flood hazard zones.

3.0 STORM WATER QUALITY ANALYSIS

3.1 HYDROLOGIC UNIT CONTRIBUTION

The project is located in the Brawley Hydrologic Area, in the Imperial Hydrologic Unit. The corresponding number designation is 723.10.

The Imperial Hydrologic Unit consists of the majority of the Imperial Valley, encompassing over 1.3 million acres of land. The watershed includes vast acreages of agricultural land; towns such as El Centro, Calexico, and Brawley, along with a large network of IID operated Canals and Drains. The watershed is atypical of most watersheds in California, as it currently and historically has been shaped by man-made forces. The watershed's primary watercourses, the New and Alamo rivers, flow north, from the Mexican border toward their final destination, the Salton Sea. The Salton Sea, a 376 square mile closed inland lake was created in 1905 through a routing mistake and subsequent flood on the Colorado River. The Sea has been fed primarily by agricultural runoff from the New and Alamo Rivers ever since.

303(d) listed water quality impairments and TMDLs are present for the receiving waters of the project, and are discussed in Section 3.3.2.

3.2 WATER QUALITY ENVIRONMENT

3.2.1 BENEFICIAL USES

According to Table 2-3 of the Water Quality Control Plan for the Colorado River Basin Region (WQCP), the beneficial uses for the project's receiving waters are:

a. Imperial Valley Drains:

FRSH – Freshwater Replenishment
REC I – Water Contact Recreation (unauthorized, infrequent fishing activity)
REC II – Non-Contact Water Recreation (unauthorized)
WARM – Warm Freshwater Habitat
WILD – Wildlife Habitat
RARE – Preservation of Rare, Threatened or Endangered Species (only exists in some of the waterways)

It shall be noted that the above beneficial uses for the Imperial Valley Drain system are broadly based considering the fact that many of the Drains are maintained and operated as open channel conveyance systems.

b. New River:

FRSH – Freshwater Replenishment
IND- Industrial Service Supply (potential)

REC I – Water Contact Recreation (hazardous due to contamination)
REC II – Non-Contact Water Recreation
WARM – Warm Freshwater Habitat
WILD – Wildlife Habitat
RARE – Preservation of Rare, Threatened or Endangered Species

c. Salton Sea:
AQUA- Aquaculture
IND- Industrial Service Supply (potential)
REC I – Water Contact Recreation
REC II – Non-Contact Water Recreation
WARM – Warm Freshwater Habitat
WILD – Wildlife Habitat
RARE – Preservation of Rare, Threatened or Endangered Species

3.2.2 303(d) STATUS

According to the California 2006 303d list published by the State Water Resources Control Board (SWRCB), the project's receiving waters have beneficial use impairments as follows.

Table 8: 303(d) Impairments

RECEIVING WATER	HYDROLOGIC UNIT CODE	303(d) IMPAIRMENT(S)	DISTANCE FROM PROJECT (miles)
Imperial Valley Drains (Mt. Signal Drain , Greeson Drain)	723.10	DDT Dieldrin Endosulfan PCBs Selenium Toxaphene	<0.1 miles
New River	728.00	Chlordane Chloroform Chlorpyrifos Copper DDT Diazinon Dieldrin Mercury Nutrients Organic/Low DO PCBs Xylene Pesticides Toluene Selenium Toxaphene Toxicity Trash Cymene Dichlorobenzene	5 miles

Salton Sea	728.00	Nutrients Salinity Selenium	28 miles

3.2.3 TMDL STATUS

TMDLs established for receiving waters of the project are summarized in Tables 9 and 10 below.

Table 9: TMDLs

RECEIVING WATER	HYDROLOGIC UNIT CODE	TMDLs	DISTANCE FROM PROJECT (miles)
Imperial Valley Drains	723.10	Sediment/Siltation	<0.1 mile
New River	728.00	Pathogens Sediment/Siltation Trash	<0.1 miles

The Imperial Valley Drains' 2005 Sediment/Siltation TMDL sets numeric targets on the Imperial Valley Drains for Total Suspended Solids (TSS). The target is 200 mg/L which would achieve a low to moderate level of protection. According to the 2005 TMDL implementation plan, an overall 63% reduction from the current TSS level is required to meet the minimum targets set forth by the TMDL.

High sedimentation in the Imperial Valley Drains has led to increased mobilization of agricultural pesticides and a highly turbid environment for sensitive aquatic species. The main source of sediment to the New River is agricultural runoff from the Imperial Valley.

The New River's 2002 Pathogens TMDL sets numeric targets on the New River with 30 day mean, and instantaneous maximum limits for Fecal Coliforms, *E. Coli*, and Enterococci. Those limits are shown in the table below.

Table 10: TMDL Limits

	Fecal Coliforms	*E.Coli*	Enterococci
30 day Geometric Mean	200	126	33
Instantaneous Maximum	<10% Over 400	400	100

The New River's main sources of pathogens (indicated by fecal coliforms and E. coli bacteria) are discharges of municipal wastes from the Mexicali Valley in Mexico and non-disinfected but treated wastewater from five domestic Imperial Valley wastewater treatment plants. Natural sources of pathogens play a relatively insignificant role. The significance of contributions from confined animal feeding operations and other nonpoint sources of pollution in the Imperial Valley are not fully known at this time (California EPA TMDL Implementation Plan, 2002).

The New River's 2002 Sediment/Siltation TMDL sets numeric targets on the New River for Total Suspended Solids (TSS). The target is 200 mg/L which would achieve a low to moderate level of protection. According to the 2002 TMDL implementation plan, an overall 17% reduction from the current TSS level is required to meet the minimum targets set forth by the TMDL.

High sedimentation in the New River has led to increased mobilization of agricultural pesticides and a highly turbid environment for sensitive aquatic species. The main source of sediment to the New River is agricultural runoff from the Imperial Valley and Mexico.

The New River's 2007 Trash TMDL sets numeric targets on the New River for trash in the form of reduction percentages. These targets are a 75% reduction in trash within 2 years of USEPA approval of the TMDL, and a 100% reduction within 3 years of USEPA approval of the TMDL. This TMDL focuses on the reach of the New River immediately downstream of the international boundary, since this portion of the River is most impacted by trash, which primarily originates south of the international border.

3.3 REGULATORY FRAMEWORK

3.3.1 State Water Resources Control Board

In the State of California, the State Water Resources Control Board (SWRCB) and local Regional Water Quality Control Boards (RWQCBs) have assumed the responsibility of implementing the US EPA's NPDES Program and other programs under the CWA such as the Impaired Waters Program and the Antidegradation Policy. The primary water quality control law in California is the Porter-Cologne Water Quality Act (Water Code Sections 13000 et seq.). Under Porter-Cologne, the SWRCB issues joint federal NPDES Storm Water permits and state Waste Discharge Requirements (WDRs) to operators of municipal separate storm sewer systems (MS4s), industrial facilities, and construction sites to obtain coverage for the storm water discharges from these operations.

a. Basin Plan Requirement:

In addition to its permitting programs, the SWRCB, through its nine RWQCBs, developed Regional Water Quality Control Plans (or Basin Plans) that designate beneficial uses and water quality objectives for California's surface waters and groundwater basins, as mandated by both the CWA and the state's Porter-Cologne Water Quality Control Act. Water quality standards are thus established in these Basin Plans and provide the foundation for the regulatory programs implemented by the state. The Colorado River Basin RWQCB Basin Plan, which covers the project area, designates beneficial uses for surface waters and ground waters.

b. Construction General Permit:

The Construction General Permit (CGP), (Order 2009-0009-DWQ as modified by Order 2010-0014-DWQ, NPDES Permit No. CAS000002), issued by the SWRCB, regulates storm water and non-storm water discharges associated with construction activities disturbing 1 acre or greater of soil. Construction sites that qualify must submit a Notice of Intent (NOI) with the SWRCB to gain permit coverage or otherwise be in violation of the CWA and California Water Code.

The CGP requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) for each individual construction project greater than or equal to 1 acre of disturbed soil area. The SWPPP must list Best Management Practices (BMPs) that the discharger will use to control sediment and other pollutants in storm water and non-storm water runoff. The CGP requires that the SWPPP is prepared by a Qualified SWPPP Developer (QSD) and implemented at the site under the review/direction of a Qualified SWPPP Practioner (QSP).

The project includes over 1 acre of grading within the County of Imperial, and is therefore subject to the storm water discharge requirements of the CGP. The Project will submit a NOI and prepare a SWPPP prior to the commencement of soil disturbing activities. In the Colorado River Basin Region, where the project resides, the SWRCB is the permitting authority, while the County of Imperial and Colorado River Basin RWQCB provide local oversight and enforcement of the CGP.

c. Phase II MS4 Permit:

In 2003, the State Water Resources Control Board issued the Phase II regulations concerning Small Municipal Storm Sewer Systems (MS4) (Water Quality Order No. 2003-0005-DWQ). This NPDES permit was issued to all qualifying municipalities and agencies that operate a storm drain system and meet certain size criteria for MS4 system discharges into waters of the United States. Pursuant to the Permit, dischargers are required to develop a Storm Water Management Plan (SWMP) and enroll in the program. The County of Imperial has enrolled in the Permit, but does not have specific storm water related criterion for new development, related to the NPDES Program. If and when the County does develop said criterion, new development projects will be required to comply with the provisions set forth by the County of Imperial.

d. Industrial Storm Water Permit:

In 2014, the State Water Resources Control Board adopted a new Industrial General Permit (Water Quality Order No. 2014-0057-DWQ). This NPDES permit was issued by the State of California to all qualifying industrial facilities based upon land use and Standard Industrial Code (SIC). Within the County of Imperial, the IGP is administered by the Colorado River Basin Regional Water Quality Control Board. Per Attachment A of Order 2014-0057-DWQ, facilities covered by the IGP include any facility that generates steam for electric power through the combustion of coal, oil, wood, etc. The project is a solar power plant utilizing traditional photovoltaic (PV) panels for the generation of electricity, and the project includes both storage of on-site generation and grid energy storage. The project does not involve the generation of steam for electric power and does not match the description of any other facility given on Attachment A. As such the project will **not** be required to enroll in the IGP. See Appendix G for Attachment A of the IGP.

3.4 POTENTIAL POLLUTANTS

There is no sampling data available for the existing site condition. The following constituents have commonly been found on agricultural areas and could potentially affect water quality:

- Organic compounds found in pesticides used on agricultural fields
- Agricultural waste
- Loose sediments
- Excess nutrients from fertilizers

In addition to potential pollutants due to the existing agricultural land use, potential pollutants due to the proposed land use of a solar power station include the following:

- Heavy metals from infrastructure and vehicular use
- Trash and debris from human activity
- Oil and grease from vehicular use

Potential pollutants are summarized in Table 11 below.

Table 11: Potential Pollutants

SEDIMENT
HEAVY METALS
ORGANIC COMPOUNDS
TRASH & DEBRIS
OXYGEN DEMANDING SUBSTANCES
NUTRIENTS
OIL & GREASE

In examining these anticipated pollutants, the proposed project has the potential to be a source of pollutants based on historic/existing land use and typical activities involved in operating a solar power station. Through proper planning and operation of the facility however, the concentrations can be reduced to levels which will not contribute to the impairment of beneficial uses in downstream surface waters. In addition, through the source control BMPs outlined in Table 16 of Section 3.7.2., the amounts of these pollutants will be reduced to the maximum extent practicable, through behavioral and programmatic means.

Primary pollutants of concern consist of those pollutants which are anticipated onsite, and are coupled with an existing impairment on surface waters downstream of the project site. Table 12 on the following page provides the primary pollutants of concern for the Drew Solar project site.

Table 12: Primary Pollutants of Concern

PRIMARY POLLUTANTS OF CONCERN	SPECIFIC 303(D) IMPAIRMENT
SEDIMENT	Sedimentation/Siltation
HEAVY METALS	Arsenic, Copper, Mercury, Selenium, Zinc
OXYGEN DEMANDING SUBSTANCES	Organic/Low DO
TRASH AND DEBRIS	Trash
ORGANIC COMPOUNDS	PCBs
NUTRIENTS	Nutrients

Sediment: Sediment can result from erosion during storm events, as well as from dust generated by wind erosion and vehicular traffic. Sediments increase the turbidity of the receiving waters, and have the potential to adversely impact aquatic species.

Heavy Metals: The primary sources of metals in storm water are metals typically used in transportation, buildings and infrastructure and also paints, fuels, adhesives and coatings. Potential sources of heavy metals from the project include vehicular use, building construction, substation construction, gen-tie construction, energy storage construction, solar array construction, and underground pipes. Copper, lead, and zinc are the most prevalent metals typically found in runoff from these sources. Other trace metals, such as cadmium, chromium, manganese, and mercury are typically not detected in runoff from these sources or are detected at very low levels. Trace metals have the potential to cause toxic effects on aquatic life and are a potential source of groundwater contamination.

Oxygen Demanding Substances: Plant debris, food waste, and some chemical wastes fall into a category of water pollutants known as oxygen demanding substances. Such substances use dissolved oxygen in water when they decay or chemically react. If dissolved oxygen levels in water become too low, aquatic animals can become stressed or die.

Animal wastes, food wastes, leaves and twigs, and other miscellaneous organic matter carried by storm water runoff into surface water can lead to reduced oxygen levels. Potential sources of oxygen demanding substances from the project include human use and landscaping. Slow-moving waters are particularly susceptible to oxygen depletion because aeration of the water by turbulence is lacking. Therefore, oxygen that is depleted in slow-moving waters due to the presence of excess organic matter or unnatural chemical compounds is not replaced. Reduced oxygen levels in these waters are often particularly severe after a storm.

Trash and Debris: Improperly disposed or handled trash (from human use of the site) such as paper, plastics and debris including biodegradable organic matter such as leaves, grass cuttings, and food waste can accumulate on the ground surface where it can be entrained in urban runoff. A large amount of trash and debris can have significant negative impacts on the recreational value of water

body. Excessive organic matter can create a high biochemical oxygen demand in a stream and lower its water quality.

Organic Compounds: Organic compounds are carbon-based, and are typically found in pesticides, solvents, and hydrocarbons. Dirt, grease, and other particulates can also adsorb organic compounds in rinse water from cleaning objects, and can be harmful or hazardous to aquatic life either indirectly or directly. Organic compounds are therefore potentially present in runoff from the site due to prior agricultural use (pesticides), vehicular use (hydrocarbons and grease), and may be present in runoff during project operations due to washing of solar panels.

Nutrients: The primary sources of nutrients in storm water are fertilizers. Potential sources of nutrients from the project include historic agricultural land use and landscaping. Nitrogen and phosphorus are the most prevalent nutrients typically found in urban runoff. Failing septic tanks are also potential sources of nutrients in runoff.

3.5 GROUNDWATER QUALITY

Geographically, the project site is located within the Imperial Groundwater Basin. The Imperial Valley Groundwater basin is bounded on the east by the Sand Hills and on the west by the impermeable rocks of the Fish Creek and Coyote Mountains. To the north, the basin is bounded by the Salton Sea, which is the discharge point for groundwater in the basin. Major hydrologic features include the Alamo and New Rivers, which flow north towards the Salton Sea.

Per Table 2-5 of the WQCP, beneficial uses of groundwater within the Imperial Hydrologic Unit include:

MUN – Municipal and Domestic Supply;
IND – Industrial Service Supply.

The MUN beneficial use for groundwater within the Imperial Hydrologic Unit is limited only to a small portion of the ground water unit. Within the project area, groundwater is not used for municipal uses. Rather, all municipal and domestic water supply is obtained from the IID Canals. Per Table 2-1 of the WQCP, IND is defined as a use of water for industrial activities that do not depend on water quality. Therefore, impacts from the project on leading to a loss in beneficial uses of groundwater are not anticipated.

3.6 WATER QUALITY – CONSTRUCTION PHASE

Construction of the project includes site preparation, foundation construction, erection of major equipment and structures, installation of piping, electrical systems, control systems, and start-up/testing. In addition, the construction of transmission lines, utility pole pads, conductors, and associated structures will be required.

During the construction phase, sedimentation and erosion can occur because of tracking from earthmoving equipment, erosion and subsequent runoff of soil, and improperly designed stockpiles. The utilization of proper erosion and sediment control BMPs is critical in preventing discharge to surface waters/drains. The project proposes to employ proper SWPPP practices to minimize any discharges in order to meet the Best Available Technology/Best Conventional Technology (BAT/BCT) standard set forth in the Construction General Permit (CGP).

Although the project site is relatively flat, the large amount of potential disturbed area results in the potential for erosion/sediment issues.

In addition to erosion and sedimentation, the use of materials such as fuels, solvents, and paints has the potential to affect surface water quality. Many different types of hazardous compounds will be used during the construction phase, with proper containment being of high importance. Poorly managed construction materials can lead to the possibility for exposure of potential contaminants to precipitation. When this occurs, these visible and/or non-visible constituents become entrained in storm water runoff. If they are not intercepted or are left uncontrolled, the polluted runoff would otherwise freely sheet flow from the project to the IID Drains and could cause pollution accumulation in the receiving waters. A list of anticipated construction materials and their associated construction activity are provided in the table below.

Table 13: Potential Construction Related Pollutants

CONSTRUCTION ACTIVITY	CONSTRUCTION SITE MATERIAL	VISUALLY OBSERVABLE?
Paving	Hot Asphalt	Yes - Rainbow Surface or Brown Suspension
	Asphalt Emulsion	
	Liquid Asphalt (tack coat)	
	Cold Mix	
	Crumb Rubber	Yes – Black, solid material
	Asphalt Concrete (Any Type)	Yes - Rainbow Surface or Brown Suspension
Substation and Transmission Line Construction	Gasoline/Diesel	No
	Mineral and Crankcase Oil	
	Lubricants	
	Cleaning Solvents	
Equipment Cleaning	Acids	No
	Bleaches	
	Detergents	Yes - Foam
	Solvents	No
Concrete Work	Portland Cement (PCC)	Yes - Milky Liquid
	Masonry products	No
	Sealant (Methyl Methacrylate - MMA)	No
	Incinerator Bottom Ash, Bottom Ash, Steel Slag, Foundry Sand, Fly Ash, Municipal Solid Waste	No
	Mortar	Yes - Milky Liquid
	Concrete Rinse Water	Yes - Milky Liquid
	Non-Pigmented Curing Compounds	No
	Lime	No
Painting	Paint	Yes
	Paint Strippers	No
	Resins	

CONSTRUCTION ACTIVITY	CONSTRUCTION SITE MATERIAL	VISUALLY OBSERVABLE?
Painting	Sealants	
	Solvents	
	Lacquers, Varnish, Enamels, and Turpentine	
	Thinners	
Portable Toilet Facilities	Portable Toilet Waste	Yes
Adhesives	Adhesives	No
Dust Control	Water	No
	Liquid Polymer or Polymer Blend	
Vehicle Maintenance	Antifreeze and Other Vehicle Fluids	Yes - Colored Liquid
	Batteries	No
	Fuels, Oils, Lubricants	Yes - Rainbow Surface Sheen and Odor
Soil Amendment/Stabilization	Polymer/Copolymer	No
	Quicklime	No
	Herbicide, Pesticide	No
	Lignin Sulfonate	No
	Psyllium	
	Guar/Plant Gums	
	Gypsum	
Wood (Treated) Work	Ammoniacal-Copper-Zinc-Arsenate, Copper-Chromium-Arsenic, Ammoniacal-Copper-Arsenate, Copper Naphthenate	No
	Creosote	Yes - Rainbow Surface or Brown Suspension

Prior to the beginning of construction, a complete SWPPP will be provided to show evidence that the development of the project will comply with the CGP and associated local NPDES regulations. Also, in accordance with the CGP, a Notice of Intent (NOI) for coverage of projects under the CGP will be filed with the SWRCB. The Waste Discharge Identification (WDID) Number will be issued to the project before any land disturbance may begin. If the project is constructed in multiple phases, a NOI will be filed for each phase of construction.

Accordingly, the SWPPP will be implemented at the project site, and revised as necessary, as administrative or physical conditions change. The Region 7 Colorado River Basin RWQCB, upon request, must instruct the developer to make the SWPPP available for public review. The SWPPP will fully describe Best Management Practices (BMPs) that address pollutant source reduction and provide measures/controls necessary to mitigate potential pollutant sources. These include, but are not limited to: erosion controls, sediment controls, tracking controls, non-storm water management, materials & waste management, and good housekeeping practices. The above-mentioned BMPs for

construction activities are discussed further below. The SWPPP will be prepared by a Qualified SWPPP Developer (QSD) and implemented at the site under the review/direction of a Qualified SWPPP Practioner (QSP).

3.6.1 Erosion Controls

Erosion Control, also referred to as soil stabilization, is a source control measure designed to prevent soil particles from detaching and becoming transported in storm water runoff. Erosion Control BMPs protect the soil surface by covering and/or binding the soil particles. The scheduling of soil disturbing activities should be minimized during the wet season, which is Aug 1- Oct 1, and Nov 1-May 1. If such activities occur in the wet season, all exposed slopes or areas with loose soil will be stabilized. This may involve the application of soil binders, or geotextiles and mats. Due to the flat surface, creating temporary earth dikes or drainage swales may also be employed/installed prior to large, forecasted storm events to divert runoff away from exposed areas and into more suitable locations. If implemented correctly, erosion controls can effectively reduce the sediment loads entrained in storm water runoff from construction sites. Below is a list of approved construction BMPs that can be implemented for the proposed Project's SWPPP.

Erosion Controls

EC-1 Scheduling
EC-2 Preservation of Existing Vegetation
EC-5 Soil Binders
EC-6 Straw Mulch
EC-7 Geotextiles and Mats
EC-8 Wood Mulching
EC-9 Earth Dikes and Swales
EC-10 Velocity Dissipation Devices
EC-11 Slope Drains

3.6.2 Sediment Controls

Sediment controls are structural measures that are intended to complement and enhance the soil stabilization/erosion control measures and reduce sediment discharges from construction areas. Sediment controls are designed to intercept and filter out soil particles that have been detached and transported by the force of water. In addition, silt fencing will be installed along the perimeter of work areas upstream of discharge points, and will also be placed around stockpiles, and areas of soil disturbance. Check dams or chevrons will be situated in areas where high velocity runoff is anticipated/potential (such as in drainage ditches/swales). Gravel bag berms or fiber rolls should be used to intercept sheet flows on streets or at the toe of slopes (such as along streets or canal and drain access roads) to minimize sediment mobilization. Street sweeping will also be scheduled in areas where sediment can be tracked from the project site onto paved streets or roads. Below is a list of approved construction BMPs that can be implemented for the proposed Project's SWPPP.

Sediment Controls

SE-1 Silt Fence
SE-2 Desilting Basin (Detention Basins)
SE-3 Sediment Trap
SE-4 Check Dam
SE-5 Fiber Rolls
SE-6 Gravel Bag Berm
SE-7 Street Sweeping
SE-8 Sandbag Barrier
SE-9 Straw Bale Barrier
SE-10 Chemical Treatment
SE-11 Chemical Treatment

3.6.3 Tracking Controls

The proposed project site will stabilize all construction entrance/exit points to reduce the tracking of sediments onto paved streets and roads by construction vehicles. Construction roadways should also be stabilized to minimize off-site tracking of mud and dirt. Wind erosion controls will be employed in conjunction with tracking controls. Below is a list of approved construction BMPs that can be implemented for the proposed Project's SWPPP.

Tracking Controls

TC-1 Stabilized Construction Entrance / Exit
TC-2 Stabilized Construction Roadway
TC-3 Entrance / Outlet Tire Wash
WE-1 Wind Erosion Control

3.6.4 Non-Storm Water Management Controls

Non-storm water discharges consist of all discharges from a municipal storm water conveyance which do not originate from precipitation events (i.e., all discharges from a conveyance system other than storm water).

Paving and grinding operations on the project site, along with any operations which involve using water on landscape are classified as having potential for non-storm water pollutants. This also includes illegal connection and dumping on the construction site, vehicle equipment cleaning, fueling, and maintenance. The construction of project may involve the use of heavy equipment and hazardous materials. Adequate BMPs and protections will be in place at all times.

Non-Storm Water Management Controls

NS-1 Water Conservation Practices
NS-2 Dewatering Operations
NS-3 Paving and Grinding Operations
NS-4 Temporary Stream Crossing
NS-5 Clear Water Diversion
NS-6 IC/ID Detection and Reporting
NS-7 Potable Water / Irrigation
NS-8 Vehicle & Equipment Cleaning
NS-9 Vehicle & Equipment Fueling
NS-10 Vehicle & Equipment Maint.
NS-11 Pile Driving Operations
NS-12 Concrete Curing
NS-13 Concrete Finishing
NS-14 Material Use Over Water
NS-15 Demolition Over Water
NS-16 Temporary Batch Plants

3.6.5 Materials and Waste Management

Waste management consists of implementing procedural and structural BMPs for collecting, handling, storing and disposing of wastes generated by a construction project to prevent the release of waste materials into storm water discharges. All materials with the potential to contaminate storm water runoff should be delivered and stored in designated areas with secondary containment measures (i.e. covered and bermed). Chemicals, drums, and bagged materials will not be stored directly on soil, but on pallets instead. Personnel will also be trained on the proper use of the materials.

Construction staging areas will be located on the site. These areas will include construction yards that serve as field offices, reporting locations for workers, parking space for vehicles and equipment, and sites for material storage. Facilities will be fenced as necessary. Security guards will be stationed where needed.

A temporary barrier around stockpiles should be installed and a cover provided during the rainy season. Spill cleanup procedures and kits should be made readily available near hazardous materials and waste. Solid wastes, such as trash and debris, should be collected on a regular basis and stored in designated areas. Concrete and paint washout areas should be installed and properly maintained in areas conducting the associated activities. Below is a list of approved construction BMPs that can be implemented for the proposed project's SWPPP.

Waste Management and Materials

WM-1 Material Delivery & Storage
WM-2 Material Use
WM-3 Stockpile Management
WM-4 Spill Prevention and Control
WM-5 Solid Waste Management
WM-6 Hazardous Waste
WM-7 Contaminated Soil
WM-8 Concrete Waste
WM-9 Sanitary / Septic Waste

3.6.6 Monitoring Program

A monitoring program will also be included in the SWPPP that outlines storm event inspections of the project site and a sampling plan in accordance with the CGP. The monitoring program will be prepared by a QSD and implemented at the site under the review/direction of a QSP. The goals of the program are (1) to identify areas contributing to a storm water discharge; (2) to evaluate whether measures to reduce pollutant loadings identified in the SWPPP are adequate, properly installed, and functioning in accordance with the terms of the CGP; and (3) whether additional control practices or corrective maintenance activities are needed. If a discharge is observed during these inspections, a sampling and analysis of the discharge is required.

Sampling and Analysis

Any breach, malfunction, leakage, or spill observed which could result in the discharge of pollutants to surface waters that would not be visually detectable in storm water shall trigger the collection of a sample of discharge…The goal of the sampling and analysis is to determine whether the BMPs employed and maintained on site are effective in preventing the potential pollutants from coming in contact with storm water and causing or contributing to an exceedance of water quality objectives in the receiving waters. In any case of breakage and potential for non-visible pollution, sampling and analysis will be required to ensure that the beneficial uses of downstream receiving waters are protected. In addition, sampling is required for any site which directly discharges runoff into a receiving water listed in the CGP listed as impaired for sedimentation.

3.7 WATER QUALITY – POST-CONSTRUCTION

3.7.1 Site Design BMPs

The project is designed to include Site Design BMPs which reduce runoff, prevent storm water pollution associated with the project, and conserve natural areas onsite.

Table 14: Site Design BMPs

	DESIGN CONCEPT	DESCRIPTION
#1	MINIMIZE IMPERVIOUS FOOTPRINT	The project site will include a significant amount of undeveloped land and pervious area. The footprint for the solar arrays will be predominately pervious ground. A minimal amount of Class II base paving for access roads and parking will be constructed. Asphaltic concrete (AC) paving of driveway connections to public roads may be required per County of Imperial standards, however the limit of paving will be kept to the minimum amount required by the County. The County may also require additional paving on some public roads in accordance with PM10 requirements, but the amount of paving will be limited to the areas required by County.
#2	CONSERVE NATURAL AREAS	Only a small amount of existing site area can be classified as natural landscape, and will only be disturbed in necessary areas at the project.
#3	PROTECT SLOPES AND CHANNELS	The project site and surrounding areas is comprised of extremely flat topography. Erosion of slopes due to stabilization problems is not a concern.
#4	MIMIMIZE DCIAS (DIRECTLY CONNECTED IMPERVIOUS AREAS)	Minimal storm drain will be constructed onsite. The impervious areas will drain and will be allowed to pond in the detention basins and/or under the arrays. This will effectively limit all DCIAs on the project site.

3.7.2 Source Control BMPs

"Source control BMPs (both structural and non-structural)" means land use or site planning practices, or structures that aim to prevent urban runoff pollution by reducing the potential for contamination at the source of pollution. Source Control BMPs minimize the contact between pollutants and urban runoff. The following table identifies source control BMPs that would be applicable to the proposed project.

Table 15: Source Control BMPs

SOURCE CONTROL BMP		DESCRIPTION
#1	DESIGN TRASH STORAGE AREAS TO REDUCE POLLUTION INTRODUCTION	Any outdoor trash storage areas will be designed not to allow run-on from adjoining areas, screened or walled to prevent off-site transport of trash.
#2	ACTIVITY RESTRICTIONS	Restrictions include activities that have the potential to create adverse impacts on water quality.
#3	NON-STORM WATER DISCHARGES	Illegal dumping educational materials as well as spill response materials will be provided to employees.
#4	OUTDOOR LOADING AND UNLOADING	Material handling will be conducted in a manner as to prevent any storm water pollution.
#5	SPILL PREVENTION, CONTROL, AND CLEANUP	The project may require a Spill Prevention, Control, and Countermeasure (SPCC) Plan, and a Hazardous Materials Business Plan in accordance with Federal, State, or Local requirements.
#6	EDUCATION	Employees will receive materials for storm water pollution prevention in the form of brochures and other information in a format approved by the County of Imperial.
#7	INTEGRATED PEST MANAGEMENT	If any pesticide is required onsite, the need for pesticide use in the project design will be reduced by: • Keeping pests out of buildings using barriers, screens and caulking • Physical pest elimination techniques, such as squashing, trapping, washing or pruning out pests • Relying on natural enemies to eat pests • Proper use of pesticides as a last line of defense
#8	VEHICLE AND EQUIPMENT FUELING, CLEANING, AND REPAIR	All vehicles will be serviced offsite whenever possible. If servicing is required onsite, it must be conducted in an area isolated from storm drain inlets or drainage ditch inlets. The area must be bermed and precluded from run on. Any spillage must be fully contained and captured and disposed of per County of Imperial Hazardous Waste requirements.
#9	WASTE HANDLING AND DISPOSAL	Materials will be disposed of in accordance with Imperial County Hazardous Material Management guidelines, and will be sent to appropriate disposal facilities. Under no circumstances shall any waste or hazardous materials be stored outside without secondary containment.

In addition to said Source Controls, specific precautions will be taken when handling, storing or processing any materials during all phases of the proposed project. The utmost care and planning must be taken when using materials outside, and near any storm drain/drainage ditch inlets.

3.7.3 Treatment Control BMPs

As discussed in the Hydrologic Analysis, runoff from the project will be directed towards shallow ponding areas to meet the County requirements for storage of 3" or 5" of runoff within the project limits. The ponding areas will either drain through infiltration into the underlying soils or through a connection to the IID drain system, or be managed in accordance with the project's Mosquito Abatement Plan. As discussed previously, the County required 3" of runoff from the project will either be infiltrated or drain to the IID system within 72 hours. In a case of low potential for infiltration, and the potential desire to avoid connecting the project's runoff to the IID Drain system, retention requirements over the project site will be satisfied by ponded area under the arrays such that the County of Imperial requirement of 5" of retention over the project site will be satisfied. It is anticipated that stored runoff under the arrays will not drawdown in under 72 hours. A Mosquito Abatement Plan will be prepared for review and approval by the Environmental Health Department prior to issuance of grading permit. Precise drawdown times and outlet configurations will be determined at the time of final engineering.

The ponding areas will also have the capacity to store runoff from the more frequent storm events, which typically lead to storm water quality concerns. The runoff volume for the water quality storm event was calculated based on the Urban Runoff Quality Management Approach outlined in the California Stormwater BMP Handbook for New Development and Redevelopment. Based on this approach, a runoff coefficient for the site is calculated using the following regression equation:

$$C = 0.858i^3 - 0.78i^2 + 0.774i + 0.04$$

where i is the impervious fraction of the site. However, given the fact that the site impervious percentage is nearly negligible (approaches 0.1% of the developed site), use of the above regression equation is impractical (in that it yields a runoff coefficient that approaches a value of 0.04) with the proposed project. For the purpose of calculations and analysis, the Rational Method C value of 0.60 is used for water quality purposes. The depth of runoff, P_O, is then calculated as:

$$P_O = (a * C) * P_6$$

Where:
a = regression constant = 1.582 for a 24 hour draw down time
P_6 = mean annual runoff-producing rainfall depth, in watershed inches

The value for P_6 is determined using tables provided in the California Stormwater BMP Handbook. Using the table provided for the Palm Springs Thermal Airport, the location which is most representative of conditions in Imperial Valley, the value of P_6 is approximately 0.43 inches. These values then yield a depth of runoff of P_O = 0.41 inches or 0.034 feet.

To determine the volume of runoff from the water quality storm event, the depth of runoff is multiplied by the tributary area. Table 16 on the following page provides the volume of runoff for the water quality storm event, the Water Quality Control Volume (WQCV), for each drainage basin.

Table 16: WQCV

Receiving Drain: Mt. Signal Drain #1A		
Drainage Area Name	Area (ac)	Water Quality Control Volume (ac-ft)
A	72.1	2.5
Total	72.1	2.5

Receiving Drain: Mt. Signal Drain #1B		
Drainage Area Name	Area (ac)	Water Quality Control Volume (ac-ft)
I	83.0	2.8
J	79.2	2.7
Total	162.2	5.5

Receiving Drain: Mt. Signal Drain #1		
Drainage Area Name	Area (ac)	Water Quality Control Volume (ac-ft)
B	75.5	2.6
D	82.4	2.8
Total	157.9	5.4

Receiving Drain: Brockman Drain #1		
Drainage Area Name	Area (ac)	Water Quality Control Volume (ac-ft)
G	85.9	2.9
Total	85.9	2.9

Receiving Drain: Mt. Signal Drain		
Drainage Area Name	Area (ac)	Water Quality Control Volume (ac-ft)
C	83.8	2.8
E	89.5	3.0
F	84.9	2.9
H	79.7	2.7
Total	337.9	11.4

As discussed in Section 2.3.2b, the County required runoff volume will be designed to either infiltrate or drain to the IID system. Therefore, the basins are deemed adequate as treatment control BMPs for the project.

4.0 ENVIRONMENTAL IMPACTS

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would meet any of the criteria listed in the table below.

The following discussions are based on the proposed drainage system within the proposed and potential development area. The impact assessments are based on the significance criteria listed below for hydrology/water quality.

4.1 THRESHOLDS OF SIGNIFICANCE

Table 17: CEQA Thresholds of Significance

THRESHOLDS OF SIGNIFICANCE – VIII. HYDROLOGY AND WATER QUALITY	
Would the Project:	
A	Violate any water quality standards or waste discharge requirements?
B	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table?
C	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or in a manner which would result in a substantial erosion or siltation on- or off-site?
D	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?
E	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?
F	Otherwise substantially degrade water quality?
G	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
H	Place within a 100- year flood area structures which would impede or redirect flood flows?
I	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
J	Be subject to inundation by seiche, tsunami, or mudflow?

4.1.1 Impact A

Would the Project violate any water quality standards or waste discharge requirements?

Impact Analysis: As a result of the recommended site design and source control measures, and the provision of shallow ponding areas and/or detention basins, water quality exceedances are not anticipated, and pollutants are not expected within project runoff that would adversely affect beneficial uses in downstream receiving waters. Although specific County of Imperial regulations regarding storm water NPDES and new development do not exist, the project design features (settling ponds and/or detention basins) and implementation of BMPs pursuant to the Construction General Permit will serve to limit discharges of pollutants to comply with the requirements of the Construction General

Permit. If the project is phased, each phase of construction will be required to submit a Notice of Intent and SWPPP, and apply for coverage under the Construction General Permit. It is concluded that this issue is considered a less than significant impact.

4.1.2 Impact B

Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Impact Analysis: Groundwater recharge in the area will not be significantly affected due to the fact that the majority of the site will feature a pervious landscape in both the existing and proposed conditions. Detention basins will also provide infiltration and groundwater recharge. In the post construction condition, no pumping of groundwater is anticipated. During the construction phase, a significant amount of construction dewatering is not expected to be required.

Potential construction that may require dewatering includes footings and foundations for the project substation, gen-tie transmission poles, or overhead collection system poles. Dewatering associated with these portions of construction will be localized to transmission pole locations or the substation and will not result in a significant decrease in production rates of existing or planned wells.

As discussed in Section 3.5, groundwater at/near the project site is not used for beneficial uses, such as municipal, domestic, or industrial supply. Water needs will be provided by adjacent IID Canals, and are expected to be much less than that used by the existing agricultural land. It is concluded that this issue is considered no impact.

4.1.3 Impact C

Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

Impact Analysis: The proposed drainage patterns and general drainage system will be similar to the existing site. Drainage will be routed to the detention basins for detention and infiltration. In addition, the remainder of the site will follow existing drainage patterns, with storm flows conveyed toward existing IID Drains. Due to the postponement of agricultural irrigation during the life of the project, it is anticipated that the annual runoff from the proposed project site will decrease when compared to the existing condition, which is similar to when agricultural fields are fallowed and/or abandoned. It is concluded that this issue is considered no impact.

4.1.4 Impact D

Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

Impact Analysis: Existing drainage patterns will not be substantially altered due to the proposed project. The majority of the site will sheet flow through the pervious native soils, toward the shallow ponding areas.

Peak flow runoff from the project will be collected in shallow ponding areas and/or designated detention basins. The project facilities will be designed in anticipation of this ponding, and there is no potential for increased flooding onsite or in offsite IID Drains. Due to the elimination of agricultural use, it is anticipated that the annual runoff from the proposed project site will decrease when compared to the existing condition. The project will be designed to meet County of Imperial storage requirements for storm water runoff, which will result in an impoundment of runoff in excess of the anticipated volume of runoff to be generated by the 100-year storm event. It is concluded that this issue is considered no impact.

