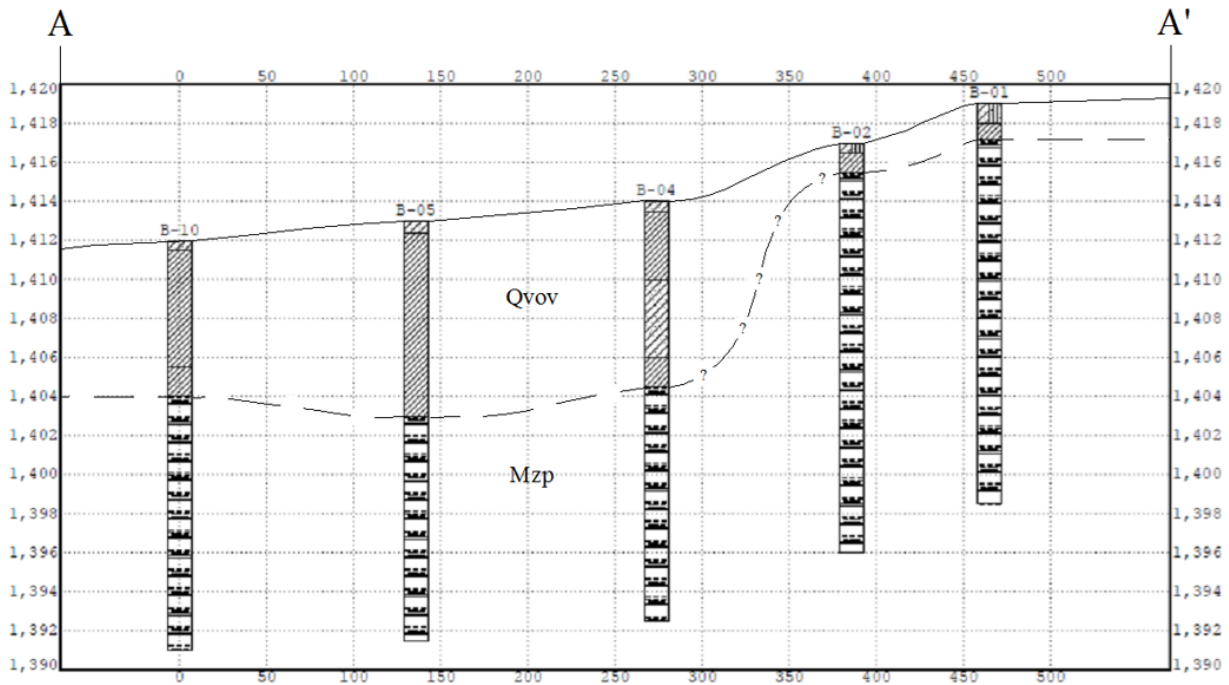


**Figure 7: Subsurface Profile**



Consolidation testing indicates that the near surface alluvial soil is slightly to moderately compressible. One test indicates a moderate potential for saturation collapse.

The near surface alluvial soil is plastic and expansive. Expansion Index testing indicated an Expansive Index of 66 on representative soils.

Analytical testing indicates that sulfate concentrations are negligible. In accordance with ACI 318, Table 4.2.1, the soil can be classified as Class S0 with respect to sulfate exposure. Chloride concentrations are less than 100 parts per million. The soil is slightly alkaline with pH values of 7.8 to 8.2. Saturated resistivity values range from 1,600 to 2,600 ohm-cm.

Groundwater was encountered within our exploratory boring B-08 at a depth of approximately 30 feet below the existing ground surface. Groundwater data reviewed during this study revealed the depth to historical high groundwater levels in the vicinity of the site is less than 20 feet beneath the existing ground surface.

## **CONCLUSIONS AND RECOMMENDATIONS**

On the basis of our field and laboratory exploration and testing, it is our opinion that the proposed construction will be feasible from a geotechnical engineering standpoint. Existing site soils should be suitable for providing foundation support with appropriate recompaction, as recommended herein.