4.1.5 Impact E

Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Impact Analysis: Runoff from the project will be controlled by shallow ponding areas to not exceed existing peak storm water flow rates as discussed previously. Due to the postponement of agricultural irrigation during the life of the project, it is anticipated that the annual runoff from the proposed project site will decrease when compared to the existing condition. As such, it is concluded that this issue is considered no impact.

4.1.6 Impact F

Otherwise substantially degrade water quality

Impact Analysis: Refer to the water quality discussion included in the Impact A analysis above.

4.1.6 Impact G

Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation.

Impact Analysis: There is no housing proposed for the project. It is concluded that there is no impact related to this issue.

4.1.7 Impact H

Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

Impact Analysis: There is no area structures which would impede or redirect flood flows within a 100-year flood hazard. Please see Appendix F for illustration of the project location with respect to FEMA flood hazard zones. It is concluded that there is no impact related to this issue.

4.1.8 Impact I

Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

Impact Analysis: See response to Impact H and the FIRMettes in Appendix F. The proposed project does not propose development within the banks of the New River or Greeson Drain, which are the limits of the mapped Zone A. The project proposes to provide detention in shallow areas of ponding under arrays (approximately 1' deep) or in designated detention basins 2'-4' deep. These areas of ponding and/or detention will not contain habitable structures where significant numbers of people

would be put at high risk. The project substation, permanent O&M building, and construction trailers will not be located in proposed areas of ponding or detention.

There are no dams immediately upstream of the project; therefore dam breakage is not a risk concerning the project site.

The Imperial Valley with its low-lying canal/drain systems, lack of relief, and infrequent, intense storm periods can lead to high intensity runoff events. However, the project site does not include any residential development or significant populations of people. It is concluded that there is no impact related to this issue.

4.1.9 Impact J

Inundation by seiche, tsunami, or mudflow.

Impact Analysis: The site is approximately 28 miles from the Salton Sea, which is the nearest large water body. Due to the distance, the Salton Sea is does not pose a particularly significant danger of inundation from seiche or tsunami as related to the proposed project site.

The site is approximately 4 miles from Mt. Signal, which is the nearest significantly sloped landscape, located across the border in Mexico. The project site is not in any danger of inundation by mudflow. It is concluded that no impact associated with this issue will occur.

5.0 MAINTENANCE

The operation and maintenance requirements for each type of BMP are contained in the following sections. The project developer/owner/applicant will maintain all onsite site design, source control, and treatment control features.

5.1 POST-CONSTRUCTION BMPs

Post-construction BMPs will be maintained for the life of the project. Maintenance requirements for source control BMPs as well as treatment control BMPs are shown below. It shall be noted that preventative maintenance such as removal of trash and debris from the site will help ensure proper function of the BMPs.

Table 18: O&M Summary

SUMMARY OF BMP O&M	
BMP NAME	FREQUENCY
DESIGN TRASH STORAGE AREAS TO REDUCE POLLUTION INTRODUCTION	Inspect Monthly
ACTIVITY RESTRICTIONS	Review Bi-Yearly
NON-STORM WATER DISCHARGES	Review Bi-Yearly
OUTDOOR LOADING AND UNLOADING	Supervisors/Workers Shall Monitor Continuously
SPILL PREVENTION, CONTROL, AND CLEANUP	Supervisors/Workers Shall Monitor Continuously
EDUCATION	Review and Distribute Bi-Yearly
INTEGRATED PEST MANAGEMENT	Review Protocols and Educate Bi-Yearly
WASTE HANDLING AND DISPOSAL	Inspect Monthly
VEHICLE AND EQUIPMENT FUELING, CLEANING, AND REPAIR	Inspect/Review Monthly
HAZARDOUS MATERIAL MANAGEMENT	Supervisors/Workers Shall Monitor Continuously
DETENTION BASINS	Inspect Quarterly

Maintenance of the project site will be conducted by the project developer/owner/applicant. All construction and post construction BMPs will be the responsibility of the owner for the life of the project. The owners of the project are required to perform maintenance for the life of the project, keeping maintenance records for submittal to the County of Imperial and Regional Water Quality Control Board, if requested. In addition, the following maintenance activities will be conducted.

- Continued education of staff responsible for hazardous material hauling, loading, and use.
- Periodic visual monitoring to ensure materials are not contaminating areas exposed to storm water.

If a transfer of the property area occurs, the owner will notify the County of Imperial, and the Region 7 Colorado River Basin Regional Water Quality Control Board. The new owner will assume all responsibilities for BMP maintenance.

6.0 SUMMARY AND CONCLUSIONS

6.1 HYDROLOGY

From the analysis provided in this study, it is concluded that the project will not have a substantial impact on the hydrology of the surrounding area or of the IID Drain system. Post project site conditions reflect increases in unattenuated peak runoff generated by the project. However, the provision of detention (either through designated detention basins outside arrays or shallow areas of ponding under arrays, or a combination of both) will attenuate peak discharges from the project. Detained runoff will be either infiltrated into the underlying soil or slowly released at or below predevelopment levels into the IID Drain system in a manner consistent with existing conditions.

This conceptual study calculates a maximum volume of runoff that may be detained in accordance with the County standard of 3" and 5" of runoff within the project site. At the time of final design and engineering, a final hydrology study will be prepared and processed for approval with DPW utilizing standard industry practice that models factors such as runoff coefficient or curve number, infiltration into underlying soils, and flow in storm drain discharge pipes connected to the IID Drain system. Ultimate locations, volumes, and limits of detention basins will be determined at the time of final engineering.

The project may be constructed in multiple phases. Whether the project is constructed in several phases or one phase, the project can be constructed without substantial change to existing drainage patterns.

6.2 STORM WATER QUALITY

Prior to the beginning of construction, a complete SWPPP will be provided to show evidence that the development of the project will comply with the CGP and associated local NPDES regulations. Also, in accordance with the CGP, a Notice of Intent (NOI) for coverage of projects under the CGP will be filed with the SWRCB. The Waste Discharge Identification (WDID) Number will be issued to the project before any land disturbance may begin. If the project is constructed in multiple phases, a NOI will be filed for each phase of construction.

The use of source control and site design BMPs in practice through the day to day function of the project will result in a decreased potential for storm water pollution.

Maintenance will be the responsibility of the project owner, who will maintain the Site Design, and Source Control, and Treatment Control BMPs throughout the lifetime of the project. In the event of sale of the project, the new project owner will be required to maintain BMPs, ensuring proper function for the life of the project.

Long-term funding for BMP maintenance shall be funded by the owner. The private owner entity assumes responsibility for operation and maintenance of BMPs.

6.3 CEQA Impact Summary

The development of Project SWPPP and adherence to its prescribed BMPs will minimize the potential for a net increase in sediment loads in storm water discharges, relative to pre-construction levels. Furthermore, the SWPPP will prevent or minimize the discharges of polluted storm water and prohibited non-storm waters at levels that would cause or contribute to the exceedance of applicable water quality standards of downstream receiving waters during the construction period.

Based on the proposed Project improvements and associated BMPs, no substantial water quality impairments or significant increases in Project runoff are anticipated, and no adverse levels of pollutants are expected in Project runoff that would violate water quality standards or adversely affect beneficial uses of the downstream receiving waters.

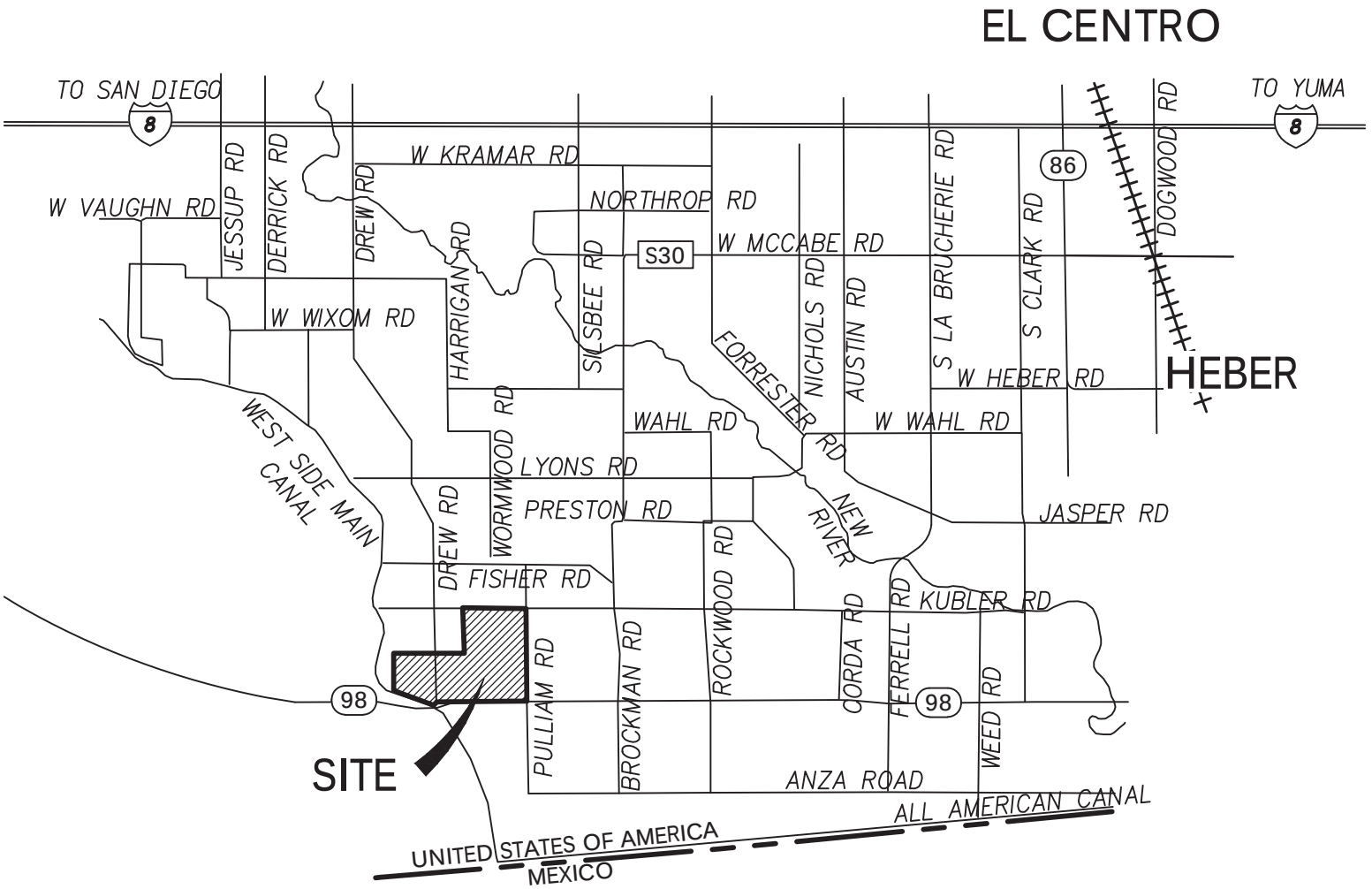
Table 19: CEQA Impact Summary

CEQA IMPACTS AND MITIGATION MEASURES		
CEQA SIGNIFICANCE CRITERIA	SIGNIFICANT IMPACT (YES/NO)	MITIGATION MEASURE
Impact A: Violate any water quality standards or waste discharge requirements?	NO	N/A
Impact B: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table?	NO	N/A
Impact C: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or in a manner which would result in a substantial erosion or siltation on- or off-site?	NO	N/A
Impact D: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	NO	N/A
Impact E: Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	NO	N/A
Impact F: Otherwise substantially degrade water quality?	NO	N/A
Impact G: Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	NO	N/A
Impact H: Place within a 100- year flood area structures which would impede or redirect flood flows?	NO	N/A

CEQA IMPACTS AND MITIGATION MEASURES		
CEQA SIGNIFICANCE CRITERIA	SIGNIFICANT IMPACT (YES/NO)	MITIGATION MEASURE
Impact I: Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	NO	N/A
Impact J: Be subject to inundation by seiche, tsunami, or mudflow?	NO	N/A

APPENDIX - A

Vicinity Map



VICINITY MAP

NO SCALE

APPENDIX - B

Soils Data

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Imperial County, California, Imperial Valley Area

December 1, 2017

Custom Soil Resource Report
Soil Map

Map Scale: 1:15,300 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 9, Sep 11, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 29, 2011—May 30, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

Imperial County, California, Imperial Valley Area

110—Holtville silty clay, wet

Map Unit Setting

National map unit symbol: h8zj
Elevation: -230 to 200 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Holtville, wet, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Holtville, Wet

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 17 inches: silty clay
H2 - 17 to 24 inches: clay
H3 - 24 to 35 inches: silt loam
H4 - 35 to 60 inches: loamy very fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Glenbar
Percent of map unit: 5 percent
Hydric soil rating: No

Imperial
Percent of map unit: 5 percent
Hydric soil rating: No

Indio
Percent of map unit: 3 percent
Hydric soil rating: No

Vint
Percent of map unit: 2 percent
Hydric soil rating: No

114—Imperial silty clay, wet

Map Unit Setting
National map unit symbol: h8zn
Elevation: -230 to 200 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Imperial, wet, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Imperial, Wet

Setting
Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium derived from mixed and/or clayey lacustrine deposits derived from mixed

Typical profile
H1 - 0 to 12 inches: silty clay
H2 - 12 to 60 inches: silty clay loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups
Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Glenbar
Percent of map unit: 4 percent
Hydric soil rating: No

Meloland
Percent of map unit: 4 percent
Hydric soil rating: No

Holtville
Percent of map unit: 4 percent
Hydric soil rating: No

Niland
Percent of map unit: 3 percent
Hydric soil rating: No

115—Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: h8zp
Elevation: -230 to 200 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Imperial, wet, and similar soils: 40 percent
Glenbar, wet, and similar soils: 40 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Imperial, Wet

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium derived from mixed and/or clayey lacustrine deposits derived from mixed

Typical profile

H1 - 0 to 12 inches: silty clay loam
H2 - 12 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 20.0
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Glenbar, Wet

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed

Typical profile

H1 - 0 to 13 inches: silty clay loam
H2 - 13 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 15.0
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Holtville

Percent of map unit: 10 percent
Hydric soil rating: No

Meloland

Percent of map unit: 10 percent
Hydric soil rating: No

122—Meloland very fine sandy loam, wet

Map Unit Setting

National map unit symbol: h8zx
Elevation: -230 to 200 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 72 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Meloland, wet, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Meloland, Wet

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed and/or eolian deposits derived from mixed

Typical profile

H1 - 0 to 12 inches: very fine sandy loam
H2 - 12 to 26 inches: stratified loamy fine sand to silt loam
H3 - 26 to 71 inches: clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 13.0
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Imperial

Percent of map unit: 3 percent
Hydric soil rating: No

Indio

Percent of map unit: 3 percent
Hydric soil rating: No

Holtville

Percent of map unit: 3 percent
Hydric soil rating: No

Glenbar

Percent of map unit: 3 percent
Hydric soil rating: No

Vint

Percent of map unit: 3 percent
Hydric soil rating: No

135—Rositas fine sand, wet, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: h90b
Elevation: -230 to 350 feet
Mean annual precipitation: 0 to 3 inches
Mean annual air temperature: 70 to 75 degrees F
Frost-free period: 300 to 350 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Rositas, wet, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rositas, Wet

Setting

Landform: Basin floors
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed and/or eolian deposits derived from mixed

Typical profile

H1 - 0 to 9 inches: fine sand
H2 - 9 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Vint
Percent of map unit: 4 percent
Hydric soil rating: No

Superstition
Percent of map unit: 4 percent
Hydric soil rating: No

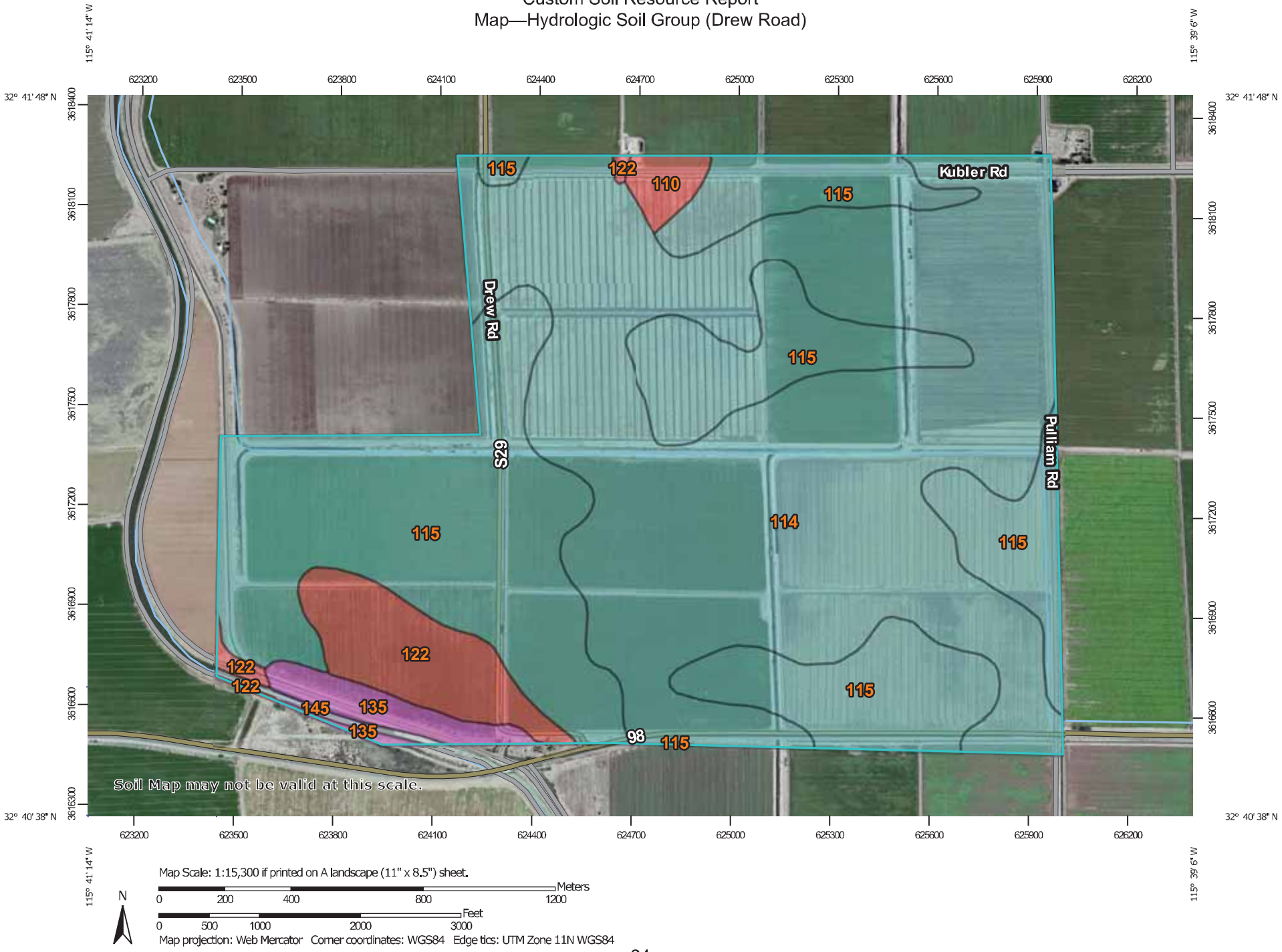
Carsitas
Percent of map unit: 4 percent
Hydric soil rating: No

Antho
Percent of map unit: 3 percent
Hydric soil rating: No

145—Water

Map Unit Composition
Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Custom Soil Resource Report
Map—Hydrologic Soil Group (Drew Road)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Imperial County, California, Imperial Valley Area
Survey Area Data: Version 9, Sep 11, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 29, 2011—May 30, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

Table—Hydrologic Soil Group (Drew Road)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
110	Holtville silty clay, wet	D	9.5	1.0%
114	Imperial silty clay, wet	C	484.7	51.4%
115	Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes	C	375.8	39.8%
122	Meloland very fine sandy loam, wet	D	49.9	5.3%
135	Rositas fine sand, wet, 0 to 2 percent slopes	A	20.0	2.1%
145	Water		3.5	0.4%
Totals for Area of Interest			**943.5**	**100.0%**

Rating Options—Hydrologic Soil Group (Drew Road)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX - C

County Standards and Rational Method Parameters

Detail A - Runoff Coefficients (C), Rational Formula

Land Use	Percent Impervious Area	Hydrologic Soil Group											
		A			B			C			D		
		Slope Range Percent			Slope Range Percent			Slope Range Percent			Slope Range Percent		
		0-2	2-6	6 & over	0-2	2-6	6 & over	0-2	2-6	6 & over	0-2	2-6	6 & over
Industrial	90	0.67 0.85	0.68 0.85	0.68 0.86	0.68 0.85	0.68 0.86	0.69 0.86	0.68 0.86	0.69 0.86	0.69 0.87	0.69 0.86	0.69 0.86	0.70 0.88
Commercial	95	0.71 0.88	0.71 0.89	0.72 0.89	0.71 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.90	0.72 0.89	0.72 0.89	0.72 0.90
High Density Residential	60	0.47 0.58	0.49 0.60	0.50 0.61	0.48 0.59	0.50 0.61	0.52 0.64	0.49 0.60	0.51 0.62	0.54 0.66	0.51 0.62	0.53 0.64	0.56 0.69
Med. Density Residential	30	0.25 0.33	0.28 0.37	0.31 0.40	0.27 0.35	0.30 0.39	0.35 0.44	0.30 0.38	0.33 0.42	0.38 0.49	0.33 0.41	0.36 0.45	0.42 0.54
Low Density Residential	15	0.14 0.22	0.19 0.26	0.22 0.29	0.17 0.24	0.21 0.28	0.26 0.34	0.20 0.28	0.25 0.32	0.31 0.40	0.24 0.31	0.28 0.35	0.35 0.46
Agriculture	5	0.08 0.14	0.13 0.18	0.16 0.22	0.11 0.16	0.15 0.21	0.21 0.28	0.14 0.20	0.19 0.25	0.26 0.34	0.18 0.24	0.23 0.29	0.31 0.41
Open Space	2	0.05 0.11	0.10 0.16	0.14 0.20	0.08 0.14	0.13 0.19	0.19 0.26	0.12 0.18	0.17 0.23	0.24 0.32	0.16 0.22	0.21 0.27	0.28 0.39
Freeways & Expressways	70	0.57 0.70	0.59 0.71	0.60 0.72	0.58 0.71	0.60 0.72	0.61 0.74	0.59 0.72	0.61 0.73	0.63 0.76	0.60 0.73	0.62 0.75	0.64 0.78

Detail B - Runoff Coefficients for Specific Land Use

Land Use	Hydrologic Soil Group											
	A			B			C			D		
	Slope Range Percent			Slope Range Percent			Slope Range Percent			Slope Range Percent		
	0-2	2-6	6 & over	0-2	2-6	6 & over	0-2	2-6	6 & over	0-2	2-6	6 & over
Row Crops	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
Median Stripturf	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
Side Slopeturf			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT												
Asphalt	.70 - .95											
Concrete	.80 - .95											
Brick	.70 - .80											
Drives, Walks	.75 - .85											
Roofs	.75 - .95											
Gravel Roads Shoulders	.40 - .60											

NOTE: The lower C values in each range should be used with the relatively low intensities associated with 2 to 10 year design recurrence intervals whereas the higher C values should be used for intensities associated with the longer 25 to 100 year deign recurrence intervals.

Figure 819.2A

Runoff Coefficients for Undeveloped Areas

Watershed Types

	Extreme	High	Normal	Low
Relief	.28 -.35 Steep, rugged terrain with average slopes above 30%	.20 -.28 Hilly, with average slopes of 10 to 30%	.14 -.20 Rolling, with average slopes of 5 to 10%	.08 -.14 Relatively flat land, with average slopes of 0 to 5%
Soil Infiltration	.12 -.16 No effective soil cover, either rock or thin soil mantle of negligible infiltration capacity	.08 -.12 Slow to take up water, clay or shallow loam soils of low infiltration capacity, imperfectly or poorly drained	.06 -.08 Normal; well drained light or medium textured soils, sandy loams, silt and silt loams	.04 -.06 High; deep sand or other soil that takes up water readily, very light well drained soils
Vegetal Cover	.12 -.16 No effective plant cover, bare or very sparse cover	.08 -.12 Poor to fair; clean cultivation crops, or poor natural cover, less than 20% of drainage area over good cover	.06 -.08 Fair to good; about 50% of area in good grassland or woodland, not more than 50% of area in cultivated crops	.04 -.06 Good to excellent; about 90% of drainage area in good grassland, woodland or equivalent cover
Surface Storage	.10 -.12 Negligible surface depression few and shallow; drainageways steep and small, no marshes	.08 -.10 Low; well defined system of small drainageways; no ponds or marshes	.06 -.08 Normal; considerable surface depression storage; lakes and pond marshes	.04 -.06 High; surface storage, high; drainage system not sharply defined; large flood plain storage or large number of ponds or marshes

Given An undeveloped watershed consisting of;
1) rolling terrain with average slopes of 5%,
2) clay type soils,
3) good grassland area, and
4) normal surface depressions.

Solution:

Relief	0.14
Soil Infiltration	0.08
Vegetal Cover	0.04
Surface Storage	0.06
C=	0.32

Find The runoff coefficient, C, for the above watershed.

APPENDIX - D

NOAA Data

NOAA Atlas 14, Volume 6, Version 2
Location name: Calexico, California, USA*
Latitude: 32.6841°, Longitude: -115.6744°
Elevation: -16.95 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.077 (0.065-0.091)	0.119 (0.100-0.142)	0.180 (0.152-0.215)	0.235 (0.196-0.284)	0.318 (0.256-0.398)	0.389 (0.307-0.498)	0.469 (0.360-0.616)	0.559 (0.417-0.757)	0.695 (0.496-0.985)	0.815 (0.560-1.20)
10-min	0.110 (0.093-0.131)	0.170 (0.144-0.203)	0.258 (0.218-0.309)	0.336 (0.281-0.406)	0.456 (0.368-0.570)	0.558 (0.440-0.714)	0.672 (0.516-0.883)	0.801 (0.597-1.09)	0.997 (0.711-1.41)	1.17 (0.803-1.72)
15-min	0.133 (0.112-0.158)	0.206 (0.174-0.245)	0.312 (0.263-0.373)	0.407 (0.340-0.492)	0.551 (0.445-0.690)	0.674 (0.532-0.864)	0.812 (0.624-1.07)	0.968 (0.722-1.31)	1.21 (0.860-1.71)	1.41 (0.971-2.08)
30-min	0.182 (0.155-0.217)	0.283 (0.239-0.337)	0.429 (0.362-0.513)	0.559 (0.468-0.676)	0.757 (0.611-0.948)	0.927 (0.731-1.19)	1.12 (0.858-1.47)	1.33 (0.993-1.80)	1.66 (1.18-2.35)	1.94 (1.34-2.85)
60-min	0.255 (0.216-0.304)	0.396 (0.335-0.472)	0.600 (0.506-0.718)	0.783 (0.655-0.946)	1.06 (0.856-1.33)	1.30 (1.02-1.66)	1.56 (1.20-2.06)	1.86 (1.39-2.53)	2.32 (1.66-3.29)	2.72 (1.87-4.00)
2-hr	0.348 (0.295-0.415)	0.521 (0.441-0.622)	0.768 (0.648-0.920)	0.986 (0.825-1.19)	1.31 (1.06-1.64)	1.58 (1.25-2.03)	1.89 (1.45-2.48)	2.22 (1.66-3.01)	2.73 (1.95-3.87)	3.17 (2.18-4.66)
3-hr	0.403 (0.341-0.480)	0.595 (0.504-0.710)	0.868 (0.733-1.04)	1.11 (0.927-1.34)	1.46 (1.18-1.83)	1.76 (1.39-2.26)	2.09 (1.61-2.75)	2.46 (1.83-3.33)	3.00 (2.14-4.25)	3.47 (2.38-5.10)
6-hr	0.495 (0.419-0.589)	0.724 (0.613-0.864)	1.05 (0.884-1.25)	1.33 (1.11-1.61)	1.75 (1.41-2.19)	2.09 (1.65-2.68)	2.47 (1.90-3.25)	2.90 (2.16-3.92)	3.52 (2.51-4.99)	4.05 (2.79-5.96)
12-hr	0.552 (0.468-0.658)	0.814 (0.689-0.971)	1.19 (1.00-1.42)	1.52 (1.27-1.83)	2.01 (1.62-2.52)	2.42 (1.91-3.10)	2.87 (2.21-3.78)	3.37 (2.51-4.57)	4.12 (2.94-5.83)	4.75 (3.26-6.98)
24-hr	0.687 (0.607-0.794)	1.02 (0.903-1.18)	1.51 (1.33-1.76)	1.95 (1.70-2.28)	2.61 (2.21-3.14)	3.17 (2.63-3.89)	3.79 (3.08-4.76)	4.48 (3.55-5.78)	5.53 (4.21-7.40)	6.42 (4.74-8.88)
2-day	0.769 (0.679-0.889)	1.15 (1.02-1.34)	1.72 (1.51-1.99)	2.22 (1.94-2.59)	2.97 (2.52-3.58)	3.62 (3.01-4.44)	4.33 (3.52-5.44)	5.14 (4.07-6.62)	6.34 (4.84-8.49)	7.38 (5.45-10.2)
3-day	0.814 (0.719-0.940)	1.22 (1.08-1.41)	1.82 (1.60-2.11)	2.35 (2.06-2.75)	3.16 (2.68-3.80)	3.84 (3.19-4.72)	4.60 (3.74-5.78)	5.45 (4.32-7.03)	6.74 (5.14-9.02)	7.84 (5.79-10.8)
4-day	0.845 (0.746-0.976)	1.27 (1.12-1.47)	1.89 (1.66-2.19)	2.44 (2.13-2.85)	3.27 (2.77-3.94)	3.97 (3.30-4.88)	4.76 (3.87-5.97)	5.63 (4.46-7.26)	6.95 (5.30-9.30)	8.07 (5.96-11.2)
7-day	0.892 (0.788-1.03)	1.33 (1.17-1.54)	1.97 (1.74-2.29)	2.54 (2.22-2.97)	3.40 (2.88-4.09)	4.12 (3.43-5.06)	4.92 (4.00-6.18)	5.81 (4.60-7.49)	7.15 (5.45-9.57)	8.28 (6.12-11.4)
10-day	0.914 (0.807-1.06)	1.36 (1.20-1.58)	2.02 (1.77-2.34)	2.59 (2.27-3.03)	3.46 (2.93-4.17)	4.19 (3.48-5.14)	4.99 (4.05-6.26)	5.88 (4.65-7.57)	7.20 (5.49-9.64)	8.32 (6.14-11.5)
20-day	0.995 (0.879-1.15)	1.50 (1.32-1.73)	2.22 (1.95-2.57)	2.85 (2.49-3.33)	3.78 (3.20-4.55)	4.55 (3.78-5.59)	5.38 (4.38-6.76)	6.30 (4.99-8.11)	7.62 (5.81-10.2)	8.73 (6.44-12.1)
30-day	1.03 (0.912-1.19)	1.57 (1.39-1.82)	2.35 (2.06-2.72)	3.02 (2.64-3.53)	4.00 (3.39-4.82)	4.81 (4.00-5.90)	5.67 (4.60-7.11)	6.59 (5.22-8.49)	7.92 (6.04-10.6)	9.00 (6.64-12.4)
45-day	1.11 (0.977-1.28)	1.71 (1.51-1.98)	2.57 (2.26-2.98)	3.30 (2.89-3.86)	4.37 (3.70-5.27)	5.24 (4.35-6.43)	6.15 (5.00-7.72)	7.12 (5.64-9.17)	8.48 (6.47-11.4)	9.57 (7.07-13.2)
60-day	1.17 (1.03-1.35)	1.84 (1.62-2.13)	2.78 (2.44-3.22)	3.58 (3.13-4.18)	4.73 (4.01-5.70)	5.66 (4.70-6.95)	6.63 (5.39-8.32)	7.64 (6.05-9.84)	9.05 (6.90-12.1)	10.2 (7.50-14.0)

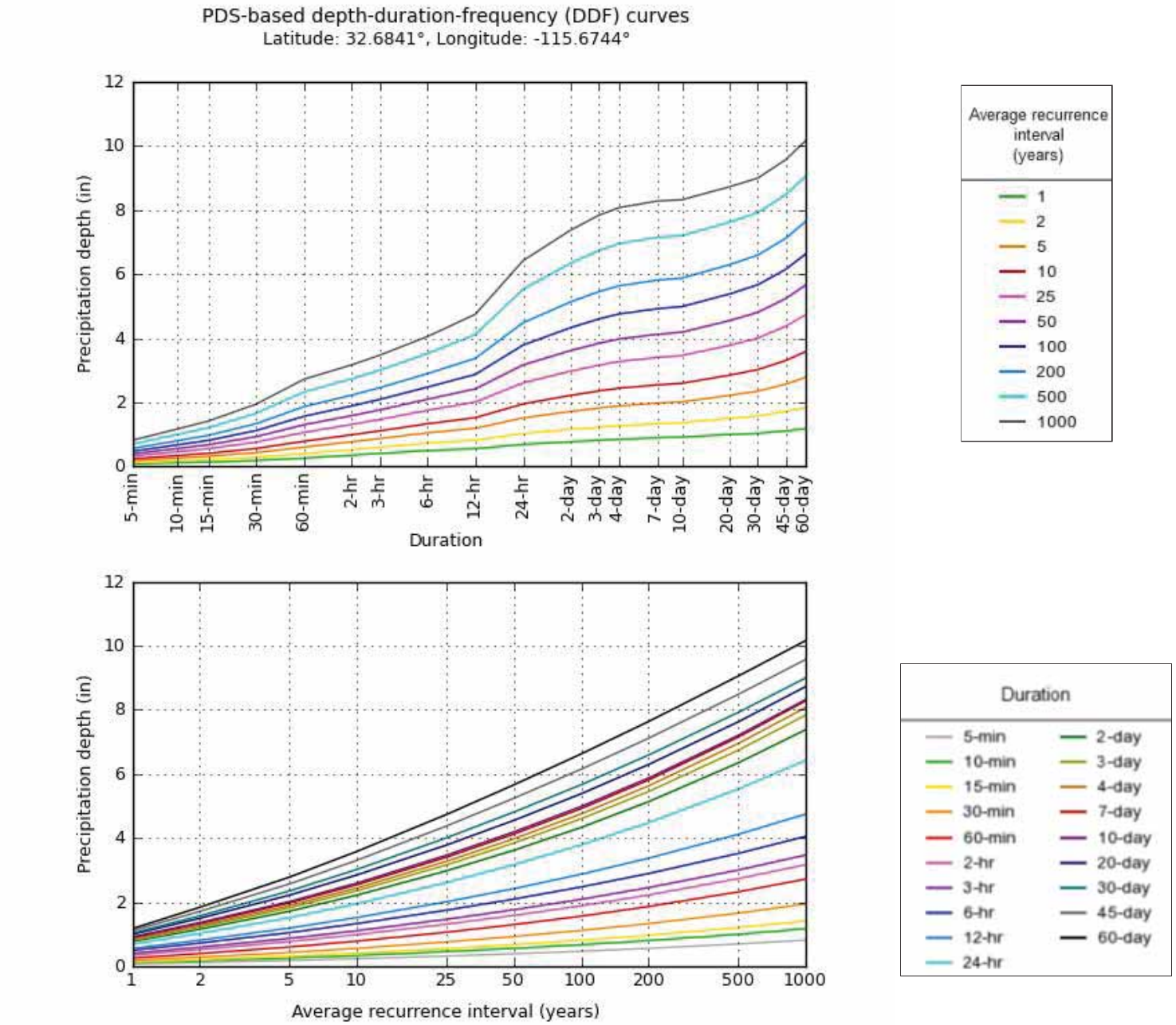
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

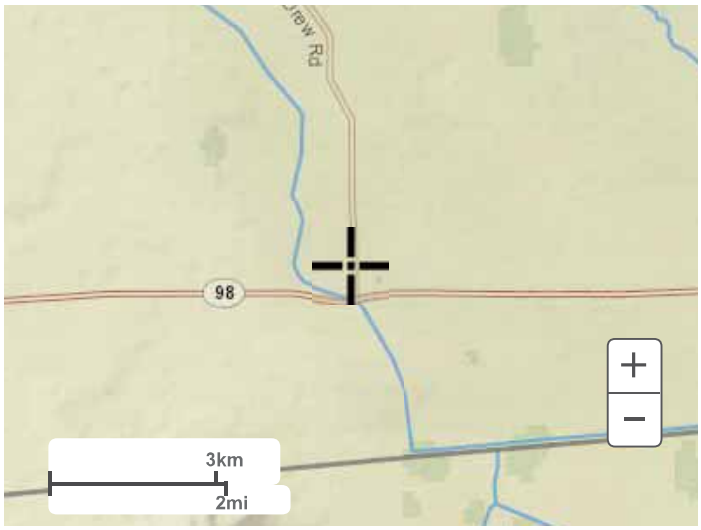


NOAA Atlas 14, Volume 6, Version 2 Created (GMT): Fri Dec 1 23:03:06 2017

Back to Top

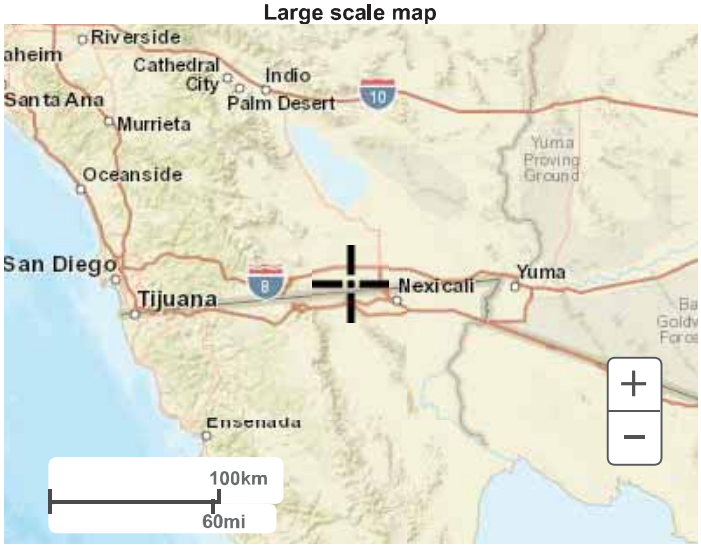
Maps & aerials

Small scale terrain

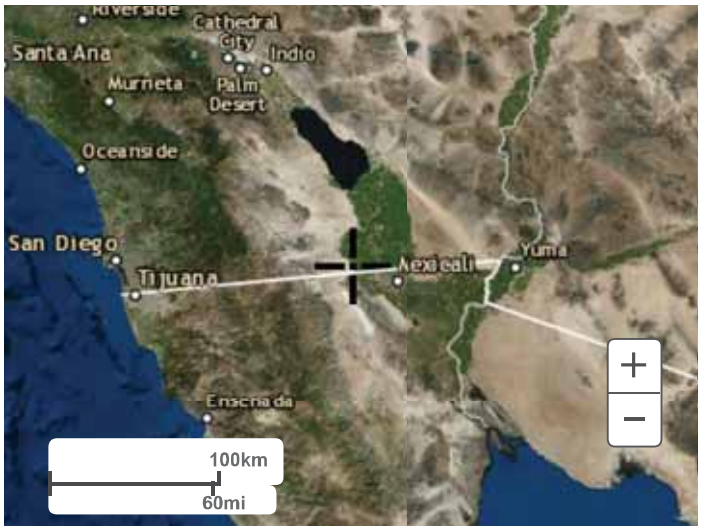


Large scale terrain

Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

APPENDIX - E

Drainage Basin Map

DRAINAGE BASIN MAP

DREW SOLAR

IMPERIAL COUNTY

SCALE: 1"=300'

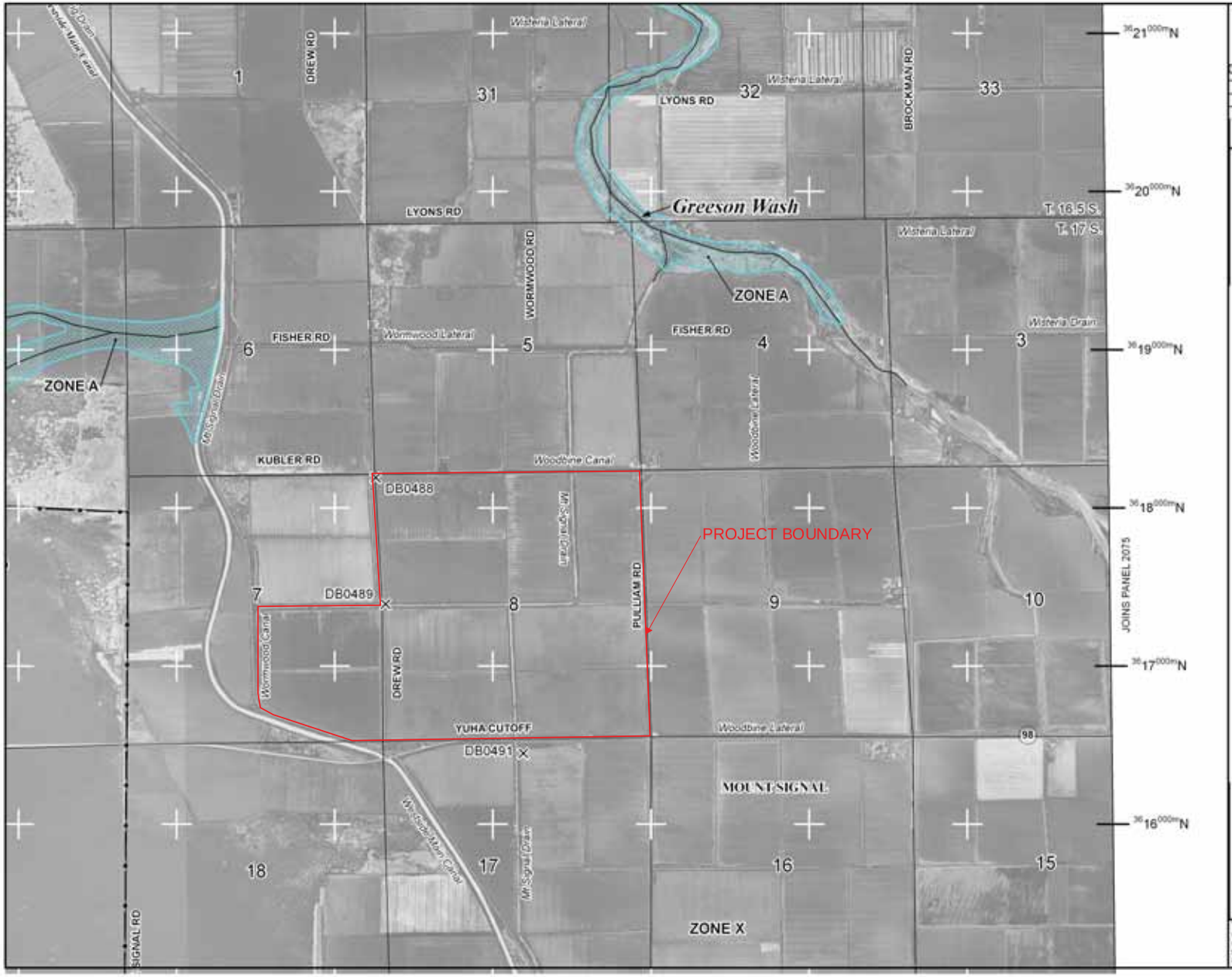
DATE: MAY 2018

SHEET 1 OF 1

FUSCOE ENGINEERING
6390 Greenwich Drive, Suite 170
San Diego, California 92122
tel 858.554.1500 ♦ fax 858.597.0335
www.fuscoe.com

APPENDIX - F

FEMA FIRMettes



MAP SCALE 1" = 2000'

00 0 2000 4000

FEET

METE

NFIP

PANEL 2050C

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

IMPERIAL COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 2050 OF 2300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
IMPERIAL COUNTY, UNINCORPORATED AREAS	060025	2050	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject

MAP NUMBER
06025C2050C

EFFECTIVE DATE
SEPTEMBER 26, 2008

Federal Emergency Management Agency

APPENDIX - G

Industrial General Permit Attachment A

ATTACHMENT A

FACILITIES COVERED BY NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES (GENERAL PERMIT)

1. Facilities Subject To Storm Water Effluent Limitations Guidelines, New Source Performance Standards, or Toxic Pollutant Effluent Standards Found in 40 Code of Federal Regulations, Chapter I, Subchapter N (Subchapter N):

   Cement Manufacturing (40 C.F.R. Part 411); Feedlots (40 C.F.R. Part 412); Fertilizer Manufacturing (40 C.F.R. Part 418); Petroleum Refining (40 C.F.R. Part 419), Phosphate Manufacturing (40 C.F.R. Part 422), Steam Electric (40 C.F.R. Part 423), Coal Mining (40 C.F.R. Part 434), Mineral Mining and Processing (40 C.F.R. Part 436), Ore Mining and Dressing (40 C.F.R. Part 440), Asphalt Emulsion (40 C.F.R. Part 443), Landfills (40 C.F.R. Part 445), and Airport Deicing (40 C.F.R. Part 449).

   .

2. Manufacturing Facilities:

   Facilities with Standard Industrial Classifications (SICs) 20XX through 39XX, 4221 through 4225. (This category combines categories 2 and 10 of the previous general permit.)

3. Oil and Gas/Mining Facilities:

   Facilities classified as SICs 10XX through 14XX, including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 Code of Federal Regulations. 434.11(1) because the performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Acts authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with any overburden, raw material, intermediate products, finished products, by-products, or waste products located on the site of such operations. Inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator. Inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined material; or sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim.

4. Hazardous Waste Treatment, Storage, or Disposal Facilities:

   Hazardous waste treatment, storage, or disposal facilities, including any facility operating under interim status or a general permit under Subtitle C of the Federal Resource, Conservation, and Recovery Act.

5. Landfills, Land Application Sites, and Open Dumps:

   Landfills, land application sites, and open dumps that receive or have received industrial waste from any facility within any other category of this Attachment; including facilities subject to regulation under Subtitle D of the Federal Resource, Conservation, and Recovery Act, and facilities that have accepted wastes from construction activities (construction activities include any clearing, grading, or excavation that results in disturbance).

6. Recycling Facilities:

   Facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093.

7. Steam Electric Power Generating Facilities:

   Any facility that generates steam for electric power through the combustion of coal, oil, wood, etc.

8. Transportation Facilities:

   Facilities with SICs 40XX through 45XX (except 4221-25) and 5171 with vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication) or other operations identified under this Permit as associated with industrial activity.

9. Sewage or Wastewater Treatment Works:

   Facilities used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge, that are located within the confines of the facility, with a design flow of one million gallons per day or more, or required to have an approved pretreatment program under 40 Code of Federal Regulations part 403. Not included are farm lands, domestic gardens, or lands used for sludge management where sludge is beneficially reused and are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the Clean Water Act.

APPENDIX K

BIOLOGICAL RESOURCES REPORT
RESULTS OF BURROWING OWL SURVEY

THIS PAGE INTENTIONALLY LEFT BLANK.

DUDEK

MAIN OFFICE
605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 760.942.5147 T 800.450.1818 F 760.632.0164

May 30, 2018 10756

Mr. Robert Ferrara
Drew Solar, LLC
PO Box 317
El Centro, California 92244

Subject: ***Results of Burrowing Owl Survey Conducted for the Drew Solar Project, Imperial County, California***

Dear Mr. Robert Ferrara:

This letter reports on a four-pass protocol survey for burrowing owls (*Athene cunicularia*) in support of the Drew Solar Project (Project). The project site is situated near a developed portion of Imperial County (see Figures 1 and 2). Dudek was requested to conduct surveys pursuant to the survey guidelines outlined in Appendix D of the Staff Report on Burrowing Mitigation (CDFG 2012).

PROJECT LOCATION AND DESCRIPTION

The Project is located north of State Route 98 and east of Mandrapa Road, within the Colorado Desert, City of Calexico, Imperial County (Figure 1). The Assessor's Parcel Numbers are 052-170-037, 052-170-056, 052-170-039, 052-170-032, 052-170-031, and 052-170-067. The site is located in Sections 7 and 8 of Township 17 South, Range 13 East of Mount Signal USGS Topographical map quadrangle (Figure 1). The project site is bounded by State Route 98 to the south and cropland and agricultural fields to the northand west and solar facilities to the east.

ENVIRONMENTAL SETTING

The study area has a relatively flat topography with a few small folds where drainages are present. The majority of the Study Area is currently being utilized for active farming production and human disturbance occurs throughout much of the site. It appears that past disturbance (e.g., discing, and/or farming) has substantially altered the natural vegetation, but not topography, across most of the study area. Elevation ranges between about 0 and 30 feet below sea level. Soils on site include: Holtville silty clay, wet; Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes; Imperial silty clay, wet; Meloland very fine sandy loam, wet; and Rositas fine sand, wet, 0 to 2

percent slopes. Several drainages are present within the portions of the study area surrounding the project site.

The majority of the project site is dominated by a mix of ruderal native and nonnative plants. Together this mix is not reflective of a natural stage of any natural community but is typical of heavily disturbed, fallow fields developed for cropland and agricultural fields. These fields provide suitable nesting and foraging habitat for burrowing owls.

METHODS

Burrowing owl is a CDFW species of special concern (SSC) and federal BBC. Qualified biologists conducted a habitat assessment, followed by focused surveys in suitable habitat (e.g., grasslands, disturbed lands, and other open habitats where suitable burrow resources exist, and are relatively flat or have low slopes) within the project area and a 200-foot buffer where legal access was granted. Biologists conducted surveys pursuant to the survey guidelines outlined in Appendix D of the Staff Report on Burrowing Mitigation (CDFG 2012). On average, the biologists walked 15-meter transects and documented the presence of suitable burrows and/or burrow surrogates (e.g., rock cavities, pipes, culverts, debris piles) >11cm or greater in diameter and >150 cm in depth required for habitat to be considered suitable. All potential burrows were examined for sign and recorded using a GPS unit. Climatic conditions at the time of the survey were within protocol guidelines and surveys were conducted under good weather conditions that would permit clear detection of individuals should they occur on site (Table 1).

Dudek wildlife biologists Ben Delancey, Abby Bergsma, and Shane Valiere conducted a four-pass pre-construction survey for burrowing owl between April 12, 2017 and September 28, 2017, which captured the majority of the breeding season as well as the beginning of the migration period (Table 1). The study area consisted of the project site excluding paved roads and other developed areas as shown in Figure 2. The survey consisted of walking the entire study area where suitable open (e.g., grasslands, disturbed, and ruderal fields) habitat occurred, while searching for burrowing owls, sign, and potential burrow sites. The survey was conducted such that 100% coverage of the entire project and 200-foot buffer area was covered (i.e., approximate 15-meter transects were walked across the entire site). While walking the study area, the biologist searched for owls, owl sign, and potential burrow sites. Climatic conditions at the time of the survey were within protocol guidelines (CDFG 2012) where suitable burrow resources are present.

Table 1

Schedule of Burrowing Owl Surveys

Date	Personnel	Survey Pass	Time	Conditions (temperature, cloud cover, and wind)
4/12/2017	BD	1	8:00 AM–10:45 AM	70–80°F; 10% cc; 3 mph wind
4/13/2017	BD, AB	1	7:00 AM–10:45 AM	70–80°F; 10% cc; 3 mph wind
4/14/2017	BD, AB	1	6:15 AM–10:55 AM	56–73°F; 0–10% cc; 0–3 mph wind
6/02/2017	SV	2	6:41 AM–11:45 AM	75–87°F; 0% cc; 0–1 mph wind
6/22/2017	SV	3	6:48 AM–10:40 AM	84–99°F; 0% cc; 0–4 mph wind
9/28/2017	SV	4	7:20 AM–11:05 AM	67–87°F; 0% cc; 0–2 mph wind

Notes: BD = Ben Delancey; AB = Abby Bergsma; SV = Shane Valiere; °F = degrees Fahrenheit; cc = cloud cover; mph = miles per hour.

RESULTS

Biologists observed burrows during all four survey passes and burrowing owls during the first three survey passes. A total of 17 active burrow locations were recorded (Figure 3). An active burrow is defined as a burrow showing signs of owl activity (e.g., burrowing owl present, whitewash or pellets). A total of 5 burrowing owls were observed within the study area, including one pair (see Figure 3).

Please contact me at 760.479.4254 or bortega@dudek.com with questions regarding the contents of this report.

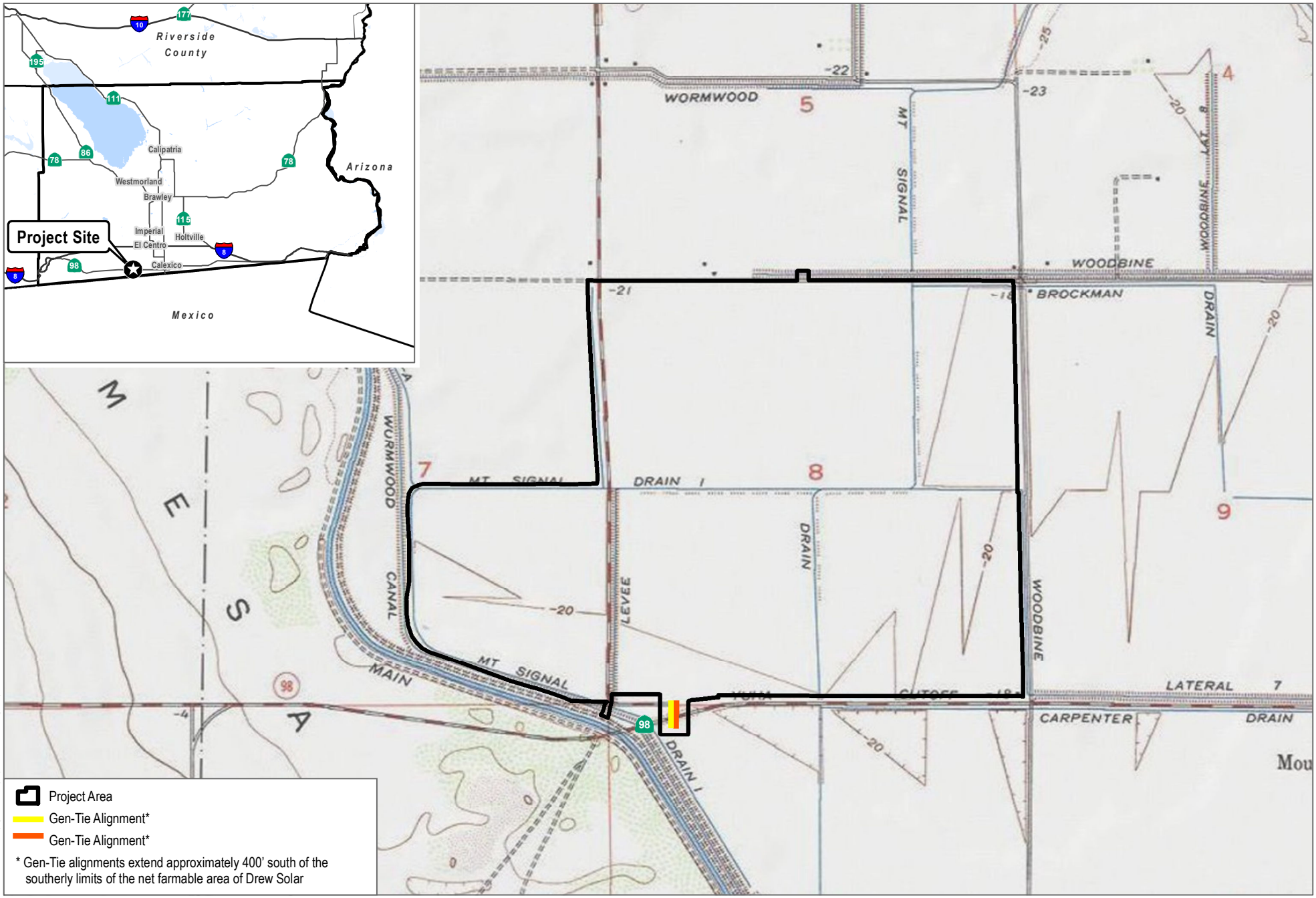
Sincerely,

Brock Ortega
Principal

Att: Figure 1, Project Location
Figure 2, Project Area
Figure 3, Biological Resources

REFERENCES CITED

CDFG (California Department of Fish and Game). 2012. *Staff Report on Burrowing Owl Mitigation*. March 7, 2012. Accessed 2015. http://www.dfg.ca.gov/wildlife/nongame/docs/BUOWStaffReport.pdf.



SOURCE: USGS 7.5-Minute Series Mount Signal Quadrangle

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Burrowing Owl Survey Report for the Drew Solar Project

SOURCE: NAIP 2016

DUDEK

0 500 1,000 Feet

FIGURE 2

Project Area

Burrowing Owl Survey Report for the Drew Solar Project

Project Area
Gen-Tie Alignment*
Gen-Tie Alignment*
Potential within the IID Drains
Vegetation Communities
AGR - General Agriculture
DEV - Urban/Developed
DH - Disturbed Habitat
OW - Open Water
Pluser - Arrow weed
Schame - American bulrush
TAM - Tamarisk thickets
Typdom - Southern cattail
UVC - Unvegetated channel
Jurisdictional Resources
Non-wetland Waters (ACOE/RWQCB/CDFW)
Wetland or Riparian Area (ACOE/RWQCB/CDFW)
Wetland or Riparian Habitat (CDFW Only)
Data Stations
Burrowing Owl Survey Results
Burrowing Owl observation
burrow
* Gen-Tie alignments extend approximately 400' south of the southerly limits of the net farmable area of Drew Solar

SOURCE: NAIP 2016

DUDEK

0 500 1,000 Feet

FIGURE 3

Biological and Jurisdictional Resources

Burrowing Owl Survey Report for the Drew Solar Project

APPENDIX L
WATER SUPPLY ASSESSMENT

THIS PAGE INTENTIONALLY LEFT BLANK.

DREW SOLAR

WATER SUPPLY ASSESSMENT

COUNTY OF IMPERIAL, CALIFORNIA

PREPARED FOR:

IMPERIAL COUNTY PLANNING & DEVELOPMENT SERVICES
801 Main Street
El Centro, CA 92243
(442) 265-1736

PREPARED BY:

FUSCOE ENGINEERING, INC.
16795 Von Karman, Suite 100
Irvine, CA 92606
949.474.1960
www.fuscoe.com

FEBRUARY 2018

REVISED: AUGUST 27, 2018

THIS PAGE INTENTIONALLY LEFT BLANK.

TABLE OF CONTENTS

List of Tables

List of Figures

Appendices

Acronyms

AF	Acre-Foot or Acre-Feet
AFY	Acre-Feet per Year
AOP	Annual Operations Plan
CAP	Central Arizona Project
CDCR	California Department of Corrections and Rehabilitation
CDPH	California Department of Public Health
CDWR	California Department of Water Resources
CEQA	California Environmental Quality Act
CRWDA	Colorado River Water Delivery Agreement
CUP	Conditional Use Permit
CVWD	Coachella Valley Water District
EDP	IID Equitable Distribution Plan
EIS	Environmental Impact Statement
ICPDS	Imperial County Planning and Development Services
ICS	Intentionally Created Surplus
IID	Imperial Irrigation District
IOPP	Inadvertent Overrun Payback Policy
ISG	Interim Surplus Guidelines
IRWMP	Integrated Regional Water Management Plan
IWSP	Interim Water Supply Policy
KAF	Thousand Acre Feet
LAFCO	Local Agency Formation Commission
LCR	Lower Colorado Region
MCI	Municipal, commercial, industrial
MGD	Million Gallons per Day
MW	Megawatt
MWD	Metropolitan Water District of Southern California
NAF	Naval Air Facility
PVID	Palo Verde Irrigation District
QSA/Transfer Agreements	Quantification Settlement Agreement and Related Agreements
SB	Senate Bill
SDCWA	San Diego County Water Authority
SNWA	Southern Nevada Water Authority
TLCFP	Temporary Land Conversion Fallowing Policy
USBR	United States Bureau of Reclamation
USEPA	United States Environmental Protection Agency
WSA	Water Supply Assessment

THIS PAGE INTENTIONALLY LEFT BLANK.

Purpose of Water Supply Assessment

This Water Supply Assessment (WSA) was prepared for the Imperial County Planning and Development Services (ICPDS) and Drew Solar, LLC (Applicant) by water supply experts at Fuscoe Engineering, Inc. ("Fuscoe"), as the consultant, regarding Drew Solar project ("Project" or "Drew Solar"). This study is a requirement of California law, specifically Senate Bill 610 (referred to as SB 610). For a "project" (as defined in Water Code § 10912) that is subject to CEQA, SB 610 requires a lead agency to identify any public water system that may supply water to the project and to request the project proponent to prepare a specified water supply assessment.

This study has been prepared pursuant to the requirements of section 10910 of the California Water Code (Water Code), as amended by SB 610 (Costa, Chapter 643, Stats. 2001). The purpose of SB 610 is to advance water supply planning efforts in the State of California. SB 610 requires the lead agency (ICPDS) to identify any public water system or water purveyor that may supply water for the project, and to prepare a WSA based on this information. Once the water supply system is identified and water usage is established for construction and operations for the life of the project, the lead agency is then able to coordinate with the local water supplier and make informed land use decisions to help provide California's cities, farms and rural communities with adequate water supplies.

Under SB 610, water supply assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code section 10912 [a]) that are subject to the California Environmental Quality Act (CEQA). Due to increased water demands statewide, SB 610 seeks to improve the link between information on water availability and certain land use decisions made by cities and counties in an effort toward managing the demand placed on California's water supply. It provides further regulations and incentives to preserve and protect future water needs. Ultimately the lead agency will determine whether water supplies will be sufficient to satisfy the demands of the Project, in addition to existing and planned future uses.

Drew Solar qualifies as a "project" under Water Code section 10912 because it is a proposed industrial use occupying more than forty (40) acres of land. Water Code section 10911(c) requires for the Project that the County "shall determine, based on the entire record, whether project water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses." Specifically, Water Code section 10910(c)(3) states "the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20 year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses."

Executive Summary

Imperial County Planning and Development Services (ICPDS), the lead agency, has requested a WSA as part of the project and environmental review for the Drew Solar Project ("Project" or "Drew Solar"). This study is intended for use by ICPDS in its evaluation of water supplies for existing and future land uses. The evaluation examines the following water elements:

- Water availability during a normal year
- Water availability during a single dry, and multiple dry water years
- Water availability during a 41-year projection to meet existing demands
- Expected water demands of the project
- Reasonable foreseeable planned future water demands to be served by the Imperial Irrigation District

The Project site lies within Imperial Irrigation District's (IID) Imperial Unit and as such is eligible to receive water service. IID has adopted an Interim Water Supply Policy for Non-Agricultural Projects (IWSP), from which water supplies can be contracted to serve new developments within IID's water service area. For applications processed under the IWSP, applicants are required to pay a processing fee and, after IID board approval of the corresponding agreement, are required to pay a reservation fee(s) and annual water supply development fees.

The IWSP sets aside 25,000 acre-feet (AF) of IID's Colorado River water supply to serve new non-agricultural projects. To date, a balance of 23,800 AF remains available under the IWSP for new non-agricultural projects ensuring reasonably sufficient supplies for such water users. The operational Project water demand of approximately 116 AFY represents 0.5 % of the unallocated supply set aside for nonagricultural projects, which would not affect IID's ability to provide water to other users in IID's service area.

Project Description

Project Location

The Drew Solar project (Project) is a proposed solar photovoltaic (PV) energy-generating and utility scale energy storage facility located in Imperial County, California, approximately 6.5 miles southwest of the city of El Centro, California and 7.5 miles directly west of Calexico, California (see Figure 1). The geographic center of the Project roughly corresponds with 32° 41′ 13″ North and 115° 40′ 8″ West, at an elevation of 19 feet below sea level. The U.S./Mexico border is approximately 1.85 miles south of the Project area. The Project is located on agricultural land owned by Imperial Irrigation District (IID).

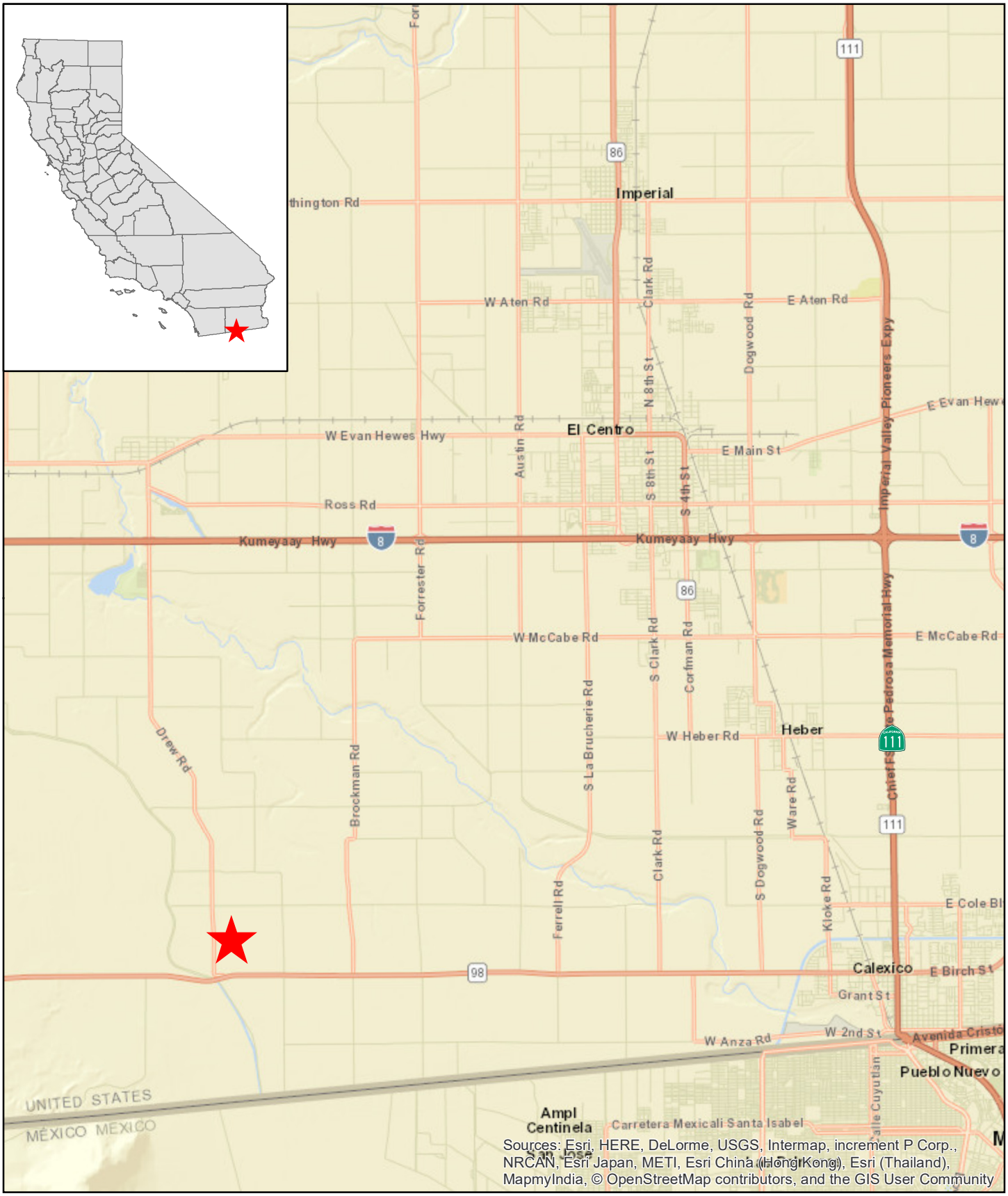
More specifically, the Project is located south of Kubler Road, west of Pulliam Road, east of Mandrapa Road, and north of State Highway 98 in southwestern unincorporated Imperial County (see Figure 2). Project site parcels include a total of approximately 855 gross acres and 762.8 net farmable acres of lands that are currently zoned as General Agriculture (A-2), Agricultural-Heavy (A-3) or General Agricultural Rural Zone (A-2R). See Table 1 for a summary of the water delivery canals serving the Project area. Historical water deliveries to the Project site for agricultural use averaged approximately 4,618 AFY between 2003 and 2017.[1]

Table 1 - Drew Solar Land and Water Delivery Data

APN	Gross Acreage	Net Acreage	Water Delivery Canal/Gate
052-170-039	91.73	69.8	Wormwood 14
052-170-067	72.04	67.2	Wormwood 13
052-170-031	168.61	157.1	Woodbine 57 and Wormwood 12
052-170-056	178.07	152.2	Wormwood 11 and 11a
052-170-032	176.24	158.6	Woodbine 43a and Woodbine 44
052-170-037	168.31	157.9	Woodbine 41 and 42
Total	855	762.8	

The developer/project proponent, Drew Solar, LLC, has filed an application for six (6) conditional use permits (CUPs) to enable the development of the proposed Project. The lifetime of the Project based on the Development Agreement is a maximum of 40 years which includes construction and operation of the Project. Decommissioning must happen immediately after the 40-year term.

[1] Historical water delivery data to Project site was provided by IID in February 2018.



Drew Solar Vicinity Map

Figure 1

Imperial County

2/20/2018

FUSCOE ENGINEERING
full circle thinking

★ Drew Solar Location

0 2 4 Miles

X:\Projects\1697\01\MXD\1_Vicinity_WSA.mxd

Figure 2 – Project Location

Date: 7/31/2018

LEGEND

- Project Boundary
- Solar + Storage Gen-tie
- Storage Gen-tie
- Project Electrical Crossing
- IID Distribution Circuit
- SR 98 Access
- County Road Access
- IID Earthen Lateral Drain
- IID Earthen Drain
- IID Concrete Canal
- IID Earthen Canal

Drew Solar Project Area

The Project site was carefully chosen to avoid and minimize impacts to the environment. Key considerations in the Project site selection were the following:

- The site ranks among the highest in solar resource potential in the nation.
- The Project minimizes the potential impact to the environment by:
    - Locating the Project on disturbed land.
    - Maximizing the use of existing infrastructure (substation, roads, and water sources).
    - Minimizing the potential impacts to wildlife by avoiding to the extent practical sensitive habitats and designated resources, reserves and protected areas.
- The Project reduces the emission of GHGs from the generation of electricity by producing and using renewable energy.
- The site is located near and adjacent to previously approved solar projects.
- Generation Interconnection Transmission line is short and avoids impacts to Bureau of Land Management land.
- The Project provides economic benefits and jobs to Imperial County.
- Lease revenue of more than $30 million is anticipated over the Project life.
- Solar Fallowing allows IID to meet its water conservation goals/requirements.
- This Project reinforces Imperial County's position as a leader in the renewable energy world.
- The Project creates minimal impacts to traffic -- once the facility is constructed, the maintenance is minimal, and therefore there will be minimal traffic around the site.
- The photovoltaic panels do not produce noise or emit any air pollution.
- Construction and reclamation will each require minimal water (~1,200 AF total).
- Dust control and panel washing during operation require minimal water (~60 AFY).
- The combination of construction, operational and decommissioning water demands are amortized below, which results in an average Project water demand of 116 AFY over the lifetime of the Project.
- Energy Storage enables better energy balancing and great grid reliability.
- Energy Storage will likely reduce blackouts.
- Energy Storage helps levelize the cost of energy.
  Energy Storage maximizes Californian's investments in transmission infrastructure.

The Project will use PV technology to convert sunlight directly into direct current (DC) electricity. The process starts with photovoltaic cells that make up photovoltaic modules (environmentally sealed collections of photovoltaic cells). PV modules are generally non-reflective. Groups of photovoltaic modules are wired together to form a PV array. The DC produced by the array is collected at inverters (power conversion devices) where the DC is converted to alternating current (AC). The voltage of the electricity is increased by a transformer at each power conversion station to a medium voltage level (typically 34.5 kilovolts (kV)). Medium voltage electric lines (underground and/or overhead) are used to collect the electricity from each medium voltage transformer and transmit it to the facility substation, where the voltage is further increased by a high voltage transformer to match the electric grid for export to the point of interconnection at the Drew Road Switchyard. Disconnect switches, fuses, circuit breakers, and other miscellaneous equipment will be installed throughout the system for electrical protection and operations and maintenance purposes.

The Project may include only one PV technology or a combination of various PV technologies, including but not limited to crystalline silicon-based systems, thin-film systems, perovskites, and concentrating PV systems.

Additional Project Features

The Project will also host utility scale energy storage system(s) that will enable the storage facility to utilize energy from the grid or the solar field. At full build-out, most of the Project site will be disturbed by construction of the Project. Temporary construction lay down, construction trailers, and parking areas will be provided within the Project site. Due to the size of the Project site, the solar field lay down areas may be relocated periodically within the solar field acreage as the project is built out in phases.

In addition to the structures associated with the solar field and energy storage, each of the 6 CUPs of the Project may include an Operations and Maintenance (O&M) building or buildings. The Project may also include additional auxiliary facilities such as raw water/fire water storage, treated water storage, evaporation ponds, storm water retention basins, water filtration buildings and equipment, and equipment control buildings, septic system(s) and parking. The design and construction of the buildings, solar arrays (panels, etc.), energy storage facilities, and auxiliary facilities will be consistent with County building standards.

The Project will include electric and vehicular crossings of State facilities, IID facilities and County facilities. Due to the nature of the Project and the rapidly changing technology, the exact locations of the crossings are not known at this time. However, it should be assumed for CEQA analysis purposes that wherever an IID facility (drain, irrigation canal, electric line, etc.) or County or State facility (road, etc.) intersect the Project, an electric or vehicular access crossing will occur. The Project crossings will not interfere with the purpose of these Agencies' facilities. For instance, where an IID owned and operated drain or canal flows, the Project crossing will maintain drain function.

Project Phasing

The proposed Project consists of a solar PV generating facility approximately 100 megawatts alternating current (MW) in size. The ultimate energy output is dependent on several variables, including offtake arrangements and the evolving efficiency of PV panels, so it is possible that the Project could generate more or less than 100 MW. The Project may be constructed at one time over approximately 18 months, or it may be built out over an approximately ten year period.

The phased project would allow utilities greater flexibility in obtaining renewable energy to meet ratepayer needs. The Project Proponent is requesting that a Conditional Use Permit (CUP) be issued for each of the 5 phases of the Project plus a 2nd CUP for the 5th phase. The construction equipment, materials, and labor involved in building the Project remain similar whether the project is constructed in phases over time or built out over an 18 month period. The 18 month buildout of the entire Project at once results in greater intensity of labor and equipment during the construction period. Each phase of the project may have its own offtaker and operate independently from the other phases. The phases shown on the phasing plan are conceptual and may change. The phases may be aggregated during construction and operations/maintenance so that multiple phases could be built at one time. All phases are anticipated to utilize proposed gentie lines that run from the south end of the Project site across Drew Road and State Route 98 into the existing Drew Switchyard located on APN 052-

190-039. The phases are anticipated to use the main Project switchyard; however, each phase may independently construct its own up to 230kv step-up transformer and switchyard. A list of the conceptual phases along with the APNs and approximate acreage is provided below.

Table 2 Project Phasing

Phase 1	
APN 052-170-056	157.9 net acres
Phase 2	
APN 052-170-037	158.6 net acres
Phase 3	
APN 052-170-032	152.2 net acres
Phase 4	
APN 052-170-031	157.1 net acres
Phase 5	
APN 052-170-039	69.8 net acres
APN 052-170-067	67.2 net acres
Total Phase 5	137.0 net acres

Additional Project details can be found in the Project Description document associated with the Drew Solar Project.