The primary issue requiring mitigation is the presence of expansive soils. Expansive soil design criteria are recommended for concrete slabs-on-grade.

Analytical testing indicates that sulfate concentrations are negligible. In accordance with ACI 318, Table 4.2.1, the soil can be classified as Class S0 with respect to sulfate exposure. Chloride concentrations are also low. The soil is slightly alkaline with pH values of 7.8 to 8.2. Saturated resistivity values range from 1,600 to 2,600 ohm-cm, indicating that the soil is moderately corrosive with respect to buried ferrous metals. Inland Foundation Engineering, Inc. does not practice corrosion engineering. We recommend that a qualified corrosion engineer be consulted for additional guidance.

Groundwater was encountered within our exploratory boring B-08 at a depth of approximately 30 feet below the existing ground surface. Groundwater data reviewed during this study revealed the depth to historical high groundwater levels in the vicinity of the site is less than 20 feet beneath the existing ground surface.

The following paragraphs present more detailed design criteria which have been developed on the basis of our field and laboratory investigation.

**Foundation Design:** Foundations for the proposed charter school may consist of shallow spread footings with a slab-on-grade floor. For design, we recommend an allowable soil bearing capacity of 2,800 pounds per square foot. This value may be increased by  $\frac{1}{3}$  for short-term transient wind and seismic loads.

Conventional spread foundations should have a minimum width of 12 inches and should be founded a minimum depth of 24 inches beneath the lowest adjacent final grade. Building footings should be supported by at least 24 inches of compacted fill over suitably dense alluvial soils.

Static settlement of foundations properly designed and constructed as recommended herein is expected to be less than one inch total. Differential

settlement between foundations of similar size and load is expected to be less than one-half inch.

*The site is underlain by expansive soil. The 2013 CBC requires that slab-on-grade foundations on expansive soils be designed in accordance with WRI/CRSI Design of Slab-on-Ground Foundations (1981) or PTI Standard Requirements for Analysis of Shallow Concrete Foundations on Expansive Soils (2012).*

*Recommended design parameters for use with these methods are presented in the “Concrete Slabs-on-Grade” section of this report.*

*If conventional slabs-on grade are utilized, they should be supported by at least four feet of imported non-expansive soil.*

**Lateral Design:** Resistance to lateral loads will be provided by a combination of friction acting at the base of the slab or foundation and passive earth pressure. A coefficient of friction of 0.39 between soil and concrete may be used with dead load forces only. A passive earth pressure of 270 pounds per square foot, per foot of depth, may be used for the sides of footings poured against recompacted or dense native material. These values may be increased by 1/3 to provide for lateral loads of short duration such as those caused by wind or seismic forces. Passive earth pressure should be ignored within the upper one foot except where confined as beneath a floor slab, for example.