Description of IID Service Area

The Project site is located in Imperial County in the southeastern corner of California. The County is comprised of approximately 4,597 square miles or 2,942,080 acres[2], bordered by San Diego County to the west, Riverside County to the north, the Colorado River/Arizona boundary to the east, and 84 miles of international boundary with the Republic of Mexico (Mexico) to the south (International Border). Approximately fifty percent (50%) of Imperial County is undeveloped land under federal ownership and jurisdiction. The Salton Sea accounts for approximately eleven percent (11%) of Imperial County's surface area. In 2015, fifteen percent (15%) of the area was in irrigated agriculture (446,796 acres), including 14,676 acres of the Yuma project, some 35 sections or 5,600 acres served by Palo Verde Irrigation District (PVID), and 426,530 acres served by IID.[3,4]

The area served by IID is located in Imperial Valley, which is generally geographically synonymous with IID's Imperial Unit, lying south of the Salton Sea, north of the United States /Mexico International Border and generally in the 658,942 acre area between IID's Westside Main and East Highline canals.[5] In 2015, IID delivered untreated water to 426,530 net irrigated acres, predominantly in the Imperial Valley along with small areas of East and West Mesa land. The developed area consists of seven (7) incorporated cities (Brawley, Calexico, Calipatria, El Centro, Holtville, Imperial and Westmorland), three (3) unincorporated communities (Heber, Niland, Seeley), and three (3) institutions (Naval Air Facility [NAF] El Centro, Calipatria California Department of Corrections and Rehabilitation [CDCR], and Centinela CDCR) and supporting facilities. Figure 3 provides a map of the IID Imperial Unit boundary, as well as cities, communities and main canals.

Imperial Valley has a subtropical desert climate characterized by hot, dry summers and mild winters. Summer temperatures typically exceed 100 degrees Fahrenheit (°F), while winter low temperatures rarely drop below 32°F. The remainder of the year has a relatively mild climate with temperatures averaging in the mid-70s. For the nineteen (19) years from 1995-2014, average annual air temperature was 72.9°F, and average annual rainfall period was 2.67 inches (Table 3 and Table 4). The majority of rainfall occurs from November through March, along with periodic summer thunderstorms.

IID is located in the Northern Sonoran Desert, which has a subtropical desert climate with hot, dry summers and mostly mild winters. The 100-year average rainfall is 3 inches per year, most of which occurs from November through March. However, summer storms can be significant in some years. Clear and sunny conditions typically prevail, and frost is rare. The region receives 85 to 90 percent of possible sunshine each year, the highest value in the United States. Winter temperatures are mild, but summer temperatures are very hot, with more than 100 days over 100°F each year.[6] Rainfall in the Imperial Valley contributes around 50,000 AF of effective agricultural water per inch of rain.

---

[2] *Imperial County General Plan*, Land Use Element 2008 Update.
[3] USBR website: Yuma Project. 7 June 2017.
[4] PVID website: About Us, Acreage Map. 7 June 2017.
[5] IID Annual Inventory of Areas Receiving Water Years 2016, 2015, 2014
[6] CDWR, CWP Update 2013, Volume 2, Colorado River Hydrologic Region, pp CR32-CR33, modified by IID 2014 record.

Table 3 Climate Characteristics, Imperial, CA 100-Year Record, 1915-2014

Climate Characteristic	Annual Value
Average Precipitation (100-year record, 1915-2014)	3.00 inches (In)
Minimum Temperature, Jan 1937	16 °F
Maximum Temperature, July 1995	121 °F
Average Minimum Temperature, 1915-2014	47.8 °F
Average Maximum Temperature, 1915-2014	98.2 °F
Average Temperature, 1915-2014	72.8 °F

Table 4 IID Areawide Annual Precipitation (IN), 1990-2014

1990	1991	1992	1993	1994	1995	1996
1.646	3.347	4.939	2.784	1.775	1.251	0.685
1997	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
1.328	2.604	1.399	0.612	0.516	0.266	2.402
2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
4.116	4.140	0.410	1.331	1.301	0.619	3.907
2011	**2012**	**2013**	**2014**			
2.261	2.752	2.772	1.103			

Computation based on polygon average of CIMIS and IID data as they came online in the WIS.[7]
Source: IID WIS

Notable from Table 4 (above) and Table 5 (below) is that while average annual rainfall measured at IID Headquarters in Imperial, CA, has been decreasing, monthly average temperatures are remarkably consistent.

[7] From 1/1/1990-3/23/2004, 3 CIMIS stations: Seeley, Calipatria/Mulberry, Meloland. From 3/24/2004-7/5/2009, 4 CIMIS stations: added Westmorland North. From 7/6/2009-12/1/2009, 3 CIMIS stations: Westmorland North offline. From 12/2/2009-2/31/2009, 4 CIMIS stations, Westmorland North back online. From 1/1/2010-9/20/2010, 4 CIMIS & 4 IID stations; and from 9/21/2010-present 4 CIMIS & 3 IID stations: Calexico station was decommissioned, last data is for 09/20/2010.

Table 5 Monthly Mean Temperature (°F) – Imperial, CA, 10-Year, 30-Year & 100-Year (2005-2014, 1995-2014, 1915-2014)

	Jan			Feb			Mar			Apr		
	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
10-year	81	31	56	84	36	59	94	40	66	99	45	71
30-year	80	33	56	84	36	60	92	41	65	100	47	71
100-year	80	31	55	84	35	59	91	40	64	98	45	71
	May			Jun			Jul			Aug		
	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
10-year	107	54	79	113	60	86	115	68	92	114	67	91
30-year	105	54	79	112	60	86	114	68	92	113	69	92
100-year	105	52	78	112	59	86	114	68	92	113	67	91
	Sep			Oct			Nov			Dec		
	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
10-year	107	54	79	84	36	59	94	40	66	99	45	71
30-year	105	54	79	84	36	60	92	41	65	100	47	71
100-year	105	52	78	84	35	59	91	40	64	98	45	71

Source: IID Imperial Headquarters Station Record (Data provided by IID staff).

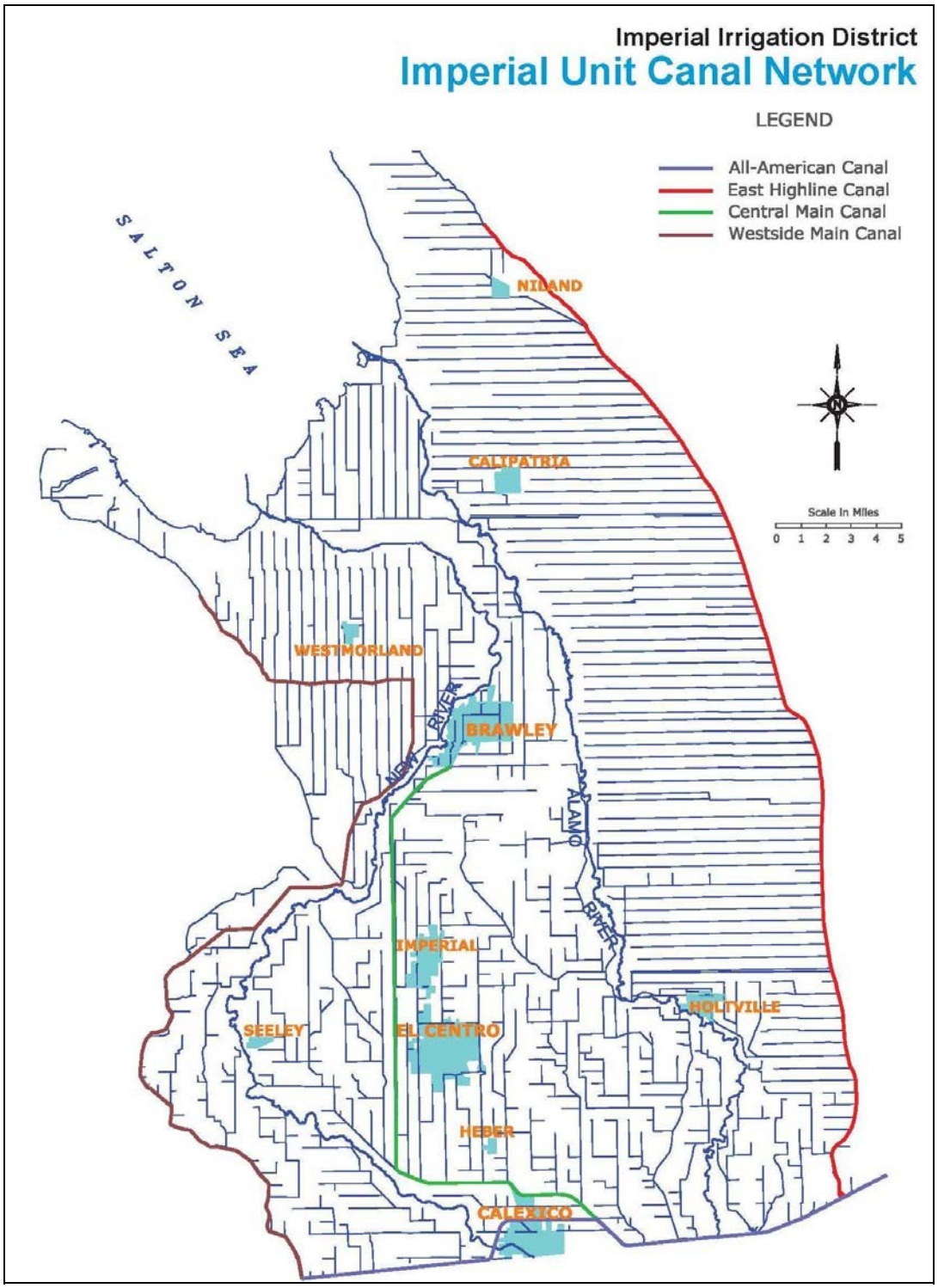
Table 6 - Monthly Mean Rainfall (In) – Imperial, CA 10-Year, 30-Year & 100-Year (2005-2014, 1995-2014, 1915-2014)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
10-yr	0.47	0.36	0.15	0.03	0.00	0.00	0.21	0.38	0.17	0.21	0.24	0.34	2.54
30-yr	0.44	0.44	0.26	0.06	0.04	0.00	0.13	0.23	0.26	0.30	0.23	0.34	2.67
100-yr	0.42	0.38	0.26	0.11	0.02	0.00	0.12	0.35	0.37	0.26	0.21	0.50	3.00

Source: IID WIS: CIMIS stations polygon calculation (Data provided by IID staff).

The Imperial Valley depends on the Colorado River for its water, which IID transports, untreated, to delivery gates for agricultural, municipal, industrial (including geothermal and solar energy), environmental (managed marsh), recreational (lakes), and other non-agricultural uses. IID supplies the cities, communities, institutions and Southern California Water Company (which serves Calipatria, Niland, and Calipatria CDCR) with untreated water that they treat to meet state and federal drinking water guidelines before distribution to their customers. Industries outside the municipal areas treat the water to required standards of their industry. The IID Water Department tracks nearly 4,000 raw water service accounts required by the California Department of Public Health (CDPH) to have alternate drinking water service. The District maintains a small-acreage pipe and drinking water database, and provides an annual compliance update to CDPH.

Figure 3 - IID Imperial Unit Boundary and Canal Network



Imperial County Past and Future Land and Water Uses

Agricultural development in the Imperial Valley began at the turn of the twentieth century. In 2015, gross agricultural production for Imperial County was valued at $1,925,134,000, of which approximately $1,822,354,000 was produced in the IID water service area.[8] While the agriculture-based economy is expected to continue, land use is projected to change somewhat over the years as industrial and/or alternative energy development and urbanization occur in rural areas and in areas adjacent to existing urban centers.

Imperial Valley's economy is gradually diversifying. Agriculture will likely continue to be the primary industry within the valley; however, two principal factors anticipated to reduce crop acreage are renewable energy (geothermal and solar) and urban development. Over the next forty (40) years, urbanization is expected to replace some agricultural land uses to provide space for an increase in residential, commercial, municipal and industrial uses. The transition from agricultural land use typically results in a minor net decrease in water demand for municipal and commercial development, a considerable net decrease in water demand for solar energy development, and a net increase in water demand for geothermal energy development. Local energy resources include geothermal, wind, biomass and solar. The County General Plan provides for development of energy production centers or energy parks within Imperial County.[9] Alternative energy facilities, like the proposed Project, will help California meet its statutory and regulatory goals for increasing renewable power generation and use and decrease water demands in Imperial County.

The IID board has adopted the following policies and programs to address how to accommodate water demands under the terms of the QSA/ Transfers Agreements and minimize potential negative impacts on agricultural water uses as described in detail below:

- Imperial Integrated Regional Water Management Plan adopted by the board on December 18, 2012, and by the County, the City of Imperial, to meet the basic requirement of CDWR for an IRWM plan. In all, 14 local agencies adopted the 2012 Imperial IRWMP.

- Interim Water Supply Policy for Non-Agricultural Projects adopted by the board on September 29, 2009, to ensure sufficient water will be available for new development, in particular much anticipated renewable energy projects until the board selects and implements capital development projects such as those explored in the Imperial IRWMP.

- Temporary Land Conversion Fallowing Policy adopted by the board on May 8, 2012, and revised on March 29, 2016, to provide a framework for a temporary, long-term fallowing program to work in concert with the IWSP and IID's coordinated land use/water supply strategy.

In addition, water users within the IID service area are subject to the statewide requirement

[8] 2015 Imperial County Agricultural Crop & Livestock Report. September 27, 2016.
[9] *Imperial County General Plan*, Geothermal/Alternative and Transmission Element, revised 2006 and 2015.

of reasonable and beneficial use of water under the California Constitution, Article X, section 2.

Imperial Integrated Regional Water Management Plan (October 2012)

The Imperial IRWMP serves as the governing document for regional water planning to meet present and future water resource needs and demands by addressing such issues as additional water supply options, demand management, and determination and prioritization of uses and classes of service provided. In November 2012, the Imperial County Board of Supervisors approved the October 2012 Imperial IRWMP, and the City of Imperial City Council and the IID Board approved it in December 2012. Approval by these three (3) entities meets the basic requirement of CDWR for an IRWMP. Through the IRWMP process, IID presented options in the event long-term water supply augmentation is needed, such as water storage and banking, recycling of municipal wastewater, and desalination of brackish water[10]. As discussed herein, long term water supply augmentation is not anticipated to be necessary to meet Project demands.

Chapter 5 of the 2012 Imperial IRWMP addresses water supplies, demand, baseline and forecasted through 2050, and IID water budget. Chapter 12 addresses projects, programs and policies, and funding alternatives. Chapter 12 of the IRWMP lists, and Appendix N details, a set of capital projects that IID could pursue, including the amount of water that might result (AFY) and cost ($/AF) if necessary. These highlight potential capital improvement projects that could be implemented in the future.

Imperial Valley forecasted future non-agricultural water demands that include municipal, geothermal, industrial, feedlots/dairies and environmental resources, are provided in Table 6 in five-year increments for 2015 through 2060. Total water demand for non-agricultural uses is forecasted to be 211.7 KAF in the year 2060. This is a forecasted increase in the use of non-agricultural water from 103.9 KAF for the period of 2015 to 2060. These values were modified from Chapter 5 of the IRWMP to reflect updated conditions from the IID Provisional Water Balance for calendar year 2015. Due to the recession in 2009 and other factors, non-agricultural growth projections have lessened since the 2012 Imperial IRWMP. Projections were extended to 2060 based on the average incremental increase from 2018-2048 (depending on expected time of completion) to be consistent with the life of the Drew Solar Project

[10] October 2012 *Imperial Integrated Regional Water Management Plan*, Chapter 12.

Table 7 Non-Agricultural Water Delivery Demand within IID Water Service Area, 2015-2055 (KAFY)

	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
Municipal	33.1	35.1	38.1	41.1	42.9	47.9	53.4	59.7	63.8	67.9
Industrial	23.2	33.3	40.0	46.8	53.5	60.3	67.0	73.7	80.5	87.2
Other	5.8	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Feedlots/Dairies	18.1	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Envr Resources	8.2	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Recreational	7.4	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Service Pipes	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Non-Ag Demand	**107.8**	**125.0**	**134.7**	**144.5**	**153.0**	**164.7**	**177.0**	**190.0**	**200.9**	**211.7**

Notes:
2015 Water Balance rerun 03/21/2017
2015 non-agricultural water demands are from IID 2015 Provisional Water Balance, 2020-2060 demands modified from Imperial IRWMP Chapter 5 based on 2015 Water Balance analysis with assistance from IID staff.
Industrial Demand includes geothermal, but not solar, energy production.

Agricultural evapotranspiration (ET) water demand remains around 1.5 million AFY (MAFY) from 2015 to 2060 as shown by Table 8. When accounting for tailwater and tilewater to the Salton Sea, total agricultural water demand and deliveries range from 2.16 MAFY in 2015 to 2.21 MAFY in 2060.

Table 8 - Agricultural Water Use Demand within IID Water Service Area, 2015-2060(KAFY)

	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
Ag ET from Delivered & Stored Soil Water	1,476.7	1,567.5	1,567.5	1,567.5	1,567.5	1,567.5	1,567.5	1,567.5	1,567.5	1,567.5
Ag Tailwater to Salton Sea	278.7	318.0	268.0	218.0	218.0	218.0	218.0	218.0	218.0	218.0
Ag Tilewater to Salton Sea	401.3	423.0	423.0	423.0	423.0	423.0	423.0	423.0	423.0	423.0
Total Agricultural Demand	**2,156.7**	**2,308.5**	**2,258.5**	**2,208.5**	**2,208.5**	**2,208.5**	**2,208.5**	**2,208.5**	**2,208.5**	**2,208.5**

Note:
2015 Water Balance rerun 03/21/2017
2015 record from IID 2015 Provisional Water Balance; projections for 2020-2060 from spreadsheet used to develop Figure 19, et seq. in Imperial IRWMP Chapter (Data provided by IID staff).

In addition to agricultural and non-agricultural water demands, system operation demand must be included to account for operational discharge, main and lateral canal seepage; and for AAC seepage, evaporation and phreatophyte ET from Imperial Dam to IID's measurement site at AAC Mesa Lateral 5. These system operation demands are shown in Table 9.

Table 9 - System Operation Demand, 2015-2060 (KAFY)

	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
System Operation Total	343.9	436.0	411.0	407.0	407.0	407.0	407.0	407.0	407.0	407.0
Source: IID Water Balance (Data provided by IID staff). AAC Seepage, Evap & Phreat ET are estimates based on 2015 data.										

IID Interim Water Supply Policy for Non-Agricultural Projects[11] (September 2009)

The IID IWSP provides a mechanism to address water supply requests for projects being developed within the IID service area. The IWSP designates up to 25,000 acre-feet per year of IID's annual Colorado River water supply for new projects, provides a mechanism and process to develop a water supply agreement for any appropriately permitted project, and establishes a framework and set of fees to ensure the supplies used to meet new demands do not adversely affect existing users by funding water conservation or augmentation projects as needed.

Depending on the nature, complexity and water demands of the proposed project, new projects may be charged a one-time Reservation Fee and an annual Water Supply Development Fee for the contracted water volume used solely to assist in funding new water supply projects. The 2016 fee schedule is shown in Table 10. . The applicability of the fee to certain projects will be determined by IID on a case-by-case basis, depending on the proportion of types of land uses and water demand proposed for a project.

Table 10 - IWSP 2017. Interim Water Supply Policy 2017 Annual Non-Agricultural Water Supply Development Fee Schedule

Annual Demand (AF)	Reservation Fee ($/AF)*	Development Fee ($/AF)*
0-500	$69.92	$279.68
501-1000	$97.45	$393.79
1001-2500	$123.62	$494.47
2501-5000	$152.71	$610.82

*Adjusted annually in accordance with the Consumer Price Index (CPI).

In addition to IWSP fees, IID customers with new projects will also be charged the appropriate water rate based on measured deliveries, see IID Water Rate Schedules. As of October 2016, IID has issued one Water Supply Agreement for 1,200 acre-feet per year, leaving a balance of 23,800 acre-feet per year of supply available for contracting under the IWSP.

IID Temporary Land Conversion Fallowing Policy[12] (May 2012)

Imperial County planning officials determined that renewable energy facilities were consistent with the County's agricultural zoning designation and began issuing conditional use permits for these projects with 10 to 20 year terms. These longer-term, but temporary, land use designations were not conducive to a coordinated land use/water supply policy as envisioned in the Imperial IRWMP, because temporary water supply assignments during a conditional use permit (CUP) term were not sufficient to meet the water supply verification requirements necessary for new project approvals. Agricultural land owners also sought long-term assurances from IID that, at project termination, irrigation service would be available for them to resume their farming operations.

[11] IID website and IWSP are the sources of the text for this section.
<http://www.iid.com/water/municipal-industrial-and-commercial-customers>

[12] IID website: Temporary Land Conversion Fallowing Policy (TLCFP) and TLCFP are the sources of the text for this section.

Based on these conditions, IID determined it had to develop a water supply policy that conformed to the local land use decision-making in order to facilitate new development and economic diversity in Imperial County. IID concluded that certain lower water use projects could still provide benefits to local water users. The resulting benefits, however, may not be to the same categories of use (e.g., MCI) but to the district as a whole.

At the general manager's direction, staff developed a framework for a fallowing program that could be used to supplement the IWSP and meet the multiple policy objectives envisioned for the coordinated land use/water supply strategy. Certain private projects that, if implemented, will temporarily remove land from agricultural production within the district's water service area include renewable solar energy and other non-agricultural projects. Such projects may need a short-term water supply for construction activities and longer-term water service for facility operation and maintenance or for treating to potable water standards. Conserved water will be created to the extent that water use for the project is less than historical water use for the project footprint as determined by the 10-year water use history.[13]

Water demands for certain non-agricultural projects are typically less than that required for agricultural production; this reduced demand allows additional water to be made available for other users under IID's annual consumptive use cap. This allows the district to avail itself of the ability during the term of the QSA/Transfer Agreements under CWC Section 1013 to create conserved water through these projects as temporary land fallowing conservation measures. This conserved water can then be used to satisfy the district's conserved water transfer obligation and for environmental mitigation purposes.

Under the terms of the legislation adopted to facilitate the QSA/Transfer Agreements and enacted in CWC Section 1013, the TLCFP was adopted by the IID board on May 8, 2012 and revised on March 29, 2016 to update the fee schedule for 2016. This policy provides a framework for a temporary, long-term fallowing program to work in concert with the IWSP. While conserved water generated from the TLCFP is limited by law for use for water transfer or environmental purposes, by satisfying multiple district objectives the TLCFP serves to reduce efficiency conservation and water use reduction demands on IID water users, thus providing districtwide benefits.

[13] For details of how water conservation yield attributable to land removed from agricultural production and temporarily fallowed is computed, see TLCFP for Water Conservation Yield.

IID Water Rights

As noted above, IID and its customers are dependent on Colorado River water. The following section summarizes the laws and regulations that influence IID's water supply and demand. The Law of the River (as described below), along with the 2003 Quantification Settlement Agreement and Related Agreements serve as the laws, regulations, and agreements that primarily influence the findings of this WSA. These agreements state that California has the most senior water rights along the Colorado River and that IID specifically has access to 3.1 MAF per year (the largest allocation on the Colorado River). These two components will influence future decisions in terms of water supply during periods of shortages.

California Law

IID's has a longstanding right to divert Colorado River water, and IID holds legal titles to all of its water and water rights in trust for landowners within the district (Water Code §§ 20529, 22437; *Bryant v. Yellen*, 447 U.S. 352, 371 (1980), fn. 23..) Beginning in 1885, a number of individuals, as well as the California Development Company, made a series of appropriations of Colorado River water under California law for use in the Imperial Valley. The rights to these appropriations were among the properties acquired by IID from the California Development Company.

Law of the River

Colorado River water rights are governed by numerous compacts, state and federal laws, court decisions and decrees, contracts, and regulatory guidelines collectively known as the "Law of the River." Together, these documents form the basis for allocation of the water, regulation of land use, and management of the Colorado River water supply among the seven Basin States and Mexico.

Of all regulatory literature that governs Colorado River water rights, the following are the specifics that impact IID:

- Colorado River Compact (1922)
- Boulder Canyon Project Act (1928)
- California Seven-Party Agreement (1931)
- *Arizona v. California* US Supreme Court Decision (1964, 1979)
- Colorado River Basin Project Act (1968)
- Quantification Settlement Agreement and Related Agreements (2003)
- 2003 Colorado River Water Delivery Agreement: Federal QSA for purposes of Section 5(b) Interim Surplus Guidelines (CRWDA)
- 1970 Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs Annual Operating Plan (AOP) for Colorado River Reservoirs
- 2007 Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lakes Powell and Mead (2007 Interim Guidelines)

Colorado River Compact (1922)

With authorization of their legislatures and urging of the federal government, representatives from the seven Colorado River Basin States began negotiations regarding distribution of water from the Colorado River in 1921. In November 1922, an interstate agreement called the "Colorado River Compact" (Compact) was signed by the representatives giving the Lower Basin (Arizona, California and Nevada) perpetual rights to annual apportionments of 7.5 million acre-feet (MAF) of Colorado River water (75 MAF over ten [10] years). The Upper Basin (Wyoming, New Mexico, Colorado and Utah) was to receive the remainder, which based on the available hydrological record was also expected to be 7.5 MAF annually, with enough left over to provide 1.5 MAF annually to Mexico.

Boulder Canyon Project Act (1928)

Provisions in the 1928 Boulder Canyon Project Act made the compact effective and authorized construction of Hoover Dam and the AAC, and served as the United States' consent to accept the Compact. Through a Presidential Proclamation on June 25, 1929, this act resulted in ratification of the Compact by six (6) of the basin states and required California to limit its annual consumptive use to 4.4 MAF of the lower basin's apportionment plus not less than half of any excess or surplus water un-apportioned by the Compact. A lawsuit was filed by the State of Arizona after its refusal to sign. Through the implementation of its 1929 Limitation Act, California abided by this federal mandate. The Boulder Canyon Act authorized the Secretary of the Interior (Secretary) to "contract for the storage of water… and for the delivery thereof… for irrigation and domestic uses," and additionally defined the Lower Basin's 7.5 MAF apportionment split, with an annual allocation 0.3 MAF to Nevada, 2.8 MAF to Arizona, and 4.4 MAF to California. Although the three (3) states never formally settled or agreed to these terms, a 1964 Supreme Court decision (*Arizona v. California*, 373 U.S. 546) declared the three (3) states' consent to be insignificant since the Boulder Canyon Project Act was authorized by the Secretary.

California Seven-Party-Agreement (1931)

Following implementation of the Boulder Canyon Project Act, the Secretary requested that California make recommendations regarding distribution of its apportionment of Colorado River water. In August 1931, under chairmanship of the State Engineer, the California Seven-Party Agreement was developed and authorized by the affected parties to prioritize California water rights. The Secretary accepted this agreement and established these priorities through General Regulations issued in September of 1931. The first four (4) priority allocations account for California's annual apportionment of 4.4 MAF, with agricultural entities using 3.85 MAF of that total. Additional priorities are defined for years in which the Secretary declares that excess waters are available.

Arizona v. California U.S. Supreme Court Decision (1964, 1979)

The 1964 Supreme Court decision settled a 25-year disagreement between Arizona and California that stemmed from Arizona's desire to build the Central Arizona Project (CAP) to enable use of its full apportionment. California's argument was that as Arizona used water from the Gila River, which is a Colorado River tributary, it was using a portion of its annual Colorado River apportionment. An additional argument from California was that it had developed a historical use of some of Arizona's apportionment, which, under the doctrine of prior appropriation, precluded Arizona from developing the project. California's

arguments were rejected by the United States Supreme Court. Under direction of the Supreme Court, the Secretary was restricted from delivering water outside of the framework of apportionments defined by law. Preparation of annual reports documenting consumptive use of water in the three Lower Basin states was also mandated by the Supreme Court. In 1979, present perfected water rights (PPRs) referred to in the Compact and in the Boulder Canyon Project Act were addressed by the Supreme Court in the form of a Supplemental Decree.

In March of 2006, a Consolidated Decree was issued by the Supreme Court to provide a single reference to the conditions of the original 1964 decrees and several additional decrees in 1966, 1979, 1984 and 2000 that stemmed from the original ruling. The Consolidated Decree also reflects the settlements of the federal reserved water rights claim for the Fort Yuma Indian Reservation.

Colorado River Basin Project Act (1968)

In 1968, various water development projects in both the Upper and Lower Basins, including the CAP were authorized by Congress. Under the Colorado River Basin Project Act, priority was given to California's apportionment over (before) the CAP water supply in times of shortage. Also under the act, the Secretary was directed to prepare long-range criteria for the Colorado River reservoir system in consultation with the Colorado River Basin States.

Quantification Settlement Agreement and Related Agreements (2003)

With completion of a large portion of the CAP infrastructure in 1994, creation of the Arizona Water Banking Authority in 1995, and the growth of Las Vegas in the 1990s, California encountered increasing pressure to live within its rights under the Law of the River. After years of negotiating among Compact states and affected California water delivery agencies, a Quantification Settlement Agreement and Related Agreements and documents were signed on October 10, 2003, by the Secretary of Interior, IID, Coachella Valley Water District (CVWD), Metropolitan Water District of Southern California (MWD), San Diego County Water Authority (SDCWA), and other affected parties.

The Quantification Settlement Agreement and Related Agreements (QSA/Transfer Agreements) are a set of interrelated contracts that resolve certain disputes among the United States, the State of California, IID, MWD, CVWD and SDCWA, for a period of 35 to 75 years, regarding the reasonable and beneficial use of Colorado River water; the ability to conserve, transfer and acquire conserved Colorado River water; the quantification and priority of Priorities 3(a) and 6(a)[14] within California for use of Colorado River water; and the obligation to implement and fund environmental impact mitigation.

Conserved water transfer agreements between IID and SDCWA, IID and CVWD, and IID and MWD are all part of the QSA/Transfer Agreements. For IID, these contracts identify conserved water volumes and establish transfer schedules along with price and payment

[14] Priorities 1, 2, 3(b), 6(b), and 7 of current Section 5 Contracts for the delivery of Colorado River water in the State of California and Indian and miscellaneous Present Perfected Rights within the State of California and other existing surplus water contracts are not affected by the QSA Agreement.

terms. As specified in the agreements, IID will transfer nearly 415,000 AFY over a 35-year period (or longer), as follows:

- MWD 110,000 AFY [modified to 105,000 AFY in 2007],
- SDCWA 200,000 AFY,
- CVWD and MWD combined 103,000 AFY, and
- San Luis Rey Indian Tribes 11,500 AFY of water.

All of the conserved water will ultimately come from IID system efficiency and on-farm efficiency conservation improvements. In the interim, IID has implemented a fallowing program to generate water associated with Salton Sea mitigation related to the impacts of the IID/SDCWA water transfer (Fallowing Program), as required by the State Water Resources Control Board, which is to run from 2003 through 2017. In return for its QSA/Transfer Agreements programs and deliveries, IID will receive payments totaling billions of dollars to fund needed efficiency conservation measures and to pay growers for conserved on-farm water, so IID can transfer water without impacting local productivity. In addition, IID will transfer 67,700 AFY annually to SDCWA of water conserved from the lining of the AAC in exchange for payment of lining project costs and a grant to IID of certain rights to use the conserved water. In addition to the 105,000 acre-feet of water currently being conserved under the 1988 IID/MWD Conservation Program, these more recent agreements define an additional 303,000 acre feet per year to be conserved by IID from on-farm and distribution system conservation projects for transferred to SDCWA, CVWD, and MWD.

Colorado River Water Delivery Agreement (2003)[15]

As part of QSA/Transfer Agreements among California and federal agencies, the Colorado River Water Delivery Agreement: Federal QSA for purposes of Section 5(b) Interim Surplus Guidelines (CRWDA) was entered into by the Secretary, IID, CVWD, MWD and SDCWA. This agreement involves the federal government because of the change in place of diversion from Imperial Dam into the AAC to Parker Dam into MWD's Colorado River Aqueduct.

The CRWDA assists California to meet its "4.4 Plan" goals by quantifying deliveries for a specific number of years for certain Colorado River entitlements so transfers may occur. In particular, for the term of the CRWDA, quantification of Priority 3(a) was effected through caps on water deliveries to IID (consumptive use of 3.1 MAF per year) and CVWD (consumptive use of 330 thousand AF [KAF] per year). In addition, California's Priority 3(a) apportionment between IID and CVWD, with provisions for transfer of supplies involving IID, CVWD, MWD and SDCWA are quantified in the CRWDA for a period of 35 years or 45 years (assumes SDCWA does not terminate in year 35) or 75 years (assumes SDCWA and IID mutually consent to renewal term of 30 years).

Allocations for consumptive use of Colorado River water by IID, CVWD and MWD that will enable California to stay within its basic annual apportionment (4.4 MAF plus not

[15] CRWDA: Federal QSA. 7 June 2017.

less than half of any declared surplus) are defined by the terms of the QSA/Transfer Agreements (Table 11). As specified in the CRWDA, by 2026, IID annual use within its water service area (Imperial Valley) is to be reduced to just over 2.6 MAF of its 3.1 MAF quantified annual apportionment. The remaining nearly 500,000 AF (which includes the 67,000 AF from AAC lining) are to be transferred annually to urban water users outside of the Imperial Valley.

Table 11 QSA Colorado River Use – Annual 4.4 MAF Apportionment Cap (Priorities 1 to 4) for California Agencies (Excluding Transfers and Exchanges)

User	Apportionment (AFY)
Palo Verde Irrigation District and Yuma Project*	420,000
Imperial Irrigation District	3,100,000
Coachella Valley Water District	330,000
Metropolitan Water District of Southern California*	550,000
Total:	**4,400,000**

* PVID and Yuma Project did not agree to a cap; value represents a contractual obligation by MWD to assume responsibility for any overages or be credited with any volume below this value.
Notes: All values are consumptive use at point of Colorado River diversion: Palo Verde Diversion Dam (PVID), Imperial Dam (IID and CVWD), and Parker Dam (MWD).
Source: IID 2009 Annual Water Report, p 15.

Quantification of Priority 6(a) was effected through quantifying annual consumptive use amounts to be made available in order of priority to MWD (38 KAF), IID (63 KAF), and CVWD (119 KAF) with the provision that any additional water available to Priority 6(a) be delivered under IID's and CVWD's existing water delivery contract with the Secretary.[16] The CRWDA provides that the underlying water delivery contract with the Secretary remain in full force and effect (*Colorado River Documents 2008*, Chapter 6, pages 6-12 and 6-13). The CRWDA also provides a source of water to affect a San Luis Rey Indian Water rights settlement. Additionally, the CRWDA satisfies the requirement of the 2001 Interim Surplus Guidelines (ISG) that a QSA be adopted as a prerequisite to the interim surplus determination by the Secretary in the ISG.

Inadvertent Overrun Payback Policy (2003)

The Inadvertent Overrun Payback Policy (IOPP), adopted by the Secretary contemporaneously with the execution of the CRWDA, provides additional flexibility to Colorado River management and applies to entitlement holders in the Lower Division States (Arizona, California and Nevada).[17] The IOPP defines inadvertent overruns as "Colorado River water diverted, pumped, or received by an entitlement holder of the Lower Division States that is in excess of the water users' entitlement for the year." An entitlement holder

[16] When water levels in the Colorado River reservoirs are low, Priority 5, 6 and 7 apportionments are not available for diversion.

[17] USBR. *2003 CRWDA ROD Implementation Agreement, IOPP, and Related Federal Actions Final EIS.* Section IX. Implementing the Decision A. Inadvertent Overrun and Payback Policy. Pages 16-19 of 34.

is allowed a maximum overrun of ten percent (10%) of its Colorado River water entitlement.

In the event of an overrun, the IOPP provides a mechanism to payback the overrun. When the Secretary has declared a normal year for Colorado River diversions, a contractor has from one to three years to pay back its obligation, with a minimum annual payback equal to twenty percent (20%) of the entitlement holder's maximum allowable cumulative overrun account or 33.3 percent of the total account balance, whichever is greater. However, when Lake Mead is below 1,125 feet on January 1, the terms of the IOPP require that the payment of the inadvertent overrun obligation be made in the calendar year after the overrun is reported in the United States Bureau of Reclamation (USBR) Lower Colorado Region Colorado River Accounting and Water Use Report for Arizona, California, and Nevada (Decree Accounting Report).[18].

1970 Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs

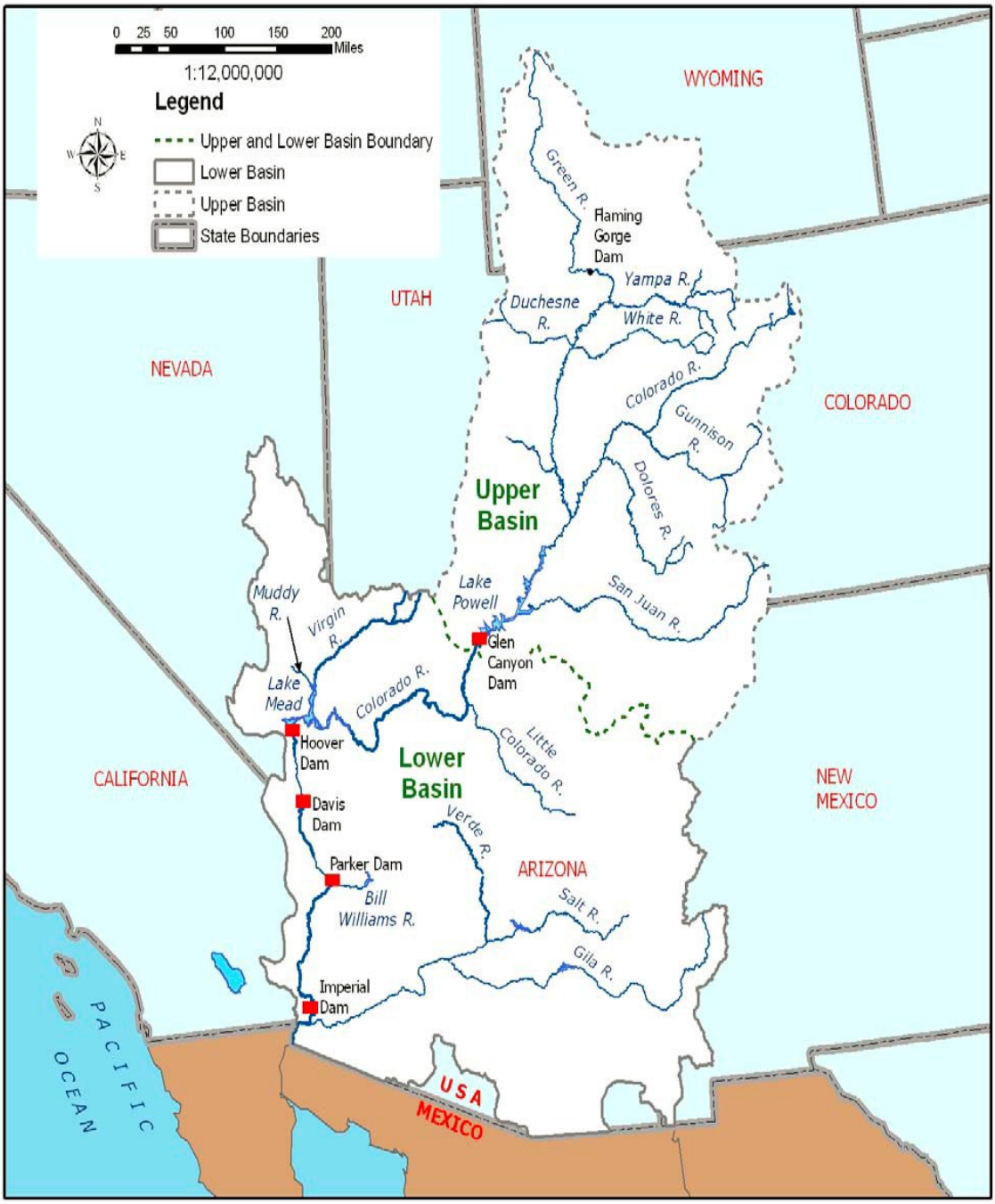
The 1970 Operating Criteria control operation of the Colorado River reservoirs in compliance with requirements set forth in the Colorado River Compact of 1922, the United States-Mexico Water Treaty of 1944, the Colorado River Storage Project Act of 1956, the Boulder Canyon Projects Act (Lake Mead) and the Colorado River Basin Project Act (Upper Basin Reservoirs) of 1968, and other applicable federal laws. Under these Operating Criteria, the Secretary makes annual determinations published in the USBR Annual Operating Plan for Colorado River Reservoirs (discussed below) regarding the release of Colorado River water for deliveries to the Lower Basin states. A requirement to equalize active storage between Lake Powell and Lake Mead when there is sufficient storage in the Upper Basin is included in these operating criteria. Figure 4 identifies the major storage facilities and the Upper Basin and Lower Basin boundaries.

Annual Operating Plan for Colorado River Reservoirs

The Annual Operating Plan (AOP) is developed in accordance with Section 602 of the Colorado River Basin Project Act (Public Law 90-537); the Criteria for Coordinated Long-Range Operations of Colorado River Reservoirs pursuant to the Colorado River Basin Project Act of 1968, as amended, promulgated by the Secretary; and Section 1804(c)(3) of the Grand Canyon Protection Act (Public Law 102-575). As part of the AOP process, the Secretary makes determinations regarding the availability of Colorado River water for deliveries to the Lower Basin states, including whether normal, surplus, and shortage conditions are in effect on the lower portion of the Colorado River.

[18] 2003 CRWDA ROD. Section IX. A.6.c,, page 18 of 34.

Figure 4 - *Major Colorado River Reservoir Storage Facilities and Basin Location Map*



Source: Final EIS – Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead, Volume 1 Chapter 1 Purpose and Need, p I-10..

2007 Colorado River Interim Guidelines for Lower Basin Shortages (2007 Interim Guidelines)

A multi-year drought in the Upper Colorado River basin that began in October 1999 was the trigger for the Interim Shortage Guidelines. In the summer of 1999, Lake Powell was essentially full with reservoir storage at 97 percent of capacity. However, precipitation fell off starting in October 1999 and 2002 inflow was the lowest recorded since Lake Powell began filling in 1963.[19, 20] By August 2011, inflow was 279 percent of average; however, drought resumed in 2012 and has continued through water year 2014. Using the record in Table 12, average unregulated inflow to Lake Powell for water years 2000-2014 is 71 percent; or if 2011 is excluded, 66 percent of the historic average.

Table 12 - Unregulated Inflow to Lake Powell, Percent of Historic Average, 2000-2015

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
62%	59%	25%	51%	49%	105%	73%	68%	102%	88%	73%	136%	35%	49%	90%	83%

Sources:
Drought in the Upper Colorado River Basin (2000-2010), and UCR Water Operations: Historic Data (2011-2016)

The four key elements of the ISG Preferred Alternative, which will guide operations of Lake Powell and Lake Mead through 2026 are:

- Establish rules for shortages: Define discrete elevations associated with Lake Mead shortage volumes to provide water users and managers in the Lower Basin with greater certainty to know when, and by how much, water deliveries will be reduced during low reservoir conditions.
- Establish coordinated operation of Lake Powell and Lake Mead: Fully coordinate operation of the reservoirs to minimize shortages in the Lower Basin and to avoid risk of curtailments of water use in the Upper Basin thereby better sharing the risks associated with drought.
- Establish rules for storage and delivery of conserved water in Lake Mead: Intentionally Created Surplus mechanism provides for creation, accounting, and delivery of conserved system and non-system water thereby promoting water conservation in the Lower Basin. Credits for water conserved by Lower Basin State users that result in an ICS are available for release from Lake Mead at a later time. Total credits are set at 2.1 MAF, but could increase to 4.2 MAF.
- Address drought impacts by encouraging water conservation: Modify and extend the ISG (66 Fed. Reg. 7772, Jan 25, 2001) through 2026 and modify elements to eliminate the most liberal surplus conditions thus leaving more water in storage to reduce the severity of future shortages.

A significant mandatory provision of this agreement is that the Basin States will address future

[19] Water Year: October 1 through September 30 of following year, so year ending September 30, 1999, is the 1999 water year.
[20] Drought in the Upper Colorado River Basin. August 2011.

Colorado River controversies through consultation and negotiation before resorting to litigation.[21] IID is able to store some amount of Intentionally Created Surplus water in Lake Mead under these provisions.

In the midst of the drought period, USBR developed 2007 Interim Guidelines with consensus from the seven basin states, which selected the Draft EIS Preferred Alternative as the basis for USBR's final determination. The basin states found the Preferred Alternative best met all aspects of the purpose and need for the federal action.[22]

The 2007 Interim Guidelines Preferred Alternative highlights the following:

1. The need for the Interim Guidelines to remain in place for an extended period of time.
2. The desirability of the Preferred Alternative based on the facilitated consensus recommendation from the basin states.
3. The likely durability of the mechanisms adopted in the Preferred Alternative in light of the extraordinary efforts that the basin states and water users have undertaken to develop implementing agreements that will facilitate the water management tools (shortage sharing, forbearance, and conservation efforts) identified in the Preferred Alternative.
4. That the range of elements in the Preferred Alternative will enhance the Secretary's ability to manage the Colorado River reservoirs in a manner that recognizes the inherent tradeoffs between water delivery and water storage.

In June 2007, USBR announced that a preferred alternative for Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations of Lake Powell and Lake Mead (Final Preferred Alternative) had been determined. The Final Preferred Alternative, based on the Basin States' consensus alternative and an alternative submitted by the environmental interests called "Conservation Before Shortage," is comprised of four key operational elements which are to guide operations of Lake Powell and Lake Mead through 2026 are:

1. Shortage strategy for Lake Mead and Lower Division states: The Preferred Alternative proposed discrete levels of shortage volumes associated with Lake Mead elevations to conserve reservoir storage and provide water users and managers in the Lower Basin with greater certainty to know when, and by how much, water deliveries will be reduced during low reservoir conditions.
2. Coordinated operations of Lake Powell and Lake Mead: The Preferred Alternative proposed a fully coordinated operation of the reservoirs to minimize shortages in the Lower Basin and to avoid risk of curtailments of water use in the Upper Basin.

[21] Final EIS: Record of Decision Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lakes Powell and Mead. December 2007.

[22] USBR website: Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead,

3. Mechanism for storage and delivery of conserved water in Lake Mead: The Preferred Alternative proposed the Intentionally Created Surplus (ICS) mechanism to provide for the creation, accounting, and delivery of conserved system and non-system water thereby promoting water conservation in the Lower Basin. Credits for Colorado River or non-Colorado River water that has been conserved by users in the Lower Basin creating an ICS would be made available for release from Lake Mead at a later time. The total amount of credits would be 2.1 MAF, but this amount could be increased up to 4.2 MAF in future years.
4. Modifying and extending elements of the ISG: The ISG determines conditions under which surplus water is made available for use within the Lower Division states. These modifications eliminate the most liberal surplus conditions thereby leaving more water in storage to reduce the severity of future shortages.

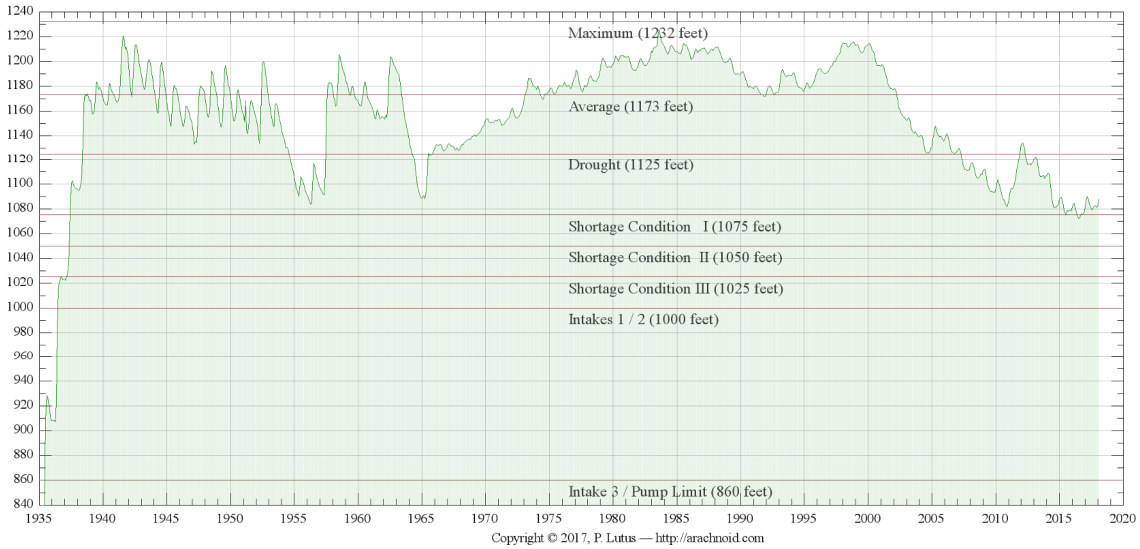
With respect to the various interests, positions and views of each of the seven basin states, this provision adds an important element to the evolution of the legal framework for the prudent management of the Colorado River. Furthermore, the coordinated operation element allows for adjustment of Lake Powell releases to respond to low reservoir storage conditions in either Lake Powell or Lake Mead[23].

Lower Colorado Region Water Shortage Operations

The drought in the Colorado River watershed has continued through 2017 despite an increase in observed runoff in August 2011 when unregulated inflow to Lake Powell was 279 percent of the average (**Figure 5**). Since 2000, Lake Mead has been below the "average" level of lake elevations. Such conditions have caused the preparation of shortage plans for waters users in Arizona and Nevada, and in Mexico.

[23] For a discussion of the 2007 Interim Guidelines, see: Intermountain West Climate Summary by The Western Water Assessment, issued Jan. 21, 2008, Vol. 5, Issue 1, *January 2009 Climate Summary*, Feature Article, pages 5-7, 8 June 2017 .

Figure 5 - Lake Mead Water Elevation Levels



For graph of latest elevations visit <http://www.arachnoid.com/NaturalResources/index.html>

According to guidelines put in place in 2007, Arizona and Nevada begin to take shortages when the water elevation in Lake Mead falls below 1,075 feet. The volumes of shortages increase as water levels fall to 1,050 feet and again at 1,025 feet. In 2012, Mexico agreed to participate in a 5-year pilot agreement to share specific volumes of shortages at the same elevations. The 2007 interim shortage guidelines contain no reductions for California, which has senior water rights to the Central Arizona Project water supply, through 2025 when the guidelines expire. If Lake Mead's elevation drops to 1,025 feet, a re-consultation process would be triggered among the basin states to address next steps. Consultation would start out within each state, then move to the three lower basin states, followed by all seven states and the USBR. Mexico will then be brought into the process unless they choose to participate earlier.

IID Water Supply – Normal Year, Single Dry and Multiple Dry Years

SB 610 requires an analysis of a normal, single dry, and multiple dry water years to show that adequate water is available for the proposed Project in various climate scenarios. Water availability for this Project in a normal year is no different from water availability during a single-dry and multiple-dry year scenarios. This is due to the small effect rainfall has on water supply in IID's arid environment along with IID's strong entitlements to the Colorado River water supply. Local rainfall does have a slight impact on how much water is consumed (i.e. if rain falls on agricultural lands, those lands will not demand as much irrigation), but does not impact the definition of a normal year, a single-dry year or a multiple-dry year scenario in this region for this supplier.

IID Water Supply – Normal Year

IID is entitled to annual consumptive use of 3.1 million acre-feet of Colorado River, less its QSA transfer obligations. Imperial Dam, located north of Yuma, Arizona, serves as a diversion structure for water deliveries throughout southeastern California, Arizona and Mexico. Water is transported to the IID water service area through the All-American Canal for use throughout the Imperial Valley.

IID historical and forecast net consumptive use volumes at Imperial Dam from CRWDA Exhibit B are shown in Table 13. Volumes for years 2003-2015 are adjusted for USBR Decree Accounting historical records. Volumes for years 2016-2077 are from the CRWDA Exhibit B modified to reflect changes to the 1988 IID/MWD Transfer the 2014 Letter of Agreement[24] changes to the 1988 IID/MWD Water Conservation Agreement.

Due to limits on annual consumptive use of Colorado River water under the QSA/Transfer Agreements, IID's water supply during a normal year is best represented by the CRWDA Exhibit B Net Available for Consumptive Use (Table 13, Column 11). That annual volume is the IID Priority 3(a) Quantified Amount of 3.1 million acre-feet (MAF) (Table 13, Column 2) less the IID transfer program reductions for each year (Table 13, Columns 3-9). These volumes represent the supply available to IID at Imperial Dam.

The CRWDA Exhibit B Net Available for Consumptive Use volumes less system operation demand represent the amount of water available for delivery by IID Water Department to its customers each year. In a normal year, perhaps 150,000 AF of effective rainfall would fall in the IID water service area. However, rainfall is not evenly distributed throughout the IID water service area and is not taken into account by IID in the submittal of its Estimate of Diversion (annual water order) to the USBR.

[24] Letter Agreement for Substitution and Conservation Modifications to the IID/MWD Water Conservation Agreement - December 18, 2014 http://www.iid.com/home/showdocument?id=9951

Table 13 - IID Historic and Forecast Net Consumptive Use for Normal Year, Single-Dry Year and Multiple-Dry Year Water Supply, 2003-2037, et seq. (CRWDA Exhibit B)

IID Quantification and Transfers, Volumes in KAF at Imperial Dam [1]										
Col 1	2	3	4	5	6	7	8	9	10	11
	IID Priority 3(a)									
		IID Reductions								IID Net Available for Consumptive Use (Col 2 - 10)
Year	IID 3(a) Quantified Amount	1988 MWD Transfer [2]	SDCWA Transfer	AAC Lining	Salton Sea Mitigation SDCWA Transfer [3]	Intra-Priority 3 CVWD Transfer	MWD Transfer w\ Salton Sea Restoration [4]	Misc. PPRs	IID Total Reduction (Σ Cols 3-9) [5]	
2003	3,100	105.1	10.0	0.0	0.0	0.0	0.0	11.5	126.6	2978.2
2004	3,100	101.9	20.0	0.0	15.0	0.0	0.0	11.5	148.4	2743.9
2005	3,100	101.9	30.0	0.0	15.0	0.0	0.0	11.5	158.4	2756.8
2006	3,100	101.2	40.0	0.0	20.0	0.0	0.0	11.5	172.7	2909.7
2007	3,100	105.0	50.0	0.0	25.0	0.0	0.0	11.5	191.5	2872.8
2008	3,100	105.0	50.0	8.9	26.0	4.0	0.0	11.5	205.4	2825.1
2009	3,100	105.0	60.0	65.5	30.2	8.0	0.0	11.5	280.2	2566.7
2010	3,100	105.0	70.0	67.7	33.7	12.0	0.0	11.5	299.9	2545.6
2011	3,100	103.9	63.3	67.7	0.0	16.0	0.0	11.5	246.4	2915.8
2012	3,100	104.1	106.7	67.7	15.2	21.0	0.0	11.5	326.2	2,903.2
2013	3,100	105.0	100.0	67.7	71.4	26.0	0.0	11.5	381.6	2,554.8
2014	3,100	104.1	100.0	67.7	89.2	31.0	0.0	11.5	403.5	2,533.4
2015	3,100	107.82	100.0	67.7	153.3	36.0	0.0	11.5	476.32	2,480.9
2016	3,100	105	100	67.7	130	41	100	11.5	555.2	2,544.8
2017	3,100	105	100	67.7	150	45	91	11.5	570.2	2,529.8
2018	3,100	105	130	67.7	0	63	0	11.5	377.2	2,722.8
2019	3,100	105	160	67.7	0	68	0	11.5	412.2	2,687.8
2020	3,100	105	193	67.7	0	73	0	11.5	450.2	2,649.8
2021	3,100	105	205	67.7	0	78	0	11.5	467.2	2,632.8
2022	3,100	105	203	67.7	0	83	0	11.5	470.2	2,629.8
2023	3,100	105	200	67.7	0	88	0	11.5	472.2	2,627.8
2024	3,100	105	200	67.7	0	93	0	11.5	477.2	2,622.8
2025	3,100	105	200	67.7	0	98	0	11.5	482.2	2,617.8
2026	3,100	105	200	67.7	0	103	0	11.5	487.2	2,612.8
2027	3,100	105	200	67.7	0	103	0	11.5	487.2	2,612.8
2028	3,100	105	200	67.7	0	103	0	11.5	487.2	2,612.8
'29-37	3,100	105	200	67.7	0	103	0	11.5	487.2	2,612.8
'38-47 [6]	3,100	105	200	67.7	0	103	0	11.5	487.2	2,612.8
'48-77 [7]	3,100	105	200	67.7	0	50 [8]	0	11.5	434.2	2,665.8

Source: CRWDA: Federal QSA Exhibit B, p 13.

Note: Shaded columns represent volumes of water that may vary.

1. 2003 through 2015, volumes are adjusted for actual USBR Decree Accounting values; IID Total Reduction and Net Available for Consumptive Use may not equal Col 2 minus Col 10, if IID use was not included in Exhibit B.
2. 2014 Letter of Agreement provides that, effective January 2016 total amount of conserved water available is 105 KAFY; 2015 total amount of conserved water that will be available is 107,820 AF.
3. Salton Sea Mitigation volumes may vary based on conservation volumes and method of conservation.
4. *This transfer is not likely given lack of progress on Salton Sea restoration as of 2016.*
5. Reductions include conservation for 1988 IID/MWD Transfer, IID/SDCWA Transfer, AAC Lining; SDCWA Transfer Mitigation, MWD Transfer w/Salton Sea Restoration (if any), and Misc. PPRs. Amounts are independent of increases and reductions as allowed under the IOPP.
6. Assumes SDCWA does not elect termination in year 35.
7. Assumes SDCWA and IID mutually consent to renewal term of 30 years.
8. Modified from 100 KAFY in CRWDA Exhibit B; stating in 2018 MWD will provide CVWD 50 KAFY of the 100 KAFY.

IID Water Supply – Single Dry and Multiple Dry Years

When drought conditions exist within the IID water service area, as has been the case for the past decade or so, the water supply available to meet agricultural and non-agricultural water demands remains the same as normal year water supply because IID continues to rely on its entitlement for Colorado River water. Due to the priority of their water rights and other agreements, drought affecting Colorado River water supplies causes shortages for Arizona, Nevada and Mexico, not California or IID. Accordingly, the Net Available for Consumptive Use volumes in Table 13, Column 11 represent the water supply at Imperial Dam available for diversion by IID in a single-dry year and multiple-dry year scenarios.

Under CRWDA Inadvertent Overrun Payback Policy (IOPP), IID has some flexibility to manage its water use. When the water level in Lake Mead is above 1,125 feet, an overrun of its USBR approved annual water order is permissible and IID has up to three years to pay water use above the annual water order. When Lake Mead's water level is at or below 1,125 feet or less on January 1 in the calendar year after the overrun is reported in the USBR Lower Colorado Region Colorado River Accounting and Water Use Report for Arizona, California, and Nevada (Decree Accounting Report), the IOPP prohibits additional overruns and requires that outstanding overruns are to be paid back in the subsequent calendar year rather than in three years as allowed under normal conditions; that is, in in the calendar year following publication of the overrun in the Decree Accounting report.

For historical IID annual rainfall, net consumptive use, transfers and IID underrun/overrun amounts, see Table 14. Note that the district has not had an annual overrun since calendar year 2012.

Table 14 IID Annual Rainfall, Net Consumptive Use and Underrun/Overrun Amounts, 1988-2015

Year	IID Total Annual Rainfall	IID Net Consumptive Use	IID/MWD Transfer	IID/ SDCWA Transfer	SDCWA Transfer Salton Sea Mitigation	IID Underrun /Overrun	IID/CVWD Transfer	AAC Lining
1988		2,947,581						
1989		3,009,451						
1990	91,104	3,054,188	6,110					
1991	192,671	2,898,963	26,700					
1992	375,955	2,575,659	33,929					
1993	288,081	2,772,148	54,830					
1994	137,226	3,048,076	72,870					
1995	159,189	3,070,582	74,570					
1996	78,507	3,159,609	90,880					
1997	64,407	3,158,486	97,740					
1998	100,092	3,101,548	107,160					
1999	67,854	3,088,980	108,500					
2000	29,642	3,112,770	109,460					
2001	12,850	3,089,911	106,880					
2002	12,850	3,152,984	104,940					
2003	116,232	2,978,223	105,130	10,000	0	6,555		
2004	199,358	2,743,909	101,900	20,000	15,000	166,408		
2005	202,983	2,756,846	101,940	30,000	15,000	159,881		
2006	19,893	2,909,680	101,160	40,000	20,000	8,957		
2007	64,580	2,872,754	105,000	50,000	25,021	6,358		
2008	63,124	2,825,116	105,000	50,000	26,085	47,999	4,000	8,898
2009	30,0354	2,566,713	105,000	60,000	30,158	237,767	8,000	65,577
2010	189,566	2,545,593	105,000	70,000	33,736	207,925	12,000	67,700
2011	109,703	2,915,784	103,940	63,278	0	82,662	16,000	67,700
2012	133,526	2,903,216	104,140	106,722	15,182	134,076	21,000	67,700
2013	134,497	2,554,845	105,000	100,000	71,398	65,451	26,000	67,700
2014	53,517	2,533,414	104,100	100,000	89,168	797	31,000	67,700
2015	97.039	2,480,933	107,820	100,000	153,327	0	36,000	67,700

Notes: Volumes in acre-feet and except Total Annual Rainfall, are USBR Decree Accounting Report record at Imperial Dam
Not all IID QSA programs are shown on this table
IID Total Annual Rainfall from IID Water Balance, first available calculations are for 1990
Source: USBR Decree Accounting reports, except IID Total Rainfall and IID Overrun/Underrun is a separate calculation

Project Water Supply Sources

Water for the Project will be needed on-site during commissioning/construction, operation and decommissioning/restoration for potable, non-potable and facility maintenance needs. Untreated Colorado River water will be supplied to the project via the adjacent delivery gates noted in Table 1. Potable water will be obtained for the duration of the Project from a state-approved provider[25] and will be trucked to the site. The Project will utilize and be charged the Schedule 7. General Industrial Service water rates and may also be designated under the IWSP as summarized below. No groundwater will be utilized due to the poor groundwater quality in the region.

Schedule 7 – General Industrial Use Water

At the present time, IID is providing water for use by solar energy generation projects under Water Rate Schedule 7. General Industrial Service.

The Project will seek to obtain Conditional Use Permits (CUP) from Imperial County to allow a change from crop production to solar energy production and energy storage. Any reduction in water use due to this change is available under the IID TLCFP. As noted previously, under the terms of California legislation adopted to facilitate the QSA/Transfer Agreements and enacted in CWC Section 1013, the IID board to adopted the TLCFP to address how to deal with any such temporary reduction of water use by projects like Drew Solar that are developed under a CUP.

While conserved water generated from the TLCFP is limited by law for use for water transfer or environmental purposes, by satisfying multiple district objectives the TLCFP serves to reduce the need for efficiency conservation and other water use reduction practices on the part of IID and its water users for the term of the CUP or the Project's life, whichever is shorter; thus providing district-wide benefits. One of the considerations in developing the TLCFP was to provide agricultural land owners with long-term assurances from IID that, at Project termination, irrigation service would be available for them to resume their farming operations.

IWSP Water

IID will determine whether the Project should obtain water under IID's Interim Water Supply Policy (IWSP) for non-agricultural projects in addition to Schedule 7 General Industrial Water. The IWSP, provided herein as Attachment A, designates up to 25,000 AFY of water for potential Non-Agricultural Projects within IID's water service area. As of June 2017, IID has 23,800 AF available under the IWSP for new projects like Drew Solar. The IWSP establishes a schedule for Processing Fees, Reservation Fees, and Connection Fees that change each year for all non-agricultural projects, and annual Water Supply Development fees for some non-agricultural projects. Drew Solar water use will be subject to the annual Water Supply

[25] To comply with US EPA requirements and avoid termination of canal water service, MCI water users in the IID service area who do not receive treated water service must obtain alternative water service for drinking and cooking from a state-approved provider. To avoid penalties that could exceed $25,000 a day, IID strictly enforces this rule. The section [Q: what is meant by "the section"?] tracks nearly 4,000 raw water service accounts required by the California Department of Public Health (CDPH) to have alternate drinking water service. The section maintains a small-acreage pipe and drinking water database, and provides an annual compliance update to CDPH.

Development fee if IID determines that water for the Project is to be supplied under the IWSP.

The likelihood of IID not receiving its annual 3.1 MAF apportionment, less transfer obligations of Colorado River water is low due to the high priority the IID entitlement enjoys relative to other Colorado River contractors. See the "Lower Colorado Region Water Shortage Operations" discussion at the end of the IID Water Rights section above. However, if this were to occur within the 41-year span of the Project, the Project proponent is to work with IID to ensure it can manage any reduction.

As such, this does not present a material risk to the available water supply that would prevent the County from making the findings necessary to approve this WSA. Rather, this contract term reaffirms that IID, like any water provider, has jurisdiction to manage the water supply within its service area and impose conservation measures during a period of temporary water shortage. For the reasons presented in discussed within this WSA, IID has a water supply that is sufficient to support the water demands forecasted for this Project, as well as other existing uses and projected future. Indeed, without the Project, IID's task of managing water supply would be more difficult because the continued agricultural use on the Project site would be significantly higher than the proposed demand for the Project as explained in more detail below.

To obtain water delivery service, the Project proponent will complete an IID-410 Certificate of Ownership and Authorization (Water Card), which allows the Water Department to provide the district with information needed to manage the district apportioned supply. Water cards are used for Agriculture, Municipal, Industrial and Service Pipe accounts. If water is to be provided under IWSP in addition to Schedule 7. General Industrial Use, the Project proponent will seek to enter into a IWSP Water Supply Agreement.

Expected Water Demands for the Project

During operation water will be used for domestic uses and fire protection in addition to other uses. The Project may also use water to wash the solar modules should it be determined to be beneficial to the Project. The Project anticipates a requirement of approximately 60 AFY during plant operation as shown in Table 15 below. The operational water demand will be combined with water demands over construction and decommissioning phases of the Project to calculate an amortized water demand over the lifetime of the Project as described below.

Table 15 - Project Operational Water Demands at Buildout

Source of Water Demand	Amount Required, AFY
Fire Protection	1.0
Sanitary Water	5.0
Panel Washing	14.0
Dust Suppression	35.0
Potable Water	5.0
Total	**60.0**

Due to the proposed Project phasing under the development agreement, it is unknown which year within the first 10 years of the 40-year CUPs the Project will commence construction. It is possible that construction will commence in 2019 at one time, or over five phases over a 10 year period. Regardless of construction phasing, total construction and decommissioning water demands are anticipated to be 1,200 AF each. In order to provide a conservative assessment, this WSA assumes that all the CUPs will commence construction in 2019 at once to allow for the longest fully operational lifetime of the Project (39 years). Decommissioning of the Project would occur immediately after the 40-year CUP term in year 41 and is assumed to take one year. Therefore, an amortized water demand of 116 AFY level for 41 years is assumed. This would result in a total water demand of 4,740 AF as shown in Table 16 below.

Table 16 Amortized Project Water Demand 2019-2060

Project Phase	Water Demand
Construction Water Usage – Year 1 (2019)	1,200 AF
Operational Water Usage – 60 AFY over 39 years (2020 – 2059)	2,340 AF
Decommissioning Water Usage – Year 41 (2060)	1,200 AF
Total Project Water Demands over 41 years	4,740 AF
Amortized Actual Water Demand – 4,740 AF over 41 years	116 AFY

Even though this methodology over-estimates the Project's water demand, this methodology allows the Imperial County Board of Supervisors to assess the water supply impacts of a full construction of the Project at any time within the first 10 years of the CUP assumed approval date (2019).

IID delivers water to the Drew Solar Project area for agricultural uses through delivery gates

on the Wormwood and Woodbine supply systems, shown in Table 1. The agricultural water uses are estimated to be approximately 4,618 AFY (average delivery between 2003 and 2017).[26]

The proposed Project water demand of 116 AFY is a 97% reduction from the water delivered for agricultural uses at the Project site and will contribute 4,502 AFY of conserved water to the TLCFP. The water demands from the proposed Project will be covered by the Schedule 7. General Industrial Service. In addition, the proposed water demand also represents 0.5% of the current balance of 23,800 AYF of supply available for contracting under the IWSP highlighting there is sufficient water available if IID designates the Project to be covered under the IWSP. The significant reduction from existing agricultural water demand, and the availability of IWSP water proves there is water supply available for the proposed Project.

[26] Historic water delivery data to Project site was provided by IID in February 2018.

IID Ability to Meet Demands with Water Supply

Table 17 provides the basis for assessing the ability of IID to meet its customers' water demands through 2060. Table 17 includes IID non-agricultural delivery demands from Table 7, agricultural demands from Table 8, system operation consumptive use from Table 9, and CRWDA IID net available consumptive use after required QSA reductions from Table 11 (Column 11). Table 18 presents IID's 2015 approved water order, consumptive use at Imperial Dam reported from the USBR Decree Accounting Report, and the 2015 underrun reported to the State Water Resources Control Board.

Table 17 IID 2015 and Forecasted Delivery, and Consumptive Use, KAF

	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
1. Non-Ag Delivery	107.8	125.0	134.7	144.5	153.0	164.7	177.0	190.0	200.9	211.7
2. Ag Delivery	2,157.7	2,308.5	2,258.5	2,208.5	2,208.5	2,208.5	2,208.5	2,208.5	2,208.5	2,208.5
3. QSA Salton Sea Mitigation Delivery	142.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4. System Op CU in IID & to Imperial Dam	343.9	436.0	411.0	407.0	407.0	407.0	407.0	407.0	407.0	407.0
5. WB/ IRWMP IID Net CU at Imperial Dam	**2752.0**	**2869.5**	**2804.2**	**2760**	**2768.5**	**2780.2**	**2792.5**	**2805.5**	**2816.4**	**2872.2**
6. Ex.B IID Net Available CU at Imperial Dam	2,564.8	2,649.8	2617.8	2612.8	2612.8	2612.8	2612.8	2665.8	2665.8	2665.8
7. IID CU: WB/IRWMP minus Ex.B Net Available	**187.2**	**219.7**	**186.4**	**147.2**	**155.7**	**167.4**	**179.7**	**139.7**	**150.6**	**161.4**

Notes:
2015 Water Balance rerun 03/21/2017
Ag Delivery for years 2020-2055 in line 2 does not take into account land conversion for solar use nor reduction in agricultural land area due to urban expansion; the forecast ag demand is for 2003 acreage with reduction for projected on-farm conservation efficiency.

As shown above, IID forecasted demand exceeds CRWDA Exhibit B Net Consumptive Use volumes. However, due to temporary land conversion for solar use and urban land expansion that will reduce agricultural acres in the future, a water savings of approximately 217,000 AFY will be generated into the future and for the lifetime of the Project. As shown in Row 7 in Table 17 above, the additional 217 KAF of water will more than satisfy future demands. Additional details on the savings methodology are provided in the following section.

In addition, USBR 2015 Decree Accounting Report states that IID Consumptive Use is 2,480.9 KAF with an underrun of 97.2 KAF, as reported by IID in 2016 IID QSA Implementation Report (page 7); that is, IID uses less than the amount in its approved Water Order (2,592.6 to 2.617.6 KAF). This would indicate that although IID forecasted demand shown in Table 17 exceeds CRWDA Exhibit B Net Consumptive Use volumes for the entire the life of the Project, IID consumptive use may in fact not be as high as forecasted. In addition, given that the Project will use less water than the existing agricultural demand, the Project will decrease rather than

increase overall IID water demands.

Table 18 2015 Approved Water Order, Actual CU (Decree Accounting Report) and IID Underrun, KAF at Imperial Dam

IID Approved Water Order	2,592.6 to 2,617.5 less 7.2 supplied by LCWSP
IID Consumptive Use	2,480.9
IID Underrun /Overrun	97.2
Sources: *2015 IID Revised Water Order, Nov 25, 2015, 2015 Decree Accounting Report, and* *2015 Annual Report of IID Pursuant to SWRCB Revised Order WRO 2002-013*	

As shown below in Table 19, IID measures inflow to the water service area at All-American Canal Station 2900 just upstream of Mesa Lateral 5 Heading. This AVM has an excellent measurement accuracy, 2.4% CI. The 2015 measured inflow at this site was 2,603.8 KAF, which exceeded the CRWDA Exhibit B Net Available for Consumptive Use of 2,564.8 KAF by only 39.0 KAF or when AAC system operation and LCWSP input are added to the AAC measurement by 94.3 KAF, well within the measurement accuracy for this site.

Table 19 2015 WB: IID System Operations Use within the IID water service area and to Imperial Dam, KAF

Delivery System Evaporation	24.5
Canal Seepage	93.9
Canal Spill	1.5
Lateral Spill	125.4
Seepage Interception	-41.1
Unaccounted Canal Water	-7.5
Total System Operational Use, In valley	288.6
Imperial Dam to AAC @ Mesa Lat 5	62.5
LCWSP	-7.2
Total System Operational Use in 2015	**343.9**
Source: 2015 Water Balance rerun 03/21/2017	

Furthermore, in the event that IID has issued water supply agreements that exhausted the 25 KAFY set aside in the IWSP and it becomes apparent that IID delivery demands due to non-agricultural use are going to cause the district to exceed its quantified 3.1 MAFY entitlement less transfer obligations, IID has identified options to meet these demands. These options include (1) tracking water yield from temporary conversion from agricultural to non-agricultural land uses (renewable energy and urban expansion); and (2) only if necessary, developing projects to expand the size of the water supply portfolio.

Tracking Water Savings from Growth of Non-Agricultural Land Uses

The Imperial County Board of Supervisors has targeted up to 25,000 acres of agricultural lands for temporary conversion to solar projects (about 5% of the County's agricultural lands), because they found that a 5% reduction in agricultural lands for solar projects would not adversely affect

agricultural production. Existing solar developments have converted approximately 7,104 acres of farmland[27]. Through the temporary land conversion fallowing program, these projects reduced water usage by the equivalent of 36,430 AF yield at-river in 2015[28].

The balance of the 25,000-acre agriculture-to-solar policy is 17,896 acres. On average, each agricultural acre converted would reduce agricultural demand by 5.13 AFY (36,430 AF/7,104 AC), which results in an at-river yield (reduction in net consumptive use) of 91,800 AFY in addition to the 36,430 AF yield at-river from projects constructed through 2015, for a total of 128,230 AFY yield at-river.

However, due to the nature of the conditional use permits under which the solar projects are being developed, IID cannot rely on this "new" supply being permanently available. In fact, should a solar project decommission early, that land may go immediately back to agricultural use (it remains zoned an agricultural land) and the water demand increase back up that of the existing agricultural land use. Nevertheless, during their operation, the solar projects do ameliorate pressure on IID to implement projects to meet demand from new non-agricultural projects and under the IWSP.

Unlike the impact of solar projects, other non-agricultural uses are projected to grow, as reflected in the nearly 100% increase in non-agricultural water demand 2015 to 2060 (from 108.85 KAF to 211.7 KAF) reflected herein on Table 7. Much of that growth will occur within the sphere of influence areas surrounding incorporated city boundaries within the IID service area, which are currently used for agriculture and demand high levels of water use.

The amount of land developed for residential, commercial, and industrial purposes is projected to grow by 55,733 acres from 2015 to 2050[29] within the sphere of influence of the incorporated cities and specific plan areas in Imperial County. A conservative estimate is that such development will displace at least another 24,500 acres of farmland based on the Imperial Local Agency Formation Commission (LAFCO) sphere of influence maps and existing zoning and land use in Imperial County. At 5.13 AFY yield at-river, there would be a 125,000 AFY reduction IID net consumptive use.

The total foreseeable solar project temporary yield at-river (91,800 AFY) and municipal development permanent yield at-river (125,000 AFY) is to reduce forecasted IID net consumptive use at-river 216,800 AFY, which is more than enough to meet the forecast Demand minus Exhibit B Net Available volumes shown in Table 17. This Yield at-river is sufficient to meet the forecasted excess of non-agricultural use over Net Available supply within the IID service area for not only the next 20 years, as is required for SB 610 analysis, but for the entire 41 year life of the project.

Expanding Water Supply Portfolio

While forecast Yield at-river from the growth of non-agricultural uses in the County is sufficient to meet the forecasted excess of non-agricultural use over Net Available supply the IID service area without expanding its Water Supply Portfolio, IID has also evaluated the feasibility of certain

[27] Imperial Valley Solar II; Alhambra/Arkansas/Sonora Solar Gen 2; Campo Verde; Imperial Solar South, Calexico II-B; and Centinela Solar.
[28] 2015 Temporary Land Conversion Fallowing Program; found here: http://www.iid.com/home/showdocument?id=11625
[29] IRWMP, Chapter 5, Table 5-14.

capital projects to "increase" its Water Supply Portfolio. As reported in the Imperial IRWMP Chapter 12:

> IID contracted with [GEI Consultants, Inc.] to identify a range of capital project alternatives that the district could implement. Qualitative and quantitative screening criteria and assumptions were developed in consultation with IID staff. Areas within IID's service area with physical, geographical (i.e., market demand for the water), and environmental characteristics most suited to implementing short- and long-term alternatives were identified. Technical project evaluation criteria included volumes of water that could be delivered and/or stored by each project, regulatory and permitting complexity, preliminary engineering components, land use requirements, and costs.
>
> After preliminary evaluation, a total of 27 projects were configured: 17 groundwater or drain water desalination, 2 groundwater blending, 6 recycled water alternatives, 1 groundwater banking alternative, and 1 IID system conservation project alternative.

These projects were assessed at a reconnaissance level to allow for comparison of project costs. IID staff and the board identified key factors to categorize project alternatives and establish priorities. Lower priority projects were defined as those projects that were less feasible due to technical, political, or financial constraints. Preferential criteria were project characteristics that would increase the relative benefits of a project and grant it a higher priority. Four criteria were used to prioritize the IID capital projects:

- Financial Feasibility. Projects whose unit cost was more than $600/AF were eliminated from further consideration.
- Annual Yield. Project alternatives generating 5,000 acre-feet or less of total annual yield were determined not to be cost-effective and lacking necessary economies of scale.
- Groundwater Banking. Groundwater banking to capture and store underruns is recognized as a beneficial use of Colorado River water. Project alternatives without groundwater banking were given a lower priority.
- Partnering. Project alternatives in which IID was dependent on others (private and/or public agencies) for implementation were considered to have a lower priority in the IID review; this criterion was reserved for the IRWMP process, where partnering is a desirable attribute.

Based on these criteria, the top ten included six desalination, two groundwater blending, one system conservation, and one groundwater storage capital projects. These capital projects are displayed Table 20 below.

Table 20 - IID Capital Project Alternatives and Cost (May 2009 price levels)

Name	Description	Capital Cost	O&M Cost	Equivalent Annual Cost	Unit Cost ($/AF)	Yield (AF)
GW 18	Groundwater Blending East Mesa Well Field Pumping to AAC	$39,501,517	$198,000	$2,482,000	$99	25,000
GW 19	Groundwater Blending East Mesa Well Field Pumping to AAC with Percolation Ponds	$48,605,551	$243,000	$3,054,000	$122	25,000
WB 1	Coachella Valley Groundwater Storage	$92,200,000	$7,544,000	$5,736,746	$266	50,000
DES 8	East Brawley Desalination with Well Field and Groundwater Recharge	$100,991,177	$6,166,000	$12,006,000	$480	25,000
AWC 1	IID System Conservation Projects (2)	$56,225,000	N/A	$4,068,000	$504	8,000
DES 12	East Mesa Desalination with Well Field and Groundwater Recharge	$112,318,224	$6,336,000	$12,831,000	$513	25,000
DES 4	Keystone Desalination with IID Drainwater/ Alamo River	$147,437,743	$15,323,901	$23,849,901	$477	50,000
DES 14	South Salton Sea Desalination with Alamo River Water and Industrial Distribution	$158,619,378	$15,491,901	$24,664,901	$493	50,000
DES 15	South Salton Sea Desalination with Alamo River Water and MCI Distribution	$182,975,327	$15,857,901	$26,438,901	$529	50,000
DES 2	Keystone Desalination with Well Field and Groundwater Recharge	$282,399,468	$13,158,000	$29,489,000	$590	50,000
Source: Imperial IRWMP, Chapter 12; see also Imperial IRWMP Appendix N, IID Capital Projects						

As mentioned above, IID's quantified Priority 3(a) water right under the QSA/Transfer Agreements secures 3.1 MAF per year, less transfer obligations of water for IID's use from the Colorado River, without relying on rainfall in the IID service area. Even with this strong entitlement to water, IID actively promotes on-farm efficiency conservation and is implementing system efficiency conservation measures including seepage recovery from IID canals and the All-American Canal (ACC) and measures to reduce operational discharge.

Overall, agricultural water demand in the Imperial Valley will decrease due to IID system and grower on-farm efficiency conservation measures that are designed to maintain agricultural productivity at pre-QSA levels while producing sufficient Yield at-river to meet IID's QSA transfer obligations. Such efficiencies combined with the conversion of some agricultural land uses to non-agricultural land uses (both solar and non-solar), ensure that IID can continue to provide water supply to its existing and future agricultural and non-agricultural water users, including the Drew Solar Project for the required 20-year CEQA timeframe for WSAs and the anticipated 41 year Project lifetime. IID has also evaluated the feasibility of new capital water supply projects, but does not find them necessary to implement at this time in order to meet existing and forecasted water demands within its service area.

Public Water System/Lead Agency Findings

1. IID serves as the regional wholesale water supplier, importing raw Colorado River water and delivering it, untreated, to agricultural, municipal, industrial, environmental and recreational water users within its Imperial Unit water service area.
2. IID's entitlement to consumptive use of Colorado River water is capped at 3.1 MAF pursuant to the QSA. In 2015 IID consumptively used 2,480,933 AF of Colorado River water (volume at Imperial Dam); 2,266,884 AF were delivered to customers of which 2,157,672 AF or 95.14 percent went to agricultural users.
3. Reduction of IID's net consumptive use of Colorado River water under the terms of the Colorado River Water Delivery Agreement is to be the result of efficiency conservation measures. Agricultural consumptive use in the Imperial Valley will not decline. However, IID operational spill and tailwater will decline, impacting the Salton Sea.
4. Due to the dependability of IID's water rights, Colorado River flows, and Colorado River storage facilities for Colorado River water, it is unlikely that the water supply of IID would be disrupted, even in dry years or under shortage conditions because Mexico, Arizona and Nevada have lower priority and are responsible for reducing their water use during a declared Colorado River water shortage.
5. Historically, IID has never been denied the right to use the annual volume of water it has available for its consumptive uses under its entitlement.
6. The Drew Solar Project is estimated to use 1,200 AF of water during construction, 60 AFY of water during operation, and 1,200 AF during decommissioning, for a total amortized water demand of 116 AFY over the total 41-year life of the Project. This is a 97% decrease when compared to existing agricultural water use at the Project site.
7. The Project water use will be covered under the "Schedule 7. General Industrial Water Service." If this Project utilizes IID's IWSP for Non-Agricultural Projects, water for this Project will be supplied to the Project site via a Water Supply Agreement with IID. Provided a Water Supply Agreement is approved and executed by IID under the provisions of its IWSP, the Project will use only 0.5% of the 23,800 AFY of currently available IWSP water.
8. Based on the entire record and the environmental document prepared for this Project pursuant to the CEQA, California Public Resources Code sections 21000, *et seq.*, Imperial County hereby finds that the projected water supplies will be sufficient to satisfy the demands of this Project, in addition to existing and planned future uses, including agricultural and non-agricultural uses for a 20 year period and a 41 year period.

Assessment Conclusion

This WSA has determined that IID water supply is adequate for this Project. The IID's IWSP for Non-Agricultural Projects dedicates 25,000 AFY of IID's annual water supply to serve new projects. To date 23,800 AF per year remain available for new projects ensuring reasonably sufficient supplies for new non-agricultural water users. Total water usage for the Project life represents 0.5% of the unallocated supply set aside in the IWSP for non-agricultural projects, and approximately 0.05% of forecasted future non-agricultural water demands planned in the Imperial IRWMP through 2060. In addition, the Project represents an estimated 97% decrease of the water demand for agricultural uses at the Project site and will provide a reduction in use of an estimated 4,502 AFY at Full Build-Out.

For all the reasons described herein, the amount of water available and the stability of the IID water supply along with on-farm and system efficiency conservation and other measures being undertaken by IID and its customers ensure that the Drew Solar water needs will be met for the next forty-one (41) years.

Resources

1. California Department of Water Resources. (2003). Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 to assist water suppliers, cities, and counties in integrating water and land use planning.

2. Imperial County Planning and Development Services. (2008). Imperial County General Plan 2008 Update. El Centro, CA.

3. Imperial Irrigation District. 7 April 2009. Environmental Compliance Report for Revised Regulations for Equitable Distribution Plan. Imperial, CA: http://iid.com/Water/EquitableDistribution.

4. Imperial Irrigation District. 29 September 2009. Interim Water Supply Policy for Non-Agricultural Projects. Imperial, CA

5. Imperial Irrigation District. October 2012 Imperial Integrated Regional Water Management Plan, Chapter 12.

6. Imperial Irrigation District. 2015 Annual Report of IID Pursuant to SWRCB Revised Order WRO 2002-013

7. Imperial Irrigation District Website: Water Conservation Plan. Resources Planning and Management. (2008). Imperial Irrigation District 2007 Water Conservation Plan. Imperial, CA.

8. Imperial Irrigation District Website: QSA Annual Report Resources Planning & Management. (2010). Imperial Irrigation District 2009 Annual QSA Implementation Report. Imperial, CA.

9. Imperial Irrigation District Water Resources and Grant Management (2017) Consultation with Anisa J Divine, Ph.D., Senior Planner. Imperial, CA.

10. United States Department of Agriculture Soil Conservation Service. (1981). Soil Survey of Imperial County California Imperial Valley Area.

11. United States Bureau of Reclamation Lower Colorado Region Website: Boulder Canyon Operations Office – Programs and Activities, Lower Colorado River Water Accounting, Water Accounting Reports (1964 - 2015). Compilation of Records in Accordance with Article V of the Decree of the Supreme Court of the United States in Arizona v. California Dated March 9, 1964: Calendar Years 1964 - 2015 Boulder City, NV.

12. United States Bureau of Reclamation. 2003 CRWDA ROD Implementation Agreement, IOPP, and Related Federal Actions Final EIS. Section IX. Implementing the Decision A. Inadvertent Overrun and Payback Policy. Pages 16-19 of 34.

13. Imperial Irrigation District. 2015 Temporary Land Conversion Fallowing Policy. Found here: http://www.iid.com/home/showdocument?id=11625

14. Imperial County. Imperial County General Plan, Geothermal/Alternative and

Transmission Element, revised 2006 and 2015.

15. Imperial County. 2015 Imperial County Agricultural Crop & Livestock Report. September 27, 2016.

APPENDIX M

ECONOMIC IMPACT ANALYSIS (EIA)
EMPLOYMENT/JOBS IMPACT ANALYSIS (JIA)
FISCAL IMPACT ANALYSIS (FIA)
STATEMENT OF POTENTIAL FOR URBAN DECAY

THIS PAGE INTENTIONALLY LEFT BLANK.

Development Management Group, Inc.

economic development ■ fiscal & economic analysis ■ development management

Drew Solar, LLC

Imperial County, California Projects

Economic Impact Analysis (EIA)
Employment (Jobs) Impact Analysis (JIA)
Fiscal Impact Analysis (FIA)
Statement of Potential for Urban Decay

Completed for:

FINAL Report of Findings
February 21, 2019

41-625 Eclectic Street, Suite D-2 ■ Palm Desert, CA 92260
Office: (760) 346-8820 ■ Mobile: (760) 272-9136 ■ Fax: (760) 346-8887
michael@dmgeconomics.com ■ www.dmgeconomics.com

Development Management Group, Inc.
economic development ■ fiscal & economic analysis ■ development management

February 21, 2019

Andy Horne, Deputy County Executive Officer
Natural Resources Development
County of Imperial
940 Main St., Suite 208
El Centro, CA 92243

RE: FINAL REPORT OF FINDINGS ECONOMIC/EMPLOYMENT (JOBS)/FISCAL IMPACT ANALYSIS AND STATEMENT OF POTENTIAL FOR URBAN DECAY: DREW SOLAR, LLC PROPOSED PROJECT IMPERIAL COUNTY, CA

Dear Mr. Horne:

On behalf of Development Management Group, Inc., I am honored to provide you with our independent analysis of the economic, employment and fiscal impacts of the proposed Drew Solar, LLC in Imperial County, CA. The purpose of this cover letter is to provide you with a brief explanation of each of the three analyses contained in this report and a summary. By review, the proposed project is a 100MW solar energy generation facility over approximately 763 acres.

An ***Economic Impact Analysis*** calculates the predicted impact to a community or region as a result of a project or activity. This includes all known direct (and indirect) expenditures as a result of both construction and operation for the projected life of a facility/project. With respect to the Drew Solar, LLC we have calculated that the economic impact to the Imperial County region will be approximately $109.14 million over the thirty (30) year life of the project (inclusive of both project construction and operations). By comparison, DMG, Inc. calculated the estimated economic impact of the current use of the subject property (field/grass crops and produce) over the same thirty (30) year period to be $80.34 million.

An ***Employment or Jobs Impact Analysis*** calculates not only the total amount of construction and operational jobs but also compares those jobs to those already in existence on the project site. Specific to the Drew Solar, LLC, the subject property has historically been used for hay/grass type crops. We have determined that the Drew Solar, LLC will generate the equivalent of 190 full-time one-year equivalent construction jobs over the first year (construction) and 4 full-time equivalent permanent jobs. By comparison the current use of the site (hay/grass type crops) produces about 5.5 jobs. When comparing both the direct and indirect permanent employment of agriculture versus utility (energy) production, the proposed use will generate a total of 14.36 permanent jobs while the current use creates 9.79 permanent jobs.

41-625 Eclectic Street, Suite D-2 ■ Palm Desert, CA 92260
Office: (760) 346-8820 ■ Mobile: (760) 272-9136 ■ Fax: (760) 346-8887
michael@dmgeconomics.com ■ www.dmgeconomics.com

We conclude that the proposed use of the site for solar energy production will generate about 4 or 5 more total (direct and indirect) permanent jobs as the current use. This is in addition to the 190 one-year equivalent FTE construction jobs that are projected during the first year (the construction period).

Finally, a ***Fiscal Impact Analysis*** calculates the amount of revenue a governmental agency is expected to receive and calculates the projected costs they will incur to provide appropriate services to both the project and the additional population/employment generated as a result of such. A comparative model is then produced in order to determine if the project is of economic benefit or cost to the government agency.

Development Management Group, Inc. has calculated that the Drew Solar, LLC will generate approximately $3.36 million in net local (county) tax revenue over the thirty (30) year life of the project. This is derived from an estimated $1.31 million in sales tax revenue and $2.05 in net property tax revenue.

It is projected that it will cost the County about $2.56 million to provide appropriate services to the project and related employment thus generating a projected surplus to the County of Imperial of about $802,000 over the thirty (30) year life of the project (subject to acceptance of the recommendations provided within the report). Note that this amount is based solely on the tax laws that are currently in place and does not include any amounts that may be received by the County under a Public Benefits Agreement or similar arrangement.

A complete report of findings along with a list of sources and detailed calculations are contained within the report that follows. We are prepared to answer any questions you may have about our work and conclusions. I can be reached at (760) 272-9136 or by email at michael@dmgeconomics.com.

Sincerely,

Michael J. Bracken
Managing Partner

1. Introduction

Development Management Group, Inc. (DMG) has been retained by the County of Imperial, California to provide an independent Economic Impact Analysis (EIA), Employment/Jobs Impact Analysis (JIA) and Fiscal Impact Analysis (FIA) for a proposed solar energy generation facility to be constructed within the County of Imperial, California. The project is scheduled to produce 100 MW of power. On approximately 763 acres of land.

This Employment Impact Analysis assumes all calculations in 2018-19 dollars as a base year with an appropriate adjustment for future years (see notes in exhibits for assumptions). The expected life of the facility is 30 years which is generally in line with the length of entitlements for these types of projects).

2. Contact Information for the County of Imperial, California

Mr. Andy Horne, Deputy County Executive Officer
Natural Resources Development
County of Imperial
940 Main St., Suite 208
El Centro, CA 92243
760.482.4727 (office)
andyhorne@co.imperial.ca.us

3. Contact Information for Drew Solar, LLC

Mr. Robert Ferrara
Drew Solar, LLC
P.O. Box 317
El Centro, CA 92244
949-215-4096
Robert.Ferrara@bona-terra.com

4. Contact Information for Development Management Group, Inc.

Michael Bracken, Managing Partner
Development Management Group, Inc.
41-625 Eclectic Street, Suite D-2
Palm Desert, CA 92260
(760) 346-8820 / (760) 346-8887 (fax)
michael@dmgeconomics.com

5. Statement of Contents:

31. Exhibit M: Projected Costs for County to Provide General Government Services to Population
32. Exhibit N: Projected Costs for County to Provide General Government Services to Project
33. Exhibit O: Consolidated Revenue Versus Expenses of Drew Solar, LLC Project to the County of Imperial
34. Exhibit P: Aerial Map of Proposed Project

6. Statement of Independence

The County of Imperial has provided a joint contractual obligation with Development Management Group, Inc. regarding independence of conclusions contained in this report. Therefore, neither project proponent (applicant) nor the County of Imperial (including those associated directly working on the entitlement process for the Drew Solar, LLC) have provided editorial comment or direction regarding the conclusions contained herein.

7. Scope and References of Analysis:

Development Management Group, Inc. has utilized information contained from the following sources in completing this analysis:

1. California Department of Conservation
2. California Department of Industrial Relations
3. California Economic Strategy Panel (RIMS II)
4. California Employment Development Department
5. California Energy Commission
6. California Independent System Operator
7. California Public Utilities Commission
8. California State Board of Equalization
9. California State Department of Finance
10. Confidential Sources (Unnamed Active Farmers)
11. County of Imperial, California
12. County of Kern, California
13. County of Riverside, California
14. County of San Bernardino, California

15. Development Management Group, Inc. (Guidance Memorandum Dated 2/22/12)
16. Drew Solar, LLC
17. Environics Analytics
18. Environmental Management Associates
19. Imperial County Farm Bureau
20. Imperial Irrigation District
21. Implan Group, Inc.
22. Regional Analysis & Information Data Sharing (Raidsonline.com)
23. The Hoyt Report
24. United States Bureau of Economic Analysis
25. United States Census Bureau (American Community Survey)
26. United States Department of Labor
27. Western Farm Press

8. Qualifications of Consultant

Development Management Group, Incorporated (DMG, Inc.) specializes in services related to economic development and redevelopment. Such services include site selection and analysis, economic development strategic planning and implementation, development management, market/development feasibility, economic analysis, entitlement/permit processing and project financing. DMG has completed over two-hundred (200) Fiscal and Economic Impact Analysis projects for both the private and public sector and serves as a contract economist for the Southern California Association of Governments.

Over the past fifteen (15), DMG, Inc. has assisted over five dozen companies with their site selection and entitlement/permit processing. These companies have created over 2,500 new jobs and invested tens of millions of dollars within the communities they are located. In addition, DMG, Inc. has assisted a number of public agencies and economic development corporations with economic impact analysis, strategic planning, marketing and other business recruitment projects creating the administrative and operational infrastructure to enable them to grow their economies.

The company founder, Michael Bracken, brings over 25 years of local, regional and state government experience in the fields of economic development, redevelopment, housing and sales and use tax administration. Before founding Development Management, Inc., Bracken completed four years as the President and Chief Executive Officer of the Coachella Valley Economic Partnership where he led a regional business recruitment team that generated over $90 million of economic investment for the Palm Springs Region of Southern California.

Bracken holds a Bachelor's Degree in Business Administration and a Master's Degree in Public Administration from The California State University San Bernardino (CSUSB). He co-designed CSUSB's Master's level course titled *Management of Local Economic Development*, which trains economic development professionals in business recruitment and effective use of financial and tax incentives.

He is also a former City Councilman and Vice-Chairman of a Community Redevelopment Agency providing unique and beneficial prospective to local governments.

9. Description of Economic Multipliers

There are two types of multipliers that are generally utilized by economists. These include spending multipliers and job creation multipliers. Simply stated, spending multipliers is the calculation of the number of times a dollar is expected to be spent through the regional economy. Economic multipliers differ based on the origination of that particular dollar. For example, labor multipliers are higher than material multipliers as labor dollars are paid directly to personnel and generally spent more locally. Dollars spent on materials (for example, construction materials) are more likely to leave the regional economy as they are used to pay suppliers located elsewhere.

Economists often provides the example of a gold mining town when describing the concept of economic multipliers. Imagine a gold miner with money paying various persons within the town for a place to sleep, equipment to mine, food and entertainment. The recipients of these dollars then utilize the money they received for their own purchases (including a place to sleep, supplies for their businesses, food and entertainment). Economic multipliers are the basis of understanding how a particular business or use will impact a regional economy.

There is disagreement between individual economists and government authorities regarding appropriate economic multipliers. More aggressive economists often argue for higher economic multipliers stating that dollars continually circulate through an economy. Conservative economists believe that multipliers are lower and that the circulation has an ending point (and therefore a new beginning point) in the spending cycle. In an effort to provide the greatest amount of accuracy to an analysis of this nature, Development Management Group, Inc. utilizes the RIMS II model, which most economists consider to be a more conservative estimate of economic multipliers.

The RIMS II model is based on work by the United States Bureau of Economic Analysis. DMG, Inc. is utilizing the latest RIMS II Model (dated 2007/2016). Use is also made of the California Economic Strategy Panel 2009. They published a study titled "Using Multipliers to Measure Economic Impacts". This publication looks at 473 industry types. In this report, earnings have an economic multiplier of between 1.40 (industries related to social assistance) and 7.59 (industries involving water transportation). Most economic multipliers are in the 2.00 to 2.50 range.

Employment multipliers help predict the number of additional jobs that are created elsewhere in the economy for each job of a certain type. For example, if a certain type of job (let's say one involving the retail trade which has a multiplier of 1.6312, for each job directly attached to retail, an additional .6312 (or 6/10) of a job is created elsewhere in the economy). DMG, Inc. applies the use of economic multipliers in the following pages to help present potential economic, employment and fiscal impacts.

10. Need for Renewable Energy Generation

As the Renewable Portfolio Standard (RPS) requirements continue to increase, so will investment in the region. California has essentially met the RPS standard of a minimum of 33% (SBX1-2) and is now working toward the implementation of SB350 which increases the RPS standard to 50% by 2030. Most recently (September 2018) California Governor Jerry Brown signed SB 100 into law, which sets the bar for California to generate 100% of energy through renewable sources by the year 2045.

The Imperial Valley Economic Development Corporation (IVEDC) and the County of Imperial sponsored the development of an Economic Development Strategic Plan in 2006. The plan, which has been adopted by IVEDC, the County of Imperial and most of the incorporated communities listed the recruitment of renewable energy generators as one of seven industries in which the region should focus its economic investment attraction efforts.

The plan won a statewide award from the California Association for Local Economic Development in 2007. For purposes of disclosure, Development Management Group, Inc. was the firm that produced the plan under contract with the County of Imperial.

11. Host Region, Location and Project Description

The County of Imperial, California (Imperial County) is located in the southeast corner of California. The population of the County is approximately 190,624 (2018 California Department of Finance) The California Employment Development Department (EDD) shows as of December, 2018 that the unemployment rate for Imperial County is 17.3% with 75,400 available in the workforce, 62,400 employed and 13,000 currently unemployed.

Drew Solar, LLC is proposing to construct a 100 MW photovoltaic solar energy generation facility in the Imperial Valley portion of Southern California The project would comprise the development of approximately 763 acres of land in areas that are generally described as portions of unincorporated Imperial County South of Interstate 8 near State Route 98 and Drew Road (about 8-10 miles West of the City of Calexico, California).

By nature, photovoltaic solar energy is only generated during daylight hours. The amount of power produced is variable depending upon certain weather conditions. This said, the following are rough estimates of power generated to give readers some sense of the potential of this project. It is estimated each megawatt (MW) of power will generate sufficient daytime electricity for approximately 325 homes. This means that it is reasonable to assume that the proposed facility will help generate daytime power for approximately 32,500 homes or about 114,000 people (at 3.5 persons per household).

The facility is scheduled to be built over a twelve (12) month period. It is anticipated that about 190 FTE construction jobs will be generated during the one-year construction period.

The subject parcel numbers are provided below:

052-170-056
052-170-037
052-170-031
052-170-032
052-170-039
052-170-067

Total Acreage: 762.8 (approximate)

12. Description of Analyses Contained and Limitations

Development Management Group, Inc. is presenting three types of analysis. These include an Economic Impact Analysis, an Employment or Jobs Impact Analysis and a Fiscal Impact Analysis. Each serves a distinct purpose in evaluating the overall economics of a project.

An ***Economic Impact Analysis*** is designed to provide calculations regarding the potential overall economic impact of a project for a region. It gives an understanding of the quantity of dollars that will flow through an economy as a result of a project. In the case of a solar energy generation project this includes such items as labor, construction materials, local purchases and operations. Additionally, calculations are presented regarding the amount of money that will be generated for governmental purposes (through taxes and fees). A combination of the two calculations (and associated multipliers) provides a full understanding of the potential economic impact.

An Employment Impact Analysis (or in this case what we term as a ***Jobs Impact Analysis***) provides calculations regarding the number of direct and indirect jobs that are generated as a result of construction and operation of the project. Additionally, it provides a comparison to the direct and indirect jobs that are currently in place as a result of existing land use(s).

Finally, a ***Fiscal Impact Analysis*** provides a financial picture of what it may cost a governmental authority (such as the County of Imperial) to provide essential goods and services to a community as a result of a specific development project and compares it to the revenue stream that is expected as a result of the same project. The consolidation of the two calculations provides a graphical analysis for which to determine if a project is fiscally viable for a governmental agency.

This report does have certain limitations, which are disclosed below:

1. Drew Solar, LLC has stated that their intention (if market conditions (demand and financing) prevail, is to build their project in (essentially) a single phase over twelve (12) months. That said, it is understood that they may be seeking a Conditional Use Permit (CUP) that would allow a number of years to complete build-out.
2. DMG, Inc. does not provide an analysis of a highest and best use of the subject property. Our analysis is limited to analyzing the current use and projected use.
3. DMG, Inc. does not provide civil engineering services or construction cost estimation. Therefore, to the extent that we recommend public improvement mitigation, we are able to provide a potential formula for use by a qualified civil or traffic engineer but not the calculations itself.
4. DMG, Inc. endeavors to utilize as much third-party data as possible, but as with any projection, certain assumptions must be made for which to provide appropriate calculations and conclusions.
5. DMG, Inc. recognizes that some of the data provided directly by the project proponent is considered proprietary in nature. This said, it is not completely possible to protect all such information in relation to completing this analysis without utilizing some of the specific numbers and calculations.

6. DMG, Inc. has copyrighted each and every page of this report. The purpose of the Copyright is to protect our analysis and report structure as it is considered intellectual property of DMG, Inc. This said, the County of Imperial does have unlimited use of this report (in Final Report status) for which to analyze the project, print/publish for public comment and make public policy decisions. Any use by any other person or entity of this analysis and/or system without the express written and/or licensed permission of Development Management Group, Inc. is prohibited.

13. Economic Impact Analysis (Exhibits A thru D)

Construction and Operation

Drew Solar, LLC is anticipated to cost approximately $80.6 million (this includes the construction of 100 MW of production capacity, not including any (potential) battery storage). The costs are generally split into short term (construction) and long term (operational) impacts.

The construction phase of the project is scheduled to include the following types of expenditures:

1. Site Acquisition
2. Engineering
3. Project Management (including Overhead and Profit to an EPC)
4. Solar Energy Facility (farm itself including the equipment and labor)
5. Site Work (clearing & grubbing, grading and fencing)
6. Project Substation (for which to "collect" the energy and prepare it for transmission)
7. Interconnection Facilities (to take the power and "load" it onto power transmission lines)
8. Interior Roads & Landscaping
9. Operations Facilities

In terms of construction, the project is expected to generate about 190 full time equivalent jobs lasting about twelve (12) months. In total, about $20.1 million is projected in direct and indirect construction labor (this is exclusive of engineering, overhead, management and other professional hours scheduled through the EPC (EPC is an industry term meaning Engineering, Procurement & Construction). The economic multiplier for construction labor is 1.3223. This means that for each dollar spent on labor to

construct the facility it is anticipated that an additional 32 cents is spent within the economy as that dollar circulates. In total, it is projected that the economic impact of construction labor will be about $26.64 million.

Additionally, $60.45 million in material purchases are anticipated to construct the solar energy generation project and support facilities. Obviously only a small portion of the material purchases will come from within the Imperial Valley as such items as support beams (mounting posts) and the solar panels themselves are manufactured outside the region. DMG, Inc. has explored what materials may come directly from Imperial Valley vendors and we have determined that such items as aggregate and cement/concrete will likely come from within the region. Thus, for purposes of calculating the potential impact of the development of the project, we are estimating that 5% of the overall materials purchased may come from within the region. This would equate to about $3.02 million dollars being spent within the region on materials during the construction period. In applying an economic multiplier of 1.44 for construction material purchases, the overall economic impact of material purchases within the region is anticipated to be about $4.36 million over the same period.

Long term operational impacts will take the form of operational labor, facility security and maintenance. Information from the developer suggests some additional local material purchases to be made as part of the operation of the facility. It is estimated that the economic impact of material purchases (during the thirty (30) year life of the facility will have an economic impact of about $3.83 million on the regional economy.

At build-out there the solar facility will employ a projected full time equivalent of 4 persons. Over the life of the facility, operational labor is estimated to have a $35.38 million economic impact on the regional economy. It is also anticipated that there will be some additional contract services required for the operation and maintenance of the facility. Exhibit A provides the scheduled calculations along with scheduled and multipliers.

Finally, as the project developer is scheduled to lease the subject property, there is value to the lease payment dollars circulating through the economy. Considering about $28.6 million in direct land lease payments and an economic multiplier of 1.36, the value (economic impact) to the region is about $38.93 million over the life of the project.

It is calculated that the construction and operation of Drew Solar, LLC project will have an overall economic impact to the Imperial Valley Region of about ***$446.98 million*** over the thirty (30) year period of construction and operation.

Conclusion Regarding Economic Impact to the Imperial Valley Region

Development Management Group, Inc. projects that the Drew Solar, LLC project will have approximately ***$109.14 million in economic impact to the regional economy*** over the thirty (30) year life of the project.

Governmental Revenues

The Drew Solar, LLC will provide certain and specific tax revenues to the County of Imperial and other region-based taxing organizations. By way of background, California Law provides a property tax exemption for qualified solar energy systems. Below is the verbiage from the California Revenue and Taxation Code, section 73.

73. (a) Pursuant to the authority granted to the Legislature pursuant to paragraph (1) of subdivision (c) of Section 2 of Article XIII A of the California Constitution, the term "newly constructed," as used in subdivision (a) of Section 2 of Article XIIIA of the California Constitution, does not include the construction or addition of any active solar energy system, as defined in subdivision (b).

(b) (1) "Active solar energy system" means a system that uses solar devices, which are thermally isolated from living space or any other area where the energy is used, to provide for the collection, storage, or distribution of solar energy.

(2) "Active solar energy system" does not include solar swimming pool heaters or hot tub heaters.

(3) Active solar energy systems may be used for any of the following:

(A) Domestic, recreational, therapeutic, or service water heating.

(B) Space conditioning.

(C) Production of electricity.

(D) Process heat.

(E) Solar mechanical energy.

(c) For purposes of this section, "occupy or use" has the same meaning as defined in Section 75.12.

(d) (1) (A) The Legislature finds and declares that the definition of spare parts in this paragraph is

declarative of the intent of the Legislature, in prior statutory enactments of this section that excluded active solar energy systems from the term "newly constructed," as used in the California Constitution, thereby creating a tax appraisal exclusion.

(B) An active solar energy system that uses solar energy in the production of electricity includes storage devices, power conditioning equipment, transfer equipment, and parts related to the functioning of those items. In general, the use of solar energy in the production of electricity involves the transformation of sunlight into electricity through the use of devices such as solar cells or other solar collecting equipment. However, an active solar energy system used in the production of electricity includes only equipment used up to, but not including, the stage of conveyance or use of the electricity. For the purpose of this paragraph, the term "parts" includes spare parts that are owned by the owner of, or the maintenance contractor for, an active solar energy system that uses solar energy in the production of electricity and which spare parts were specifically purchased, designed, or fabricated by or for that owner or maintenance contractor for installation in an active solar energy system that uses solar energy in the production of electricity, thereby including those parts in the tax appraisal exclusion created by this section.

(2) An active solar energy system that uses solar energy in the production of electricity also includes pipes and ducts that are used exclusively to carry energy derived from solar energy. Pipes and ducts that are used to carry both energy derived from solar energy and from energy derived from other sources are active solar energy system property only to the extent of 75 percent of their full cash value.

(3) An active solar energy system that uses solar energy in the production of electricity does not include auxiliary equipment, such as furnaces and hot water heaters that use a source of power other than solar energy to provide usable energy. An active solar energy system that uses solar energy in the production of electricity does include equipment, such as ducts and hot water tanks, that is utilized by both auxiliary equipment and solar energy equipment, that is, dual use equipment. That equipment is active solar energy system property only to the extent of 75 percent of its full cash value.

(e) (1) Notwithstanding any other law, for purposes of this section, "the construction or addition of any active solar energy system" includes the construction of an active solar energy system incorporated by the owner-builder in the initial construction of a new building that the owner-builder does not intend to occupy or use. The exclusion from "newly constructed" provided by this subdivision applies to the initial purchaser who purchased the new building from the owner-builder, but only if the owner-builder did not receive an exclusion under this section for the same active solar energy system and only if the initial purchaser purchased the new building prior to that building becoming subject to reassessment to

the owner-builder, as described in subdivision (d) of Section 75.12. The assessor shall administer this subdivision in the following manner:

(A) The initial purchaser of the building shall file a claim with the assessor and provide to the assessor any documents necessary to identify the value attributable to the active solar energy system included in the purchase price of the new building. The claim shall also identify the amount of any rebate for the active solar energy system provided to either the owner-builder or the initial purchaser by the Public Utilities Commission, the State Energy Resources Conservation and Development Commission, an electrical corporation, a local publicly owned electric utility, or any other agency of the State of California.

(B) The assessor shall evaluate the claim and determine the portion of the purchase price that is attributable to the active solar energy system. The assessor shall then reduce the new base year value established as a result of the change in ownership of the new building by an amount equal to the difference between the following two amounts:

(i) That portion of the value of the new building attributable to the active solar energy system.

(ii) The total amount of all rebates, if any, described in subparagraph (A) that were provided to either the owner-builder or the initial purchaser.

(C) The extension of the new construction exclusion to the initial purchaser of a newly constructed new building shall remain in effect only until there is a subsequent change in ownership of the new building.

(2) The State Board of Equalization, in consultation with the California Assessors' Association, shall prescribe the manner, documentation, and form for claiming the new construction exclusion required by this subdivision.

(f) This section applies to property tax lien dates for the 1999 -2000 fiscal year to the 2015-16 fiscal year, inclusive.

(g) The amendments made to this section by the act that added this subdivision apply beginning with the lien date for the 2008-09 fiscal year.

(h) This section shall remain in effect only until January 1, 2017 (since extended to expire December 31, 2024), and as of that date is repealed.

Essentially this means that the actual solar energy generation equipment is exempt from property taxes but there are elements of the project that are subject to property taxes. These include the land itself and non-solar equipment improvements to the land which includes such items as fencing, project substation, interconnection facilities and common service facilities. Such elements are scheduled in Exhibit B of this report.

It is estimated that the project will generate approximately $208,357 in gross property taxes per year (not including annual increases) at build-out (Year 2). This translates to over $7.61 million in gross property taxes over the thirty-year life of the project. Exhibit C provides the estimated property tax benefit to the County of Imperial (net to County of Imperial Property Taxes). Finally, Exhibit D provides a consolidated beneficiary chart to various County of Imperial entities which accounts for the approximately $2.05 million in property taxes that are estimated to be generated by the project from years 1-30.

Exhibit D provides the amount scheduled to be received by County of Imperial beneficiaries (County General Fund, Library and Fire). The Exhibit (D) also reflects that 46% of the funds previously allocated to the County General Fund have been recaptured as part of the Education Revenue Augmentation Fund).

The subject properties also include a number of add-on taxes (or benefit taxes) that were passed by local voters. Such add-on taxes benefit Calexico Unified, McCabe Union and Imperial Community College District (Imperial Valley College). Over the thirty-year life of the project, these add-on property taxes are projected to total about $1.27 million in direct dollars to the above-named organizations. Exhibit E provides a full allocation of all local property taxes by taxing agency.

The second revenue stream comes from Sales Taxes. In the State of California sales tax is applicable when construction materials are purchased by a construction contractor. An example would be a contractor that purchases roofing materials from a roofing supply company. At the time the contractor purchases the materials, he or she pays sales tax on the amount purchased. The point of sale is the place where the purchase was “principally negotiated” which is typically the location of the roofing supply business. The point of sale is important because local jurisdictions receive a portion of the sales tax collected.

In the case of a solar power generation facility that is scheduled to have hundreds of millions of dollars of materials, the point of sale provides substantial financial benefit to the retailer (supplier) of the materials. The following paragraphs provide guidance regarding the applicability of sales tax on solar equipment and the appropriate structure so that the County of Imperial may maximize its ability to receive financial benefit as the designated point of sale.

There are two (2) documents which are worthy of review and understanding relative to how sales and use tax can and should be handled for the Imperial County project. The first is Regulation 1521, which governs Construction Contractors and defines Construction Contracts. The second is Publication 28 entitled "Tax Information for City and County Officials" (relative to Sales and Use Tax). Both documents are available through the California State Board of Equalization.

Regulation 1521 states that photovoltaic panels (PV) are considered fixtures. Further, Drew Solar, LLC or anyone else that would be installing them on real property would be a Construction Contractor and the "retailer" of the product. This means that Drew Solar, LLC would be responsible for reporting and paying of sales and use tax to the State of California. A section under Regulation 1521 deals directly with Construction Contractors that are also the manufacturer of the product. Simply stated, there are various methods for which Drew Solar, LLC to determine the retail price or value of the product. Such methods are described in detail on Page 3 of Regulation 1521 (Measure of Tax: Determining Cost Price).

Sales and Use Tax applies to fixtures utilized in the construction process. The law provides the option for a Construction Contractor to obtain a "Sales Tax Jobsite Sub-Permit" that allows the reporting of sales and use taxes at the jobsite itself (rather than where the fixtures were purchased). Essentially this means that the County of Imperial (under the Jobsite Sub-Permit) would receive the maximum financial benefit of a project such as the one proposed by Drew Solar, LLC. Publication 28 Exhibits A and B provide greater detail as to both the qualification and application to obtain a "Jobsite Sub-Permit".

Essentially, at such time as construction commences, Drew Solar, LLC would simply file for a "Sales Tax Jobsite Sub-Permit for Construction Contractors (Exhibit A of Publication 28). Sales Tax will then be reported to the Board of Equalization and paid by Drew Solar, LLC. Since the Sub-Permit will be specific to the job site, the County of Imperial will receive the maximum amount of sales tax as the local entity. Below are some excerpts from Regulation 1521 reporting of sales and use tax for photovoltaic (PV):

Regulation 1521

This regulation describes how Construction Contractors are to report sales and use tax for Construction Contracts. First, Section 13 states, "A contract to furnish and install a solar energy system onto a structure or realty is a construction contract which involves furnishing and installing both materials and fixtures. A solar energy system is defined as any solar collector or other solar energy device that provides for the collection and distribution of solar energy and, where applicable, the storage of solar energy."

Subsection 13 (B) Fixtures: "Photovoltaic (PV) cells, solar panels and solar modules, including both solar thermal panels and solar electric PV panels, are considered fixtures when they are accessory to a building or other structure and do not lose their identity as accessories when installed. Examples of these types of solar panels include, but are not limited to, rack mounted solar panels installed on roofs and solar panels used in free-standing solar arrays." (DMG Analysis: The PV panels are deemed to be Fixtures under Subsection 13 (B))

1521 (b)(2)(B)(1) In General

In General, Construction Contractors are retailers of fixtures which they furnish and install in the performance of construction contracts and tax applies to their sales of fixtures.

1521 (b)(2)(B)(2) Measure of Tax

(a) In General, if the contract states the sale price at which the fixture is sold, tax applies to that price. If the contract does not state the sale price of the fixture, the sale price shall be deemed to be the cost price of the fixture to the contractor.

(b) Determining Cost Price. If the contractor purchases the fixtures in a completed condition, the cost price is deemed to be the sale price of the fixture to him or her and shall include any manufacturer's excise tax or import duty imposed with respect to the fixture prior to its sale by the contractor.

If the contractor is the manufacturer of the fixture, the cost price is deemed to be the price at which similar fixtures in similar quantities ready for installation are sold by him or her to other contractors.

(If neither of these sections fall within the general operating framework of Drew Solar, LLC, the Regulation goes further into other tests that can be applied to determine the sales price (which is applicable to sales and use tax).

Sales Tax/Point of Sale Conclusions:

1. PV is fixtures under Sales and Use Tax Law.
2. The Construction Contractor is the retailer of fixtures.
3. The retailer (Construction Contractor) is responsible for reporting and paying sales and use tax to the State of California
4. Where the Construction Contractor (retailer) is also the manufacturer, there are various methods of determining the sale price.
5. It is important that the contract between the Construction Contractor and Drew Solar, LLC clearly separate labor, materials and fixtures.
6. The Construction Contractor can apply for and receive a Job Site Sub-Permit from the State Board of Equalization, thus allowing the maximum financial benefit (sales and use taxes) to be allocated to the County of Imperial.

Sales and Use Tax Designated for the County of Imperial:

In total, the County of Imperial would receive a total of 2.5% of the cost or value of tangible personal property sold within the County. More specifically, the County will receive 2.5% of the cost or value of the photovoltaic panels installed on projects within its jurisdiction. Keep in mind that the sales tax rate in Imperial County is 8.00%. The following is a list of the breakdown of how the County receives 2.5%:

1: 1.00% local sales tax for County General Fund

2: .50% local health programs

3: .50% local public safety funding

4: .50%* Measure D Transportation Projects

* Measure D is a locally approved Transportation Funding in Imperial County. It is represented by a ½ of 1% additional tax placed upon taxable sales originating within the County. About 2/3 of the funds received are placed into a pool that is used for regional transportation projects throughout the region (across the seven cities) while the other 1/3 is available directly to the County of Imperial for transportation projects. Measure D is in addition to the .25% that is included as part of the general 1.00% sales tax listed above.

In terms of application to the Drew Solar, LLC, if the County of Imperial were to require as part of the Conditions of Approval (or similar project governing document) that the site location be designated as the "Point of Sale", the County of Imperial (and region through Measure D) will be the beneficiary of $1.31 million in sales tax over the construction period (Years 1-2). Drew Solar, LLC has indicated in the information provided to Development Management Group, Inc. that this in their intent. It is included in our analysis and will be part of our recommendations.

It is projected that the County of Imperial (and associated regional taxing agencies) will garner approximately $8.92 million in gross revenues (sales and property taxes) over the life of the project (Years 1-30). The accepted multiplier for dollars generated (and spent) by local governments is 1.6618 which mean that the overall economic impact of the tax revenue received by the County of Imperial and other taxing organizations is approximately $14.82 million over the thirty (30) year life of the project.

14. Impacts of Agriculture: Imperial County Economy (Economic and Jobs) (Exhibits F-L)

Exhibits F, G and H articulate the economic impacts of agriculture on the Imperial County economy based on the crop history on the site itself. Exhibit F calculates that over the last five years, an average of $912,025 of crops have been produced on the subject site. The crops vary significantly from year to year and include field/grass crops. Next, using the County of Imperial Agriculture Commission Crop Reports, we have calculated that over the last twenty (20) years, crop production (valley wide) has increased by an average of 4.57% per year. This figure (and calculation) is shown on Exhibit G.

Next, the thirty-year projected economic impact of agriculture (on the subject site) is calculated as Exhibit H. Utilizing the four-year site average as the Year 1 figure while applying an average increase of 4.57% annually and the RIMS II economic multiplier of 1.4269, the projected economic impact of agriculture on the subject site on the County economy is estimated to be $80.34 million over a thirty (30) year period.

The next portion of the analysis is to determine the impact on jobs as a result of the potential conversion of the subject property from its current use to solar energy production. Agriculture production has historically been the economic engine that drives the Imperial Valley. As of 3Q2018 it was estimated that 11.23% of the overall workforce was directly employed in agriculture (7,130 workers out of 60,100 that were employed). The mean hourly wage of all employees engaged in agriculture was reported to be $12.46. With a 30% benefit allowance, the estimated total average wage is about $16.20 per hour. Additional information regarding the agriculture industry is scheduled as part of Exhibit F.

Development Management Group, Inc. completed a potential comparison of agriculture use to a potential solar energy production use. The first model (Exhibit G) utilizes the concept of the "average agriculture use" meaning we modeled what the 763 acres would look like in terms of employment if it were producing a proportional mix all agriculture and livestock products in line with the 2017 Imperial County Agriculture Crop and Livestock Report.

Exhibit J (utilizing 2018 dollars) shows if the subject property were the "average farm" in the Imperial Valley with 763 production acres, it would likely employ 10.24 full-time equivalent employees based on the County average of about 1.34 per 100 acres. The average wage (all inclusive) of $33,692 would generate about $345,116 in annual payroll.

The economic multiplier for farming/agriculture wages is 1.5187. Therefore, the economic impact of the payroll is expected to be about $524,128 in the subject year. In terms of overall jobs, the economic multiplier for agriculture jobs is 1.396 meaning that for each job directly tied to agriculture there is approximately .3960 (or 4/10) of a job elsewhere in the economy. Therefore, if the subject site were the "average farm" in the Imperial Valley, we estimate that such farm would generate a total (direct and indirect) of 14.30 full-time equivalent jobs.

Exhibit K provides an analysis of the job and wage creation based on the farming history of the subject property. For purposes of analysis (and based on research) about 763 acres of the land has historically been used for hay/grass crops. The project site generates a total of about 5.5 total direct jobs and a payroll of 185,306 (year 1).

Applying the appropriate economic multipliers, the total jobs projected within the region as a result of agriculture operations is 7.68 (FTE) with payroll impact of $281,424.

The next model (Exhibit L) contemplates the payroll and labor (employment) impacts of the proposed use of the subject site for solar energy generation. The figures are significantly skewed in the first two years due to construction of the facility as it is anticipated that there will be 190 full-time equivalent jobs generated. This carries a jobs multiplier of 1.3223 multiplier. In terms of the overall impact of the wages paid to construction workers, the construction of the facility could have a $26.64 million impact on the regional economy during the first two years.

At build-out, the facility is reported by the project proponent to have four (4) permanent jobs. The anticipated payroll for the 4 positions at build-out is expected to be about $331,000 annually (Year 2 numbers). When calculating multipliers (1.6907 for utility related jobs) it is expected that the total economic impact on the regional economy from operational payroll will be about $559,000. In terms of the impact of the actual jobs (utilizing 2.4487 as a multiplier for utility jobs) it is anticipated that the region will experience 9.79 FTE jobs as a result of the development and operation of the proposed project.

Table 1 below graphically displays the comparisons for all of the exhibits presented and described.

Table 2

Comparison of Employment Impacts from Agriculture and Solar Uses

Item	***Historic Agriculture Use of Specific Site***	***Commercial Solar w/o Construction***	***Commercial Solar w/Construction***
Construction FTE*	0	0	190
Projected Direct Jobs	5.5	4	4
Projected Total Jobs **/***	7.68	9.79	9.79
Projected 20-Year Employment Impact	$7,561,974	$17,609,952	$44,254,297

*Construction FTE is total one-year equivalent

**Projected total jobs include both direct and indirect jobs based on RIMS II Modeling

*** Projected Total Jobs only include permanent jobs (average number of jobs over 20 years)

15. Fiscal Impact Upon the County of Imperial (Single Phase Development) Exhibits M-O

A Fiscal Impact Analysis was completed to determine if the revenues scheduled were sufficient for which to allow the County of Imperial to provide essential goods and services to the project site and the additional population within the County as a result of the construction and/or operation of the solar energy production facility. It is estimated that the County will receive a net of approximately $3.36 million in tax revenues over the thirty (30) year life of the project (net of $2.05 million in property tax revenue and $1.31 million in sales tax). This figure is a base figure for which to better understand the aggregate fiscal impacts of the proposed Drew Solar, LLC project on the County.

There are multiple ways of conducting a Fiscal Impact Analysis. DMG, Inc. has chosen to utilize the following assumptions/methodology:

1. Land in and of itself has very little call for service from the County of Imperial.
2. Persons employed (to construct, operate or secure) at the facility do require various general governmental services.
3. For purposes of evaluating the potential demand by persons for services, it is assumed that each full-time equivalent job (construction, operation or security) shall support an average countywide household size of 3.59 persons (meaning the employee and an additional 2.59 persons).
4. There is insufficient data to determine the level of specific police and fire services that may be required to service the site. A survey of the four counties in Southern California (Imperial, Riverside, San Bernardino and Kern) that do or may host a majority of the commercial solar energy production shows that there is not enough data to determine the number of calls for service for police or fire protection. Additionally, none of the outside counties has solar sites immediately proximal to an international border whereas the neighboring country is experiencing political, economic and public safety instability that may impact the overall security of the project.

To generate a Fiscal Impact Analysis, a schedule of costs for County of Imperial General Government Services was generated as Exhibit M. This was extrapolated from Schedule 8 of the 2018-19 County of Imperial "Actual Estimated" Budget as presented (and adopted) by the County Board of Supervisors on September 18, 2018. Exhibit M shows approximately $368.44 million for General Government expenditures by the County of Imperial. This equates to approximately $1,968 per person (based on a population of 190,624).

For purposes of disclosure, it is estimated that about 66% of the County General Fund comes from outside sources (State and Federal Government) while 34% of the revenues come from within the County (taxes and fees). Development Management Group, Inc. recognizes that the revenue climate (at the State and Federal level) is ever changing and in order to provide a conservative analysis, it is expected that new projects into the County provide sufficient revenue for which to support 100% of the costs (without expectation of additional reimbursement from State or Federal sources).

Utilizing project level data, we have generated a schedule that calculates the estimated costs to provide General Government services as a result of the proposed project. For example, in year 1, it is estimated that the 190 construction employees and 4 operational employees will generate a total population demand for government services of 696.4 persons. This equates to a need for $1,346,125 to be generated in County revenues for which to support this number of people. To adjust for inflation through the life of the project, the annual cost per person to provide General Government Services has been increased by 2.6033% per annum. This represents the average Consumer Price Index Adjustment for the last thirty (30) years (1988-2017).

In total, it is estimated it will cost the County of Imperial approximately $2.56 million over the thirty (30) year life of the project for which to provide General Government Services to the employees and their families/dependents. These calculations are found on Exhibit N.

Exhibit O provides a comparison on a year by year basis of the anticipated revenues to the County of Imperial as a result of the project and compares it to the anticipated expense to provide General Government Services to the employees and their families/dependents. The exhibit accounts for the approximately 2.5% of sales tax that is anticipated to be received along with an allocation of (approximately) 26% of the overall property taxes paid being available to provide General Government Services. It should be noted that a majority of property taxes paid go to taxing agencies other than the County of Imperial.

Analysis of Exhibit O shows that the Drew Solar, LLC will produce enough income in all years (construction and operation) to pay for the services needed by the people constructing and operating the facility. In fact, by the end of Year 30, there is an anticipated surplus of approximately $802,000. Essentially this means that the project does create sufficient local tax revenue (in the form of net to the County of Imperial property tax and sales & use tax) to support the level of services anticipated to be needed by the persons constructing and operating the facility.

16. Statement Regarding Urban Decay (as a Result of Drew Solar, LLC Energy Center)

The State CEQA Guidelines discuss and define the parameters for which the consideration of socioeconomic impacts should be included in an environmental evaluation. State CEQA Guidelines Section 15131 states that "economic or social information may be included in an EIR or may be presented in whatever form the agency desires." Section 15131(a) of the Guidelines states that "economic or social effects of a project shall not be treated as significant effects on the environment." An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus on the analysis shall be on the physical changes." State CEQA Guidelines Section 15131(b) also state that "economic or social effects of a project may be used to determine the significance of physical changes caused by the project." One example that has been used by others has been the physical division of a community if rail lines were installed thereby bisecting the community. It is possible that the impacts upon the community could be measured.

In recent years, California Courts have generally defined the term "urban decay" to mean the physical changes that a projects potential socioeconomic impacts could bring to other parts in a community. The case that brought the concept of urban decay to light is Bakersfield Citizens for Local Control v. City of Bakersfield (204) 124 Cal.App.4th 1184 in which the court set aside two EIR's for proposed Wal-Mart projects that would have been located less than five (5) miles from each other. This appears to be the first time the courts used the words "urban decay" rather than "blight". In essence, the courts ruled that the two (2) Wal-Mart projects could result in a chain reaction of store-closures and vacancies as a result of new retail growth that may or may not be supported by other changes in market conditions (i.e., the downtowns would become ghost towns because the Wal-Mart(s) moved the retail business away from the urban center).

Based on this case and work that DMG, Inc. (and others have completed relative to "urban decay" analysis), it appears that the core question to ask (and answer) are the following:

Would the construction of the Drew Solar, LLC at the proposed site result in substantial and adverse physical changes to surrounding areas (i.e., will the project cause such a shift in the marketplace that other portions of the community become visually blighted "urban decay"?

Commercial scale renewable energy projects (by their very nature) are built to generate power at a specific location to export it to another location for use by various consumers (residents and businesses). Each power generation facility is a stand-alone project that is built as a result of a contractual obligation (power purchase agreement) in which a power provider contracts with a power producer.

It can be argued that most (if not all) of the renewable power generation constructed in the Imperial Valley (Imperial County) over the last five years has been a direct result of action by the State of California Legislature commonly known as Renewable Portfolio Standard (RPS). The RPS has essentially created a new market or industry for renewable energy in the State of California.

It would appear as though power production (overall) is increasing faster than the general population which would create a situation on the surface whereby urban decay could be occurring elsewhere as a result of these new projects. This urban decay would be as a result of the new power projects coming on-line replacing other power generation sources.

DMG, Inc. concludes that said power generation facilities that are being replaced as a result of legislative action in California whereby it has been determined that the greater public good is being served by utilizing a larger percentage of renewable power generation sources (solar, wind and geothermal) than more traditional sources (namely coal and nuclear). This means that ***even if*** another non-renewable energy power generation facility in the Imperial Valley were being "put out of business" and the property were to become "visually blighted" that the decision of the legislature (again in which they determined the greater good for California is reached by a greater percentage of energy coming from renewable sources), that urban decay would not have occurred.

Further, the recent decision to close the San Onofre Nuclear Power Plant in North County San Diego means that a greater amount of overall power generation must be developed to replace the power that was being generated by that specific nuclear source.

We have further determined that the development of the Drew Solar, LLC WILL ***NOT*** cause physical blight (urban decay) because the facility is a stand-alone and will have its own contracts based on power purchase demand, meaning that there is not another commercial scale energy facility that will cease to operate as a result of the Drew Solar, LLC.

17. Recommendations Regarding Fiscal Impacts and Mitigation(s)

A. Development Management Group, Inc. recommends that the County of Imperial consider entering into a formal agreement that requires the project developer to provide certified (and independently audited) payroll records at the conclusion of the project to insure that craft hour estimates (provided by the developer) are accurate and to the extent that the actual craft hours exceeds the estimated craft hours that the County of Imperial is reimbursed for the cost of services needed to support the construction of the facility. If this is a mitigation measure that the County determines is viable, DMG, Inc. will assist the County in drafting the specific condition of approval appropriate to address this recommendation.

B. Development Management Group, Inc. recommends that the County of Imperial requires the applicant to have a qualified civil or traffic engineer calculate a) the average life of regional and surface streets from Interstate 8 and State Route 98 to the project site(s) b) the potential accelerated impact of street resurfacing based on the construction traffic (equipment and employees) over the first five (5) years of the project c) cost to resurface said streets d) calculate the proportional share for which Drew Solar, LLC should be responsible for as part of a direct mitigation payment to the County of Imperial prior to commencing construction. This recommendation is in the event that project construction will utilize surface streets outside of Interstate 8 and State Route 98.

C. Development Management Group, Inc. recommends that the County of Imperial require Drew Solar, LLC to enter into a specific cost reimbursement agreement for direct police and fire protection services whereas for each call made to the project site for such public safety services that the project is responsible for reimbursing the County of Imperial. Such agreement can be created using a "Contract Cities Service Rate" for both police (Sheriff) and fire protection services.

D. Development Management Group, Inc. recommends that the County of Imperial require Drew Solar, LLC to enter into a specific cost reimbursement agreement for direct judicial and prosecutory services whereas if a person(s) are tried in a court of law for potential crimes at the project site, that the project itself is required to reimburse the County for such costs.

E. Development Management Group, Inc. recommends that the County of Imperial require Drew Solar, LLC or any other landowner associated with the project sites (parcels) to enter into an agreement whereas the assessed land values shall increase by 2% per annum and non-solar improvements increase by 1% per annum irrespective of the Consumer Price Index or any other factor to insure that the County of Imperial and other regional taxing authorities receive the scheduled revenue contained within this analysis. Such agreement should contain a provision which prohibits said property owner(s) from appealing their assessed value for the duration of the project operation (or 30 years) whichever comes first. Agreement shall be in full compliance with Proposition 13 in all other aspects.

F. Development Management Group, Inc. recommends that the County of Imperial require the project developer through Conditions of Approval, Development Agreement or similar document to designate the project site as the "Point of Sale/Point of Use" in compliance with State Board of Equalization Regulation 1521 and file for a "Sales Tax Jobsite Sub-Permit for Construction Contractors" as outlined in State Board of Equalization Publication 28, Exhibit A.

G. Development Management Group, Inc. recommends that the County of Imperial enter into some type of agreement with the project proponent that recognizes the taxable material cost estimates contained in Exhibit A of this report and provides a formal guarantee (bond or otherwise) in order to provide greater certainty of these figures.

H. Development Management Group, Inc. recommends that the County of Imperial condition the project so that if solar energy generation equipment is replaced with new equipment after the original construction period (most likely for purposes of utilizing newer technology) that the project site again designated as the "Point of Sale/Point of Use" as to create an additional local tax funding source for the County of Imperial. This requirement is similar to Item E but extends said condition in such cases as a substantial portion of the solar equipment is "upgraded", "replaced" or “repowered”.

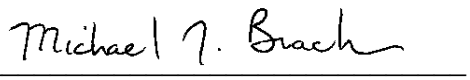
I. Development Management Group, Inc. recommends that the County of Imperial enter into some type of agreement with the project proponent that denotes that their non-solar improvements estimates are both correct and valid and that they (the project proponent) will guarantee that some minimum percentage of their proposed non-solar improvements will actually be placed into service. Information for this recommendation is contained in Exhibit B of this report.

J. Development Management Group, Inc. recommends that the County of Imperial receive a formal statement from the project proponent regarding local job creation specific to the permanent jobs. This will enable policy makers to better compare the job losses from agriculture land conversion to incoming jobs.

(the balance of this page intentionally left blank)

18. Certification

I certify that my engagement to prepare this report was not contingent upon developing or reporting predetermined results. The statements of fact contained herein and the substance of this report are based on public records, data provided by the Drew Solar, and other sources as described in the reference section of this report. This report reflects my personal, unbiased professional analyses, opinions and conclusions. If any of the underlying assumptions related to this report change after the date of this report (February 21, 2019), then the undersigned reserves the professional privilege to modify the contents and/or conclusions of this report.



Michael J. Bracken, Managing Partner
Development Management Group, Inc.
41-625 Eclectic Street, Suite D-2
Palm Desert, CA 92260
(760) 346-8820 / (760) 346-8887 (fax)
(760) 272-9136 (mobile)
Michael@dmgeconomics.com
www.dmgeconomics.com

Exhibit A

Construction/Operational Economic Impacts: (Years 1-30)

Drew Solar, LLC: Imperial County, California

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Short Term Economic Impacts										
Phase Size (MW)	100									
Construction Labor	$20,150,000									
Economic Multiplier Rate	1.3223									
Economic Impact of Labor (Annually)	$26,644,345									
Construction Materials	$60,450,000									
Local Purchase Materials (%)	0.05									
Projected Purchase of Materials Locally	$3,022,500									
Economic Multiplier Rate	1.44									
Local Impact (Annually)	$4,358,747									
Long Term Economic Impacts										
Land Lease Payments	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500
Economic Multiplier Rate	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608
Local Impact of Land Lease Payments	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523
Operational Materials (Ongoing)	$400,000	$420,000	$441,000	$463,050	$486,203	$510,513	$536,038	$562,840	$590,982	$620,531
Local Material Purchase (10%)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Local Purchases of Materials	$40,000	$42,000	$44,100	$46,305	$48,620	$51,051	$53,604	$56,284	$59,098	$62,053
Economic Multiplier Rate	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44
Local Impact of Material Purchases	$57,684	$60,568	$63,597	$66,776	$70,115	$73,621	$77,302	$81,167	$85,226	$89,487
Operational Labor (PV Facility)	$315,000	$330,750	$347,288	$364,652	$382,884	$402,029	$422,130	$443,237	$465,398	$488,668
Economic Multiplier Rate	1.691	1.691	1.691	1.691	1.691	1.691	1.691	1.691	1.691	1.691
Economic Impact of Labor (Annually)	$532,571	$559,199	$587,159	$616,517	$647,343	$679,710	$713,695	$749,380	$786,849	$826,192
Aggregate of Impacts (Annual)	$32,890,870	$1,917,290	$1,948,278	$1,980,816	$2,014,981	$2,050,854	$2,088,520	$2,128,070	$2,169,598	$2,213,201
Cumulative of Impacts (Cumulative)	$32,890,870	$34,808,160	$36,756,438	$38,737,254	$40,752,235	$42,803,089	$44,891,609	$47,019,679	$49,189,277	$51,402,478
	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Land Lease Payments	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500
Economic Multiplier Rate	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608
Local Impact of Land Lease Payments	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523
Operational Materials (Ongoing)	$651,558	$684,136	$718,343	$754,260	$791,973	$831,571	$873,150	$916,807	$962,648	$1,010,780
Local Material Purchase (10%)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Local Purchases of Materials	$65,156	$68,414	$71,834	$75,426	$79,197	$83,157	$87,315	$91,681	$96,265	$101,078
Economic Multiplier Rate	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44
Local Impact of Material Purchases	$93,961	$98,659	$103,592	$108,772	$114,210	$119,921	$125,917	$132,213	$138,823	$145,765
Operational Labor (PV Facility)	$513,102	$538,757	$565,695	$593,979	$623,678	$654,862	$687,605	$721,986	$758,085	$795,989
Economic Multiplier Rate	1.691	1.691	1.691	1.691	1.691	1.691	1.691	1.691	1.691	1.691
Economic Impact of Labor (Annually)	$867,501	$910,876	$956,420	$1,004,241	$1,054,453	$1,107,176	$1,162,535	$1,220,661	$1,281,694	$1,345,779
Aggregate of Impacts (Annual)	$2,258,985	$2,307,058	$2,357,535	$2,410,536	$2,466,186	$2,524,620	$2,585,974	$2,650,397	$2,718,041	$2,789,067
Cumulative of Impacts (Cumulative)	$53,661,463	$55,968,521	$58,326,056	$60,736,592	$63,202,779	$65,727,398	$68,313,372	$70,963,769	$73,681,810	$76,470,876
	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Land Lease Payments	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500	$953,500
Economic Multiplier Rate	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608	1.3608
Local Impact of Land Lease Payments	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523	$1,297,523
Operational Materials (Ongoing)	$1,061,319	$1,114,385	$1,170,104	$1,228,610	$1,290,040	$1,354,542	$1,422,269	$1,493,383	$1,568,052	$1,646,454
Local Material Purchase (10%)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Projected Local Purchases of Materials	$106,132	$111,439	$117,010	$122,861	$129,004	$135,454	$142,227	$149,338	$156,805	$164,645
Economic Multiplier Rate	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44
Local Impact of Material Purchases	$153,053	$160,705	$168,741	$177,178	$186,037	$195,338	$205,105	$215,361	$226,129	$237,435
Operational Labor (PV Facility)	$835,789	$877,578	$921,457	$967,530	$1,015,906	$1,066,702	$1,120,037	$1,176,039	$1,234,841	$1,296,583
Economic Multiplier Rate	1.691	1.691	1.691	1.691	1.691	1.691	1.691	1.691	1.691	1.691
Economic Impact of Labor (Annually)	$1,413,068	$1,483,721	$1,557,908	$1,635,803	$1,717,593	$1,803,473	$1,893,646	$1,988,329	$2,087,745	$2,192,132
Aggregate of Impacts (Annual)	$2,863,644	$2,941,950	$3,024,171	$3,110,504	$3,201,153	$3,296,334	$3,396,275	$3,501,212	$3,611,397	$3,727,090
Cumulative of Impacts (Cumulative)	$79,334,520	$82,276,470	$85,300,641	$88,411,145	$91,612,297	$94,908,631	$98,304,906	$101,806,118	$105,417,515	**$109,144,605**

Notes:

Phasing is estimate based on DMG, Inc. research and information by Drew Solar, LLC

Land Lease Payments estimated at stabilized rate (no annual adjustment)

Material Purchases estimated to increase by 5% per annum

Operational Labor estimated to increase by 5% per annum

Multipliers based on RIMS II, Type 1 Categories 6, 7 & 48

Exhibit B

Governmental Revenues: (Years 1-30)

Drew Solar, LLC (Imperial County, California)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Governmental Revenues										
Construction Phase										
Construction Materials (Total Amount)	$60,450,000									
Based 1% Local Sales Tax	$604,500									
Public Health Allocation of Sales Tax .50%	$302,250									
Public Safety Allocation of Sales Tax .50%	$302,250									
Transportation-Regional Measure D Sales Tax (.50%) 33% to County	$99,743									
Total Sales Taxes Collected by State for Benefit of County	$1,308,743									
Property Taxes (During Construction and Operation)										
Current Assessed Valuation	$9,535,000	$9,725,700	$9,920,214	$10,118,618	$10,320,991	$10,527,410	$10,737,959	$10,952,718	$11,171,772	$11,395,208
Sub-Station (Non-Solar) Assessed Valuation	$4,000,000	$4,040,000	$4,080,400	$4,121,204	$4,162,416	$4,204,040	$4,246,081	$4,288,541	$4,331,427	$4,374,741
Improvements (Non-Solar) Assessed Valuation	$7,000,000	$7,070,000	$7,140,700	$7,212,107	$7,284,228	$7,357,070	$7,430,641	$7,504,947	$7,579,997	$7,655,797
Assessed Valuation of Improvements	$11,000,000	$11,110,000	$11,221,100	$11,333,311	$11,446,644	$11,561,111	$11,676,722	$11,793,489	$11,911,424	$12,030,538
Total Estimated Assessed Valuation	$20,535,000	$20,835,700	$21,141,314	$21,451,929	$21,767,635	$22,088,521	$22,414,680	$22,746,207	$23,083,196	$23,425,746
Projected Annual Amount of Property Taxes Paid to County	$205,350	$208,357	$211,413	$214,519	$217,676	$220,885	$224,147	$227,462	$230,832	$234,257
	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Property Taxes (During Construction and Operation)										
Current Assessed Valuation	$11,623,112	$11,855,574	$12,092,686	$12,334,539	$12,581,230	$12,832,855	$13,089,512	$13,351,302	$13,618,328	$13,890,695
Sub-Station (Non-Solar) Assessed Valuation	$4,418,489	$4,462,673	$4,507,300	$4,552,373	$4,597,897	$4,643,876	$4,690,315	$4,737,218	$4,784,590	$4,832,436
Improvements (Non-Solar) Assessed Valuation	$7,732,355	$7,809,678	$7,887,775	$7,966,653	$8,046,319	$8,126,783	$8,208,051	$8,290,131	$8,373,032	$8,456,763
Assessed Valuation of Improvements	$12,150,843	$12,272,352	$12,395,075	$12,519,026	$12,644,216	$12,770,659	$12,898,365	$13,027,349	$13,157,622	$13,289,198
Total Estimated Assessed Valuation	$23,773,955	$24,127,926	$24,487,761	$24,853,565	$25,225,446	$25,603,513	$25,987,877	$26,378,651	$26,775,950	$27,179,893
Projected Annual Amount of Property Taxes Paid to County	$237,740	$241,279	$244,878	$248,536	$252,254	$256,035	$259,879	$263,787	$267,760	$271,799
	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Property Taxes (During Construction and Operation)										
Current Assessed Valuation	$14,168,508	$14,168,508.42	$14,310,194	$14,453,295	$14,597,828	$14,743,807	$14,891,245	$15,040,157	$15,190,559	$15,342,464
Sub-Station (Non-Solar) Assessed Valuation	$4,880,760	$4,929,568	$4,978,863	$5,028,652	$5,078,939	$5,129,728	$5,181,025	$5,232,836	$5,285,164	$5,338,016
Improvements (Non-Solar) Assessed Valuation	$8,541,330	$8,626,744	$8,713,011	$8,800,141	$8,888,143	$8,977,024	$9,066,794	$9,157,462	$9,249,037	$9,341,527
Assessed Valuation of Improvements	$13,422,090	$13,556,311	$13,691,874	$13,828,793	$13,967,081	$14,106,752	$14,247,819	$14,390,298	$14,534,201	$14,679,543
Total Estimated Assessed Valuation	$27,590,599	$27,724,820	$28,002,068	$28,282,089	$28,564,910	$28,850,559	$29,139,064	$29,430,455	$29,724,759	$30,022,007
Projected Annual Amount of Property Taxes Paid to County	$275,906	$277,248	$280,021	$282,821	$285,649	$288,506	$291,391	$294,305	$297,248	$300,220
Total Projected Sales Taxes to the County of Imperial	**$1,308,743**									
Total Projected Gross Property Taxes to County	***$7,612,158***									
Total Projected Gross Income to the County of Imperial	***$8,920,900***									
Notes:										
1. Current Valuation is zero because land is owned by governmental entity (Imperial Irrigation District), Valuation Adjusted to $12,500 Per Acre (10 CAP)										
2. Construction based on 9 months total (100 MW facility)										
3. Non-Solar Improvements (Per Section 73 of R&T Code) include mix of fencing, O&M building, substation and gen-tie										
4. Non-Solar Improvements scheduled to increase in value 1% per year pursuant to DMG, Inc. Guidance Memorandum dated 2/22/12										

Exhibit C

County of Imperial Taxing Organization Benefit Chart

Drew Solar, LLC: Imperial County, California

Taxing Entity	*Tax Percentage*	*Year 1*	*Year 2*	*Year 3*	*Year 4*	*Year 5*	*Year 6*	*Year 7*	*Year 8*	*Year 9*	*Year 10*	*Total (Years 1-10)*		
Standard Tax Allocation Land (1%)		$9,535,000	$9,725,700	$9,920,214	$10,118,618	$10,320,991	$10,527,410	$10,737,959	$10,952,718	$11,171,772	$11,395,208			
Non-Solar Improvements		$11,000,000	$11,110,000	$11,221,100	$11,333,311	$11,446,644	$11,561,111	$11,676,722	$11,793,489	$11,911,424	$12,030,538			
Total		$20,535,000	$20,835,700	$21,141,314	$21,451,929	$21,767,635	$22,088,521	$22,414,680	$22,746,207	$23,083,196	$23,425,746			
Base Level Property Tax Estimate		$205,350	$208,357	$211,413	$214,519	$217,676	$220,885	$224,147	$227,462	$230,832	$234,257	$2,194,899		
County of Imperial-General Fund	0.36439363	$74,828	$75,924	$77,038	$78,169	$79,320	$80,489	$81,678	$82,886	$84,114	$85,362	$799,807		$7,694,504
County General Fund- Net of ERAF	0.19677256	$40,407	$40,999	$41,600	$42,212	$42,833	$43,464	$44,106	$44,758	$45,421	$46,095	$431,896		
County Library	0.01375738	$2,825	$2,866	$2,908	$2,951	$2,995	$3,039	$3,084	$3,129	$3,176	$3,223	$30,196		
Fire Protection	0.05593520	$11,486	$11,654	$11,825	$11,999	$12,176	$12,355	$12,538	$12,723	$12,912	$13,103	$122,772		
Total County Property Tax Income (Net)		$54,719	$55,520	$56,334	$57,162	$58,003	$58,858	$59,727	$60,611	$61,509	$62,421	$584,864		

Taxing Entity	*Tax Percentage*	*Year 11*	*Year 12*	*Year 13*	*Year 14*	*Year 15*	*Year 16*	*Year 17*	*Year 18*	*Year 19*	*Year 20*	*Total (Years 11-20)*		
Standard Tax Allocation Land (1%)		$11,623,112	$11,855,574	$12,092,686	$12,334,539	$12,581,230	$12,832,855	$13,089,512	$13,351,302	$13,618,328	$13,890,695			
Non-Solar Improvements		$12,150,843	$12,272,352	$12,395,075	$12,519,026	$12,644,216	$12,770,659	$12,898,365	$13,027,349	$13,157,622	$13,289,198			
Total		$23,773,955	$24,127,926	$24,487,761	$24,853,565	$25,225,446	$25,603,513	$25,987,877	$26,378,651	$26,775,950	$27,179,893			
Base Level Property Tax Estimate		$237,740	$241,279	$244,878	$248,536	$252,254	$256,035	$259,879	$263,787	$267,760	$271,799	$2,543,945		
County of Imperial-General Fund	0.36439363	$86,631	$87,921	$89,232	$90,565	$91,920	$93,298	$94,698	$96,122	$97,570	$99,042	$926,997		
County General Fund- Net of ERAF	0.19677256	$46,781	$47,477	$48,185	$48,905	$49,637	$50,381	$51,137	$51,906	$52,688	$53,483	$500,579		
County Library	0.01375738	$3,271	$3,319	$3,369	$3,419	$3,470	$3,522	$3,575	$3,629	$3,684	$3,739	$34,998		
Fire Protection	0.05593520	$13,298	$13,496	$13,697	$13,902	$14,110	$14,321	$14,536	$14,755	$14,977	$15,203	$142,296		
Total County Property Tax Income (Net)		$63,349	$64,293	$65,251	$66,226	$67,217	$68,224	$69,249	$70,290	$71,349	$72,425	$677,873		

Taxing Entity	*Tax Percentage*	*Year 21*	*Year 22*	*Year 23*	*Year 24*	*Year 25*	*Year 26*	*Year 27*	*Year 28*	*Year 29*	*Year 30*	*Total (Years 21-30)*		
Standard Tax Allocation Land (1%)		$14,168,508	$14,451,879	$14,740,916	$15,035,734	$15,336,449	$15,643,178	$15,956,042	$16,275,163	$16,600,666	$16,932,679			
Non-Solar Improvements		$13,422,090	$13,556,311	$13,691,874	$13,828,793	$13,967,081	$14,106,752	$14,247,819	$14,390,298	$14,534,201	$14,679,543			
Total		$27,590,599	$28,008,190	$28,432,791	$28,864,528	$29,303,530	$29,749,930	$30,203,861	$30,665,460	$31,134,866	$31,612,222			
Base Level Property Tax Estimate		$275,906	$280,082	$284,328	$288,645	$293,035	$297,499	$302,039	$306,655	$311,349	$316,122	$2,955,660		
County of Imperial-General Fund	0.36439363	$100,538	$102,060	$103,607	$105,181	$106,780	$108,407	$110,061	$111,743	$113,453	$115,193	$1,077,024		
County General Fund- Net of ERAF	0.19677256	$54,291	$55,112	$55,948	$56,797	$57,661	$58,540	$59,433	$60,341	$61,265	$62,204	$581,593		
County Library	0.01375738	$3,796	$3,853	$3,912	$3,971	$4,031	$4,093	$4,155	$4,219	$4,283	$4,349	$40,662		
Fire Protection	0.05593520	$15,433	$15,666	$15,904	$16,145	$16,391	$16,641	$16,895	$17,153	$17,415	$17,682	$165,325		
Total County Property Tax Income (Net)		$73,519	$74,632	$75,763	$76,914	$78,084	$79,273	$80,483	$81,713	$82,964	$84,236	$787,580		
Total Net Property Tax to County	**$2,050,317**													

Notes:

1. Allocations for TRA's 57-003 & 74-005
2. Based on Even Development Principle with 57-003 (61%) and 74-005 (39%)
3. Base Figures (Standard Tax Allocation for Land and Non-Solar Improvements) are in Projected Property Tax Generation (rather than Assessed Valuation)
4. ERAF reduces net to County (General Fund) by 46% (County nets 54%)
5. Land is scheduled to increase by 2% per annum, Non-solar improvements are scheduled to increase by 1% per annum per DMG, Inc. Guidance Memorandum of 2/22/12 beginning in Year 3

Exhibit D
County of Imperial Taxing Organization Benefit Chart
Consolidated Property Tax Revenues (by allocation) Years 1-30
Drew Solar, LLC: Imperial County, California

Taxing Entity	Est. Total Property Tax Generation	Approximate % to Taxing Entity	Total Property Taxes
County of Imperial-General Fund (Gross)	$7,694,504	0.36439363	$2,803,828
County of Imperial-General Fund (Net)*	$7,694,504	0.19677256	$1,514,067
County Library*	$7,694,504	0.01375738	$105,856
Fire Protection*	$7,694,504	0.0559352	$430,394
Total Net Property Taxes to County	$2,050,317		

Notes:
1. County General Fund Amounts are Reduced by 46% to Account for ERAF (Education Revenue Augmentation Fund)
2. Total Property Tax Generation taken from Exhibit B
3. Tax Rate Area Schedules 57-003 & 74-005

* Denotes those items that are part of funding available to pay for General County Services

Exhibit E
Local Taxing Jurisdiction Tax Allocation Estimate
Drew Solar, LLC (Imperial County, California)

Local Taxing Jurisdiction Tax Allocation Estimate

	TRA 57-003 (61%)	Percentage	Amount
	Allocated Base Tax Amount (Exhibit D)	100%	$5,616,988
1	County General Fund*	0.37392363	$2,100,325
2	County Library	0.01411722	$79,296
3	Fire Protection	0.05739811	$322,404
4	Heffernan Hospital	0.04669554	$262,288
5	Imperial Community College	0.09255144	$519,860
6	Calexico Unified	0.39302974	$2,207,643
7	Children's Institution Tuition	0.00129512	$7,275
8	Physically Handicapped	0.00685513	$38,505
9	Trainable Severely Mentally Retarded	0.00252573	$14,187
10	Juvenile Hall	0.00042771	$2,402
11	Aurally Handicapped	0.00332982	$18,704
12	County Superintendent of Schools	0.00497982	$27,972
13	Development Center	0.00287099	$16,126
	Add-On Allocations (Special Taxes Voter Approved)		
14	Calexico Unified Bonds	0.06400	$252,764
15	Calexico USD BD 2016A	0.05400	$303,317
16	Calexico USD 2017 REF BD	0.03670	$206,143
17	Imperial Community College Bond 2004	0.04500	$252,764

	TRA 74-005 (31%)	Percentage	Amount
	Allocated Base Tax Amount (Exhibit D)	100%	$2,077,516
1	County General Fund*	0.34948774	$726,066
2	County Library	0.01319456	$27,412
3	Fire Protection	0.05364707	$111,453
4	Heffernan Hospital	0.04364394	$90,671
5	Central Union High	0.18156908	$377,213
6	Imperial Community College	0.08650316	$179,712
7	McCabe Union	0.25112643	$521,719
8	Children's Institution Tuition	0.00121054	$2,515
9	Physically Handicapped	0.00640705	$13,311
10	Trainable Severely Mentally Retarded	0.00236059	$4,904
11	Juvenile Hall	0.00039973	$830
12	Aurally Handicapped	0.00311224	$6,466
13	County Superintendent of Schools	0.00465447	$9,670
14	Development Center	0.00268340	$5,575
	Add-On Allocations (Special Taxes Voter Approved)		
15	CUHSD 1993 Bond & Int	0.01054	$21,897
16	CUHSD 2016 Bond & Int	0.02961	$61,515
17	CUHSD 2016 REF BD & Int	0.01199	$24,909
18	McCabe Union BD 2014 A	0.0232	$48,198
19	McCabe Union BD 2014 B	0.0036	$7,479
20	Imperial Community College Bond 2004	0.045	$93,488

Projected Total Benefit to Local Taxing Jurisdictions (Combined TRA)

1	County General Fund*	$2,826,391
2	County Library	$106,708
3	Fire Protection	$433,857
4	Heffernan Hospital	$352,959
5	Imperial Community College	$699,572
6	Calexico Unified	$2,207,643
7	Children's Institution Tuition	$9,790
8	Physically Handicapped	$51,816
9	Trainable Severely Mentally Retarded	$19,091
10	Juvenile Hall	$3,233
11	Aurally Handicapped	$25,169
12	County Superintendent of Schools	$37,641
13	Development Center	$21,701
14	Central Union High	$377,213
15	McCabe Union	$521,719
	Total Estimated Property Taxes*	**$7,694,504**

Notes:

1 Project is deemed to be 61% within TRA 57-003 and 31% within TRA 74-005
2 Tax benefit allocation formula based on equal development distribution principle (project assessed value spread evenly over all parcels)
3 County General Fund allocation is reduced by 46% for Educational Revenue Augmentation Fund Allocation (County is Negative ERAF Jurisdiction and ERAF funds reallocated by State of California directly)
4 Shown in full 30 years, though tax issue/bonds likely expire prior to end of 30-year life of Drew Solar, LLC Project(s)
5 Total Base Level Tax Generation (Exhibit D): $ 7,694,504
* Includes All-Ons

Exhibit F

Economic Value to County of Imperial Agriculture of Subject Site Drew Solar, LLC: Imperial County, California)

Drew Solar, LLC: Imperial County, CA

#	Crop	2013			2014			2015			2016			2017		
		Acres	Price	Value	Acres	Price	Value	Acres	Price	Value	Acres	Price	Value	Acres	Price	Value
1	Bermuda Grass	293	$1,370.20	$401,468.60	259	$1,625.66	$421,046	225	$1,251.21	$281,522	225	$1,067.12	$240,102	225	$971.80	$218,655
2	Oats	0	$0	$0	160	$1,264.00	$202,240	0	$0	$0	0	$0	$0	0		$0
3	Bermuda Seed	0	$0	$0	150	$1,675.52	$251,328	150	$1,454.34	$218,151	230	$964.69	$221,879	150	$1,245.44	$186,816
4	Alfalfa	63	1570.58	$98,946.54	177	$1,799.33	$318,481	143	$1,198.33	$171,361	291	$961.60	$279,826	371	$981.92	$364,292
5	Wheat	0	$0	$0.00	0	$0	$0	160	$944.70	$151,152	0	$0	$0	0	$0	$0
6	Alfalfa Seed	0	$0	$0.00	0	$0	$0	68	$2,132.45	$145,007	0	$0	$0	0	$0	$0
7	Sugar Beets	160	2424.06	$387,849.60	0	$0	$0	0	$0	$0	0	$0	$0	0	$0	$0
8	Fallow	246	$0	$0	16	$0.00	$0	16	$0.00	$0	16	$0	$0	16	$0	$0
	Total	762	N/A	$888,264.74	762	N/A	$1,193,095	762	N/A	$967,193	762	N/A	$741,806	762	N/A	$769,763
Four Year Average Output			***$912,025***													

Notes:

A Crops shown in split quantities are divided evenly between two (rounding one if odd number)

B Oat price estimated from "Misc. Field Crops" from Year 2014 Crop Report

Source:

A 2014-2017 County of Imperial Agriculture Commission Crop Reports

Exhibit G

Calculation of Value Increase Factor for Agriculture Production in Imperial County

Drew Solar, LLC: Imperial County, CA

	Total (All) Crops		Field/Grass Crops				Vegetable Crops			
Year	Gross Crop Value (in millions of $)	Yr/Yr Increase/ Decrease %	Field/Grass Crop Value (in millions of $)	Field/Grass Crop Acreage (in thousands of acres)	Average Crop/Acre (in millions of $)	Increase/ Decrease % Yr/Yr	Vegetable Crop Value (in millions of $)	Vegetable Crop Acreage (in thousands of acres)	Average Crop/Acre (millions of $ per acre)	Increase/ Decrease % Yr/Yr
1993	$1,020.00	N/A	$268.01	404.2	$0.6631	N/A	$428.55	96	$4.46	N/A
1994	$954.53	-6.42%	$300.94	391.03	$0.7696	16.07%	$350.18	113.79	$3.08	-31.06%
1995	$1,010.00	5.81%	$267.20	401.2	$0.6660	-13.46%	$477.33	100.02	$4.77	55.08%
1996	$956.52	-5.30%	$308.75	429.76	$0.7184	7.87%	$385.41	109.05	$3.53	-25.94%
1997	$1,040.00	8.73%	$331.39	423.35	$0.7828	8.96%	$416.95	107.71	$3.87	9.53%
1998	$1,080.00	3.85%	$284.73	416.46	$0.6837	-12.66%	$486.18	103.62	$4.69	21.21%
1999	$1,050.00	-2.78%	$257.34	368.52	$0.6983	2.14%	$458.11	122.06	$3.75	-20.01%
2000	$919.60	-12.42%	$257.36	389.63	$0.6605	-5.41%	$363.10	103.55	$3.51	-6.57%
2001	$1,010.00	9.83%	$284.90	388.1	$0.7341	11.14%	$403.40	89.25	$4.52	28.90%
2002	$1,220.00	20.79%	$272.90	398.77	$0.6844	-6.78%	$556.19	90.44	$6.15	36.06%
2003	$1,070.00	-12.30%	$244.53	376.29	$0.6498	-5.04%	$442.93	94.6	$4.68	-23.87%
2004	$1,190.00	11.21%	$255.30	370.02	$0.6900	6.17%	$505.25	104.18	$4.85	3.58%
2005	$1,290.00	8.40%	$269.03	351.87	$0.7646	10.81%	$571.79	100.05	$5.72	17.84%
2006	$1,370.00	6.20%	$298.93	361.38	$0.8272	8.19%	$526.65	107.28	$4.91	-14.10%
2007	$1,370.00	0.00%	$308.75	352.16	$0.8767	5.99%	$558.02	100.3	$5.56	13.33%
2008	$1,680.00	22.63%	$482.59	412.34	$1.1704	33.49%	$675.24	116.58	$5.79	4.11%
2009	$1,450.00	-13.69%	$312.54	353.13	$0.8851	-24.38%	$690.31	114.01	$6.05	4.54%
2010	$1,600.00	10.34%	$360.14	352.76	$1.0209	15.35%	$809.13	115.5	$7.01	15.70%
2011	$1,960.00	22.50%	$518.26	365.02	$1.4198	39.07%	$903.96	109.8	$8.23	17.52%
2012	$1,950.00	-0.51%	$587.98	396.84	$1.4817	4.36%	$718.22	118.9	$6.04	-26.63%
2013	$2,160.00	10.77%	$470.46	332.73	$1.4139	-4.57%	$865.40	121.37	$7.13	18.04%
2014	$1,859.00	-13.94%	$530.85	332.59	$1.5961	12.88%	$723.26	122.28	$5.91	-17.05%
2015	$1,925.00	3.55%	$422.32	349.69	$1.2077	-24.33%	$805.02	121.28	$6.64	12.22%
2016	$2,063.00	7.17%	$381.18	333.76	$1.1421	-5.43%	$1,006.34	133.59	$7.53	13.49%
2017	$2,066.00	0.15%	$365.85	326.67	$1.1199	-1.94%	$1,018.76	128.77	$7.91	5.02%
Total Increase		***84.59%***				***78.49%***				***110.94%***
20-Yr Average Increase		***4.23%***				***3.92%***				***5.55%***
Forecast Value Increase based on average of total crop value, field/grass crops and vegetable crop:						**4.57%**				

Source: 1993-2017 County of Imperial Agriculture Commissioner Crop Reports

Exhibit H										
Thirty Year Projected Economic Impacts of Agriculture (Site Specific)										
Drew Solar, LLC: Imperial County, CA										
Item	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Projected Agriculture Production	$912,025	$953,705	$997,289	$1,042,865	$1,090,524	$1,140,361	$1,192,475	$1,246,971	$1,303,958	$1,363,549
Economic Multiplier Rate	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269
Projected Economic Impact	$1,301,368	$1,360,841	$1,423,031	$1,488,064	$1,556,069	$1,627,181	$1,701,543	$1,779,304	$1,860,618	$1,945,648
	Year 11	**Year 12**	**Year 13**	**Year 14**	**Year 15**	**Year 16**	**Year 17**	**Year 18**	**Year 19**	**Year 20**
Projected Agriculture Production	$1,425,863	$1,491,025	$1,559,165	$1,630,419	$1,704,929	$1,782,844	$1,864,320	$1,949,519	$2,038,613	$2,131,777
Economic Multiplier Rate	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269
Projected Economic Impact	$2,034,564	$2,127,544	$2,224,772	$2,326,444	$2,432,763	$2,543,940	$2,660,198	$2,781,769	$2,908,896	$3,041,833
	Year 21	**Year 22**	**Year 23**	**Year 24**	**Year 25**	**Year 26**	**Year 27**	**Year 28**	**Year 29**	**Year 30**
Projected Agriculture Production	$2,229,199	$2,331,074	$2,437,604	$2,549,002	$2,665,492	$2,787,305	$2,914,685	$3,047,886	$3,187,174	$3,332,828
Economic Multiplier Rate	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269	1.4269
Projected Economic Impact	$3,180,845	$3,326,209	$3,478,217	$3,637,171	$3,803,390	$3,977,205	$4,158,963	$4,349,028	$4,547,779	$4,755,612
Total Estimated Economic Impact	***$80,340,809***									
Annual Increases based on calculation found on Exhibit H (4.57%)										

Exhibit I

Impact of Agriculture Employment in Imperial County, California

Drew Solar, LLC: Imperial County, CA

Item	Figure	3Q18 # Emp	% of Ag Emp							
Total Population in County	190,624									
Total Workforce in County	74,500									
Current Number Employed	60,100									
Estimated Direct Employment in Agriculture	7,130									
Percentage of Total Employed Directly in Agriculture	11.86%									
Hourly Mean (Farm Labor)	$11.84	6,340	88.92%							
Hourly Mean (Farm Equipment Operators)	$12.45	210	2.95%							
Hourly Mean (1st Line Supervisors Farm/Ranch/Ag)	$20.08	150	2.10%							
Hourly Mean (Farm Equipment Mechanics)*	$16.67	80	1.12%							
Average Mean of Hourly Wages	$12.46									
Add on for Benefits (30% of Wage)	$3.74									
Total Estimated Average Wage for Agriculture	$16.20									
Year	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Projected Employees	7,130	7130	7130	7130	7130	7130	7130	7130	7130	7130
Average (Mean) of Hourly Wage	$12.46	$12.83	$13.22	$13.62	$14.02	$14.44	$14.88	$15.32	$15.78	$16.26
Add on for Benefits (30% of Wage)	$3.74	$3.85	$3.97	$4.08	$4.21	$4.33	$4.46	$4.60	$4.74	$4.88
Total Wage	$16.20	$16.68	$17.18	$17.70	$18.23	$18.78	$19.34	$19.92	$20.52	$21.13
Annualized Average (Mean) Wage with Benefits	$33,692	$34,703	$35,744	$36,816	$37,920	$39,058	$40,230	$41,437	$42,680	$43,960
Estimated Projected Payroll Agriculture	$240,222,819	$247,429,504	$254,852,389	$262,497,961	$270,372,899	$278,484,086	$286,838,609	$295,443,767	$304,307,080	$313,436,293
Aggregate of Payroll	$240,222,819	$487,652,323	$742,504,712	$1,005,002,672	$1,275,375,572	$1,553,859,658	$1,840,698,267	$2,136,142,034	$2,440,449,115	$2,753,885,407
RIMS II Impact of Employment (2.5357 Factor)	$364,826,396	$375,771,187	$387,044,323	$398,655,653	$410,615,322	$422,933,782	$435,621,795	$448,690,449	$462,151,163	$476,015,698
Aggregate of Total Payroll Impact with RIMS II Model	$364,826,396	$740,597,583	$1,127,641,906	$1,526,297,559	$1,936,912,881	$2,359,846,663	$2,795,468,458	$3,244,158,907	$3,706,310,070	$4,182,325,768
Year	**2028**	**229**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
Projected Employees	7130	7130	7130	7130	7130	7130	7130	7130	7130	7130
Average (Mean) of Hourly Wage	$16.75	$17.25	$17.76	$18.30	$18.85	$19.41	$19.99	$20.59	$21.21	$21.85
Add on for Benefits (30% of Wage)	$5.02	$5.17	$5.33	$5.49	$5.65	$5.82	$6.00	$6.18	$6.36	$6.55
Total Wage	$21.77	$22.42	$23.09	$23.79	$24.50	$25.24	$25.99	$26.77	$27.58	$28.40
Annualized Average (Mean) Wage with Benefits	$45,279	$46,637	$48,037	$49,478	$50,962	$52,491	$54,066	$55,687	$57,358	$59,079
Estimated Projected Payroll Agriculture	$322,839,381	$332,524,563	$342,500,300	$352,775,309	$363,358,568	$374,259,325	$385,487,105	$397,051,718	$408,963,269	$421,232,168
Aggregate of Payroll	$3,076,724,789	$3,409,249,351	$3,751,749,651	$4,104,524,960	$4,467,883,528	$4,842,142,853	$5,227,629,958	$5,624,681,676	$6,033,644,945	$6,454,877,113
RIMS II Impact of Employment (2.5357 Factor)	$490,296,169	$505,005,054	$520,155,205	$535,759,861	$551,832,657	$568,387,637	$585,439,266	$603,002,444	$621,092,517	$639,725,293
Aggregate of Total Payroll Impact with RIMS II Model	$4,672,621,936	$5,177,626,990	$5,697,782,195	$6,233,542,057	$6,785,374,714	$7,353,762,351	$7,939,201,617	$8,542,204,061	$9,163,296,578	$9,803,021,871

Notes:

1. Total Projected Employees not anticipated to increase nor decrease over period
2. Average (Mean) of Hourly Wage calculated with 3% annual increase
3. Add on for Benefits (30% of Base Year Wage) calculated with 3% annual increase
4. Based on 2,080 working hours annually
5. RIMS II Model shows that the real economic impact of agriculture payroll is 1.5187 of the actual payroll dollar
6. Aggregate Impact of Total Payroll with RIMS II shows the projected impact across entire regional economy
7. Over a 20 year period (2018-2037) it is projected that agriculture wages will have a $9.87 billion impact on the economy of Imperial County

Sources:

State Employment Development Department
Environics Analytics
RIMS II Economic Impact Model
Development Management Group, Inc.

Exhibit J

Projected Agriculture Impacts of Subject Site Drew Solar, LLC: Imperial County, California)

Statistical Impact (Based on Industry Average of All Agriculture Across County)

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total Acres of Production	531,099	531,099	531,099	531,099	531,099	531,099	531,099	531,099	531,099	531,099
Total Direct Employment in Agriculture in County	7,130	7,130	7,130	7,130	7,130	7,130	7,130	7,130	7,130	7,130
Projected Employees Per Acre	0.01342	0.01342	0.01342	0.01342	0.01342	0.01342	0.01342	0.01342	0.01342	0.01342
Projected Employees Per 100 Acres	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
Projected Employees Per 763 Acres	10.24	10.24	10.24	10.24	10.24	10.24	10.24	10.24	10.24	10.24
Average Wage Per Employee (Fully Burdened)	$33,692	$34,703	$35,744	$36,816	$37,921	$39,058	$40,230	$41,437	$42,680	$43,960
Projected Payroll for 2018/19	$345,116	$355,470	$366,134	$377,118	$388,431	$400,084	$412,087	$424,449	$437,183	$450,298
Projected RIMS II Payroll Factor	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187
Projected Total Impact of Payroll	$524,128	$539,852	$556,047	$572,729	$589,911	$607,608	$625,836	$644,611	$663,950	$683,868
Projected RIMS II Employment Factor	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396
Projected Total Jobs as Result of Ag on Site	14.30	14.30	14.30	14.30	14.30	14.30	14.30	14.30	14.30	14.30

Year	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Total Acres of Production	531,099	531,099	531,099	531,099	531,099	531,099	531,099	531,099	531,099	531,099
Total Direct Employment in Agriculture in County	7,130	7,130	7,130	7,130	7,130	7,130	7,130	7,130	7,130	7,130
Projected Employees Per Acre	0.01342	0.01342	0.01342	0.01342	0.01342	0.01342	0.01342	0.01342	0.01342	0.01342
Projected Employees Per 100 Acres	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
Projected Employees Per 80 Acres	10.24	10.24	10.24	10.24	10.24	10.24	10.24	10.24	10.24	10.24
Average Wage Per Employee (Fully Burdened)	$45,279	$46,638	$48,037	$49,478	$50,962	$52,491	$54,066	$55,688	$57,358	$59,079
Projected Payroll for 2018/19	$463,807	$477,722	$492,053	$506,815	$522,019	$537,680	$553,810	$570,425	$587,537	$605,163
Projected RIMS II Payroll Factor	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187
Projected Total Impact of Payroll	$704,384	$725,516	$747,281	$769,700	$792,791	$816,574	$841,072	$866,304	$892,293	$919,062
Projected RIMS II Employment Factor	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396
Projected Total Jobs as Result of Ag on Site	14.30	14.30	14.30	14.30	14.30	14.30	14.30	14.30	14.30	14.30

Total Projected Impact of Payroll (20 Years) w/RIMS II	**$14,083,516**
(Projection is Project Site of 746 acres historically (2014-2017) used for Agriculture Purposes)	
Average Projected Annual Direct Jobs from Site	10.24
Average Projected Annual Jobs w/RIMS II from Site	14.30

Notes:

2014-2017 Acreage Average Used for Base Year for Crop Production

Crop Production (for this example) Projected Stable

Total Direct Employees Projected Stable

Fully Burdened Wages Projected to Rise by 3% per Annum

Sources:

State Employment Development Department

Development Management Group, Inc.

United States Census Bureau (2006-2009 American Community Survey)

2014-2017 Imperial County Agriculture Crop and Livestock Reports

RIMS II Economic Impact Model

Exhibit K

Projected Agriculture Impacts of Subject Site (Drew Solar, LLC: Imperial County, California)

Based on Site Specific Research

Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Total Site Acres-Hay/Grass/Bermuda Crops	762	762	762	762	762	762	762	762	762	762
Allowance for Historic Fallowing	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4
Estimated Acres Farmed	609.6	609.6	609.6	609.6	609.6	609.6	609.6	609.6	609.6	609.6
Full Time Employees (Manager/1 Irrigation/1 Labor)	4	4	4	4	4	4	4	4	4	4
Projected Contract FTE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Projected Total Employees for Site	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Average Wage Per Employee (Fully Burdened)	$33,692	$34,703	$35,744	$36,816	$37,921	$39,058	$40,230	$41,437	$42,680	$43,960
Projected Payroll for 2018	$185,306	$190,865	$196,591	$202,489	$208,564	$214,820	$221,265	$227,903	$234,740	$241,782
Projected RIMS II Payroll Factor	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187
Projected Total Impact of Payroll	$281,424	$289,867	$298,563	$307,520	$316,745	$326,248	$336,035	$346,116	$356,500	$367,195
Projected RIMS II Employment Factor	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396
Projected Total Jobs as Result of Ag on Site	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68

Year	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Total Site Acres-Hay/Grass/Bermuda Crops	762	762	762	762	762	762	762	762	762	762
Allowance for Historic Fallowing	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4
Estimated Acres Farmed	610	609.6	609.6	609.6	609.6	609.6	609.6	609.6	609.6	609.6
Full Time Employees (Manager/2 Irrigation/2 Labor)	4	4	4	4	4	4	4	4	4	4
Projected Contract FTE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Projected Total Employees for Site	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Average Wage Per Employee (Fully Burdened)	$45,279	$46,638	$48,037	$49,478	$50,962	$52,491	$54,066	$55,688	$57,358	$59,079
Projected Payroll for 2018	$249,036	$256,507	$264,202	$272,128	$280,292	$288,701	$297,362	$306,283	$315,471	$324,935
Projected RIMS II Payroll Factor	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187
Projected Total Impact of Payroll	$378,211	$389,557	$401,244	$413,281	$425,679	$438,450	$451,603	$465,151	$479,106	$493,479
Projected RIMS II Employment Factor	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396
Projected Total Jobs as Result of Ag on Site	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68

Year	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Total Site Acres-Hay/Grass/Bermuda Crops	762	762	762	762	762	762	762	762	762	762
Allowance for Historic Fallowing	152	152	152	152	152	152	152	152	152	152
Estimated Acres Farmed	610	610	610	610	610	610	610	610	610	610
Full Time Employees (Manager/2 Irrigation/2 Labor)	4	4	4	4	4	4	4	4	4	4
Projected Contract FTE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Projected Total Employees for Site	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Average Wage Per Employee (Fully Burdened)	$60,851	$62,677	$64,557	$66,494	$68,489	$70,544	$72,660	$74,840	$77,085	$79,397
Projected Payroll for 2018	$334,683	$344,724	$355,065	$365,717	$376,689	$387,990	$399,629	$411,618	$423,967	$436,686
Projected RIMS II Payroll Factor	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187	1.5187
Projected Total Impact of Payroll	$508,283	$523,532	$539,238	$555,415	$572,078	$589,240	$606,917	$625,125	$643,878	$663,195
Projected RIMS II Employment Factor	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396	1.396
Projected Total Jobs as Result of Ag on Site	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68

Sources:

State Employment Development Department	Development Management Group, Inc.
United States Census Bureau	Imperial County Agriculture Crop and Livestock Report(s)
RIMS II Economic Impact Model	Confidential Interviews and Analysis with Industry Experts & Current Farming Professionals
Environics Analytics	

Simplified Calculations (Hay/Grass/Bermuda Crops):

1 Manager per farm operation

1 FT Irrigation/Crop Specialist per 350 acres (rounding up to highest FT)

1 Contract FTE (Harvesting) Per 466.67 Acres

Exhibit L

Projected Employment Impacts of Subject Site Drew Solar, LLC: Imperial County, California)

(Developed as Commercial Solar Energy Generation Facility)

Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Construction Craft Hours (Annual)	395486									
Number of FTE (1-Year) Labor Staff (2080 hours)	190									
Average Craft Pay Per Hour	$38.43									
Average Craft Fully Burdened Payroll Per Hour	$50.95									
Annualized Wage/Benefit Per Construction Emp.	$105,976									
Total Construction Wages/Benefits	$20,150,000									
Number of Projected Operational Employees	4	4	4	4	4	4	4	4	4	4
Operational Wage (inclusive of 35% benefits)	$315,000	$330,750	$347,288	$364,652	$382,884	$402,029	$422,130	$443,237	$465,398	$488,668
Total All Wages/Benefits	$20,465,000	$330,750	$347,288	$364,652	$382,884	$402,029	$422,130	$443,237	$465,398	$488,668
RIMS II Payroll Multiplier Construction Jobs	1.3223	1.3223	1.3223	1.3223	1.3223	1.3223	1.3223	1.3223	1.3223	1.3223
RIMS II Payroll Multiplier Utility Operation Jobs	1.6907	1.6907	1.6907	1.6907	1.6907	1.6907	1.6907	1.6907	1.6907	1.6907
RIMS II Jobs Multiplier Construction Jobs	1.3968	1.3968	1.3968	1.3968	1.3968	1.3968	1.3968	1.3968	1.3968	1.3968
RIMS II Jobs Multiplier Utility Operation Jobs	2.4487	2.4487	2.4487	2.4487	2.4487	2.4487	2.4487	2.4487	2.4487	2.4487
Projected Payroll in Region (Construction) w/Multiplier	$26,644,345	$0	$0	$0	$0	$0	$0	$0	$0	$0
Projected Payroll in Region (Utility Operation) w/Multiplier	$532,571	$559,199	$587,159	$616,517	$647,343	$679,710	$713,695	$749,380	$786,849	$826,192
Projected total Jobs (Construction) with Multiplier	265.58	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Projected total Jobs (Utility Operation) with Multiplier	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79
Total Projected Payroll (Complete Project) w/Multipliers	$27,176,916	$559,199	$587,159	$616,517	$647,343	$679,710	$713,695	$749,380	$786,849	$826,192
Total Projected Jobs (Complete Project) w/Multipliers	275.38	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79

Year	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Number of Projected Operational Employees	4	4	4	4	4	4	4	4	4	4
Operational Wage (inclusive of 35% benefits)	$513,102	$538,757	$565,695	$593,979	$623,678	$654,862	$687,605	$721,986	$758,085	$795,989
RIMS II Payroll Multiplier Utility Operation Jobs	1.6907	1.6907	1.6907	1.6907	1.6907	1.6907	1.6907	1.6907	1.6907	1.6907
RIMS II Jobs Multiplier Utility Operation Jobs	2.4487	2.4487	2.4487	2.4487	2.4487	2.4487	2.4487	2.4487	2.4487	2.4487
Projected Payroll in Region (Utility Operation) w/Multiplier	$867,501	$910,876	$956,420	$1,004,241	$1,054,453	$1,107,176	$1,162,535	$1,220,661	$1,281,694	$1,345,779
Projected total Jobs (Utility Operation) with Multiplier	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79
Total Projected Payroll (Complete Project) w/Multipliers	$867,501	$910,876	$956,420	$1,004,241	$1,054,453	$1,107,176	$1,162,535	$1,220,661	$1,281,694	$1,345,779
Total Projected Jobs (Complete Project) w/Multipliers	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79	9.79

Total Project Impact of Wages (W/Construction)	**$44,254,297**
Total Projected Impact of Wages (W/O Construction)	**$17,609,952**

Notes:

1. Market Wage is based on average of unionized construction trades estimated for 3Q2018 average hourly wage of $38.43 and fully burdened of $50.95
2. All calculations based on full year and show year # rather than actual year
3. Operational Wages based budget figures provided by Drew Solar, LLC and through DMG, Inc. calculations
4. Disclosure: Drew Solar, LLC provided construction labor projections shown in this report

Profit, overhead PLA/Signatory structure, outside engineering and project management not included in calculations

Sources:

State of California Department of Industrial Relations	Development Management Group, Inc.
State Employment Development Department	Drew Solar, LLC
RIMS II	United States Department of Labor

Exhibit M
Projected Costs for County to Provide General Government Services to Population
County of Imperial, California

#	Department/Unit	Item	2018-19 Adopted Budget
1	Admin	County Pension Bonds-1997	$5,979,055
2	Legislative and Admin	Entire Section	$4,517,179
3	Finance	Entire Section	$7,212,666
4	County Counsel	Entire Section	$2,472,939
5	Personnel	Entire Section	$1,851,124
6	Equal Employment Opportunity	Entire Section	$149,920
7	Elections	Entire Section	$1,106,874
8	Property/Facility Management	Entire Section	$5,308,241
9	Other General	Entire Section	$2,377,683
10	Recreational Facilities	Entire Section	$2,268,002
	Public Protection		
11	Judicial	Entire Section	$19,956,766
12	Police Protection	Entire Section	$19,561,211
13	Detention and Correction	Entire Section	$27,074,961
14	Fire Protection	Entire Section	$7,782,884
15	Protective Inspection	Entire Section	$5,772,923
16	Other Protection	Entire Section	$24,532,518
	Public Ways & Facilities		
17	Public Ways	Entire Section	$12,015,838
	Health and Sanitation		
18	Health	Entire Section	$98,650,023
19	Sanitation	Entire Section	$2,799,781
	Public Assistance		
20	Administration-Workforce Development	Entire Section	$2,951,450
21	Security-Sheriff	Entire Section	$122,400
22	Administration-Social Services	Entire Section	$49,631,603
23	Categorical AIDS	Entire Section	$59,754,087
24	General Relief	Entire Section	$129,100
25	Veterans Services	Entire Section	$258,989
26	Other Assistance	See Notes	$923,586
	Education		
27	Health	Entire Section	$370,975
28	Agriculture Education	Entire Section	$426,222
29	Library Services	Entire Section	$616,853
30	Other Education	Entire Section	$100,420
	Recreation		
31	Recreation Facilities	Entire Section	$764,643
	Contingency		
32	Contingency	Entire Section	$1,000,000
	Total of Governmental Expenditures/Responsibilities		$368,440,916
	Total Number of Residents of Imperial County (2018 CA Dept. of Finance E-1)		190,624
	Total Spending Per Resident of Imperial County		$1,932.81

Notes:
Item 14 Net of City of Imperial Fire Contract
Item 26 includes only Imperial County Community Economic Development and Cont. to Others Public Assistance
Based on Schedule 8 of County of Imperial Government Funds Detail of Financing Uses by Function, Activity and Budget Unit
FY 2018-19 Adopted Budget (Adopted September 18, 2018)

Exhibit N

Projected Costs for County of Imperial to Provide General Government Services as Result of Drew Solar, LLC: Imperial County, California

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Number of Projected Construction Jobs (FTE)	190	0	0	0	0	0	0	0	0	0
Number of Projected Operational Jobs (FTE)	4	4	4	4	4	4	4	4	4	4
Total Jobs (construction & Operational) (FTE)	194	4	4	4	4	4	4	4	4	4
Ave. Number of Persons Per Household	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59
Estimated Persons Supported by Gen Govt.	696.46	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36
Cost Per Person (General Govt.)	$1,933	$1,983	$2,035	$2,088	$2,142	$2,198	$2,255	$2,314	$2,374	$2,436
Estimated Cost to Provide General County Govt. Services	$1,346,125	$28,478	$29,219	$29,980	$30,760	$31,561	$32,383	$33,226	$34,091	$34,978

Item	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Number of Projected Operational Jobs (FTE)	4	4	4	4	4	4	4	4	4	4
Ave. Number of Persons Per Household	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59
Estimated Persons Supported by Gen Govt.	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36
Cost Per Person (General Govt.)	$2,499	$2,564	$2,631	$2,700	$2,770	$2,842	$2,916	$2,992	$3,070	$3,150
Estimated Cost to Provide General County Govt. Services	$35,889	$36,823	$37,782	$38,765	$39,774	$40,810	$41,872	$42,962	$44,081	$45,228

Item	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Number of Projected Operational Jobs (FTE)	4	4	4	4	4	4	4	4	4	4
Ave. Number of Persons Per Household	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59
Estimated Persons Supported by Gen Govt.	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36	14.36
Cost Per Person (General Govt.)	$3,232	$3,316	$3,402	$3,491	$3,581	$3,675	$3,770	$3,869	$3,969	$4,073
Estimated Cost to Provide General County Govt. Services	$46,406	$47,614	$48,853	$50,125	$51,430	$52,769	$54,142	$55,552	$56,998	$58,482

Total Cost to Provide General Government Services ***$2,557,155***

Notes:

Cost Per Person for General Government is adjusted by the 30 year average Consumer Price Index of 2.6033 (1988-2017)

Exhibit O
Projected Revenue Versus Expenses: County of Imperial Drew Solar, LLC: Imperial County, California)
Years 1-30

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Projected Sales Tax Income	$1,308,743									
Projected Property Tax Income (Net)	$54,719	$55,520	$56,334	$57,162	$58,003	$58,858	$59,727	$60,611	$61,509	$62,421
Total Projected Income for General Government Services	$1,363,462	$55,520	$56,334	$57,162	$58,003	$58,858	$59,727	$60,611	$61,509	$62,421
Projected Costs to Provide General Government Services	$1,346,125	$28,478	$29,219	$29,980	$30,760	$31,561	$32,383	$33,226	$34,090	$34,978
Estimated Revenue Surplus (Deficit) (Annual)	$17,337	$27,042	$27,115	$27,182	$27,243	$27,297	$27,344	$27,385	$27,419	$27,443
Aggregate Revenue Surplus (Deficit)	$17,337	$44,379	$71,494	$98,676	$125,919	$153,216	$180,561	$207,946	$235,365	$262,808

Item	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Projected Property Tax Income (Net)	$63,349	$64,293	$65,251	$66,226	$67,217	$68,224	$69,249	$70,290	$71,349	$72,425
Projected Costs to Provide General Government Services	$35,889	$36,823	$37,781	$38,765	$39,774	$40,810	$41,872	$42,962	$44,081	$45,228
Estimated Revenue Surplus (Deficit) (Annual)	$27,460	$27,470	$27,470	$27,461	$27,443	$27,414	$27,377	$27,328	$27,268	$27,197
Aggregate Revenue Surplus (Deficit)	$290,268	$317,738	$345,208	$372,669	$400,112	$427,526	$454,903	$482,231	$509,500	$536,696

Item	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Projected Property Tax Income (Net)	$73,519	$74,632	$75,763	$76,914	$78,084	$79,273	$80,483	$81,713	$82,964	$84,236
Projected Costs to Provide General Government Services	$46,405	$47,614	$48,853	$50,125	$51,430	$52,769	$54,142	$55,552	$56,998	$58,482
Estimated Revenue Surplus (Deficit) (Annual)	$27,114	$27,018	$26,910	$26,789	$26,654	$26,504	$26,341	$26,161	$25,966	$25,754
Aggregate Revenue Surplus (Deficit)	$563,810	$590,828	$617,738	$644,527	$671,182	$697,686	$724,027	$750,188	$776,154	$801,908

Total Revenues over Expenses to Provide General Govt. Services ***$801,908***

Notes:
Sales Tax Income applicable in Year 1 which represents construction of project
Property Tax available for General Government Services includes General Fund, Library and Fire Protection

Local Sales/Use Tax Revenue	$1,308,743
Net to County Property Tax Revenue	$2,050,317
Total Projected Revenue to County (Sales/Use Tax + Property Tax)	$3,359,060
Cost of County Government Services	$2,557,153
Projected Revenue to County over Expenses	$801,907

Note: Difference of $1 due to rounding

Exhibit Q

Drew Solar, LLC: Imperial Valley, CA Site Parcel Map (Furnished by Applicant)

Date: 11/1/2017

Legend

- Project Boundary
- Project Electrical Crossing
- IID Distribution Circuit
- Access from SR 98
- Access from County road
- IID Earthen Canal
- IID Concrete Canal
- IID Drain
- IID Operational Spill

Drew Solar Project Area

THIS PAGE INTENTIONALLY LEFT BLANK.