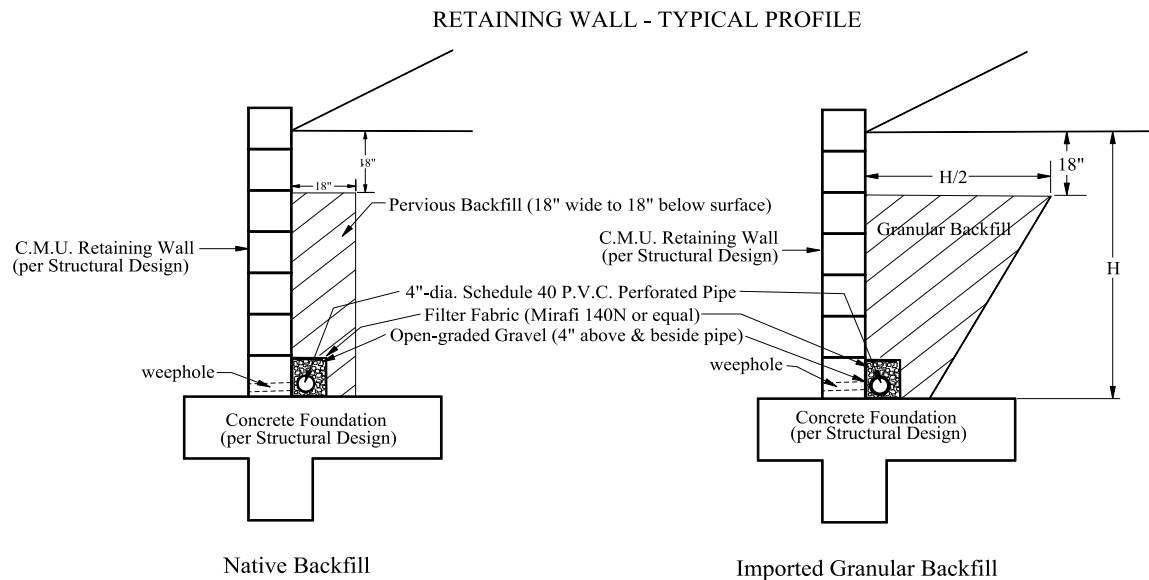
**Trench Wall Stability:** Significant caving did not occur within our exploratory borings. All excavations should be configured per with the requirements of CalOSHA. We would classify the soils as Type C, per CalOSHA criteria. The classification of the soil and the shoring and/or slope configuration should be the responsibility of the contractor on the basis of the trench depth and the soil encountered. The contractor should have a “competent person” on-site for the purpose of assuring safety within and about all construction excavations.

**Retaining Walls:** Retaining walls may be necessary during construction and/or landscaping. For on-site soils, the retaining walls should be designed for an active earth pressure equivalent to that exerted by a fluid weighing not less than 40 pounds per cubic foot (pcf).

For walls that are restrained, an “at-rest” lateral equivalent fluid pressure of 60 pounds per cubic foot is recommended, with the resultant applied at mid-height of the wall.

Any applicable construction and seismic surcharges should be added to the above pressures. Figure 8 shows a typical retaining wall profile.

**Figure 8: Typical Retaining Wall Profile**



At least 12 inches of granular material should be used in the backfill behind the walls and water pressure should not be permitted to build up behind retaining walls. The upper 12 to 18 inches of the backfill should consist of soil having a low permeability (less than  $10^{-6}$  cm/sec). All backfill should be non-expansive. A subdrain should be constructed along the base of the backfill. Typical recommended retaining wall backfill and drainage details are shown in the detail above.

**Concrete Slabs-on-Grade:** Our exploratory borings and laboratory testing indicate that potentially expansive soils are present throughout the project site and that expansive soil design criteria should be implemented for concrete slabs-on-grade. *If conventional slabs-on grade are utilized, they should be supported by at least four feet of imported non-expansive soil.*

The 2013 CBC requires that slab-on-grade foundations on expansive soils be designed in accordance with **WRI/CRSI Design of Slab-on-Ground Foundations (1981)** or **PTI Standard Requirements for Analysis of Shallow Concrete Foundations on Expansive Soils (2012)**. The following table presents the design parameters for the WRI method (Table 4):



**Table 4: WRI Parameters**

Parameter	Reference	Value
C <sub>O</sub>	WRI Figure 5	2.0
C <sub>S</sub>	WRI Figure 4	1.0
C <sub>W</sub>	WRI Figure 14	15
Effective PI	Laboratory Testing	16
1-C	WRI Figure 15	0.0

PTI design criteria for the design of post-tensioned slabs are presented in the following table (Table 5):

**Table 5: PTI Parameters**

Parameter	Reference	Value
pF	Figure 5.11	4.0
Thornthwaite Index	Figure A3	-30
e <sub>m</sub> edge lift	Figure 5.10	4.5 ft.
y <sub>m</sub> edge lift	Table 5.2 (a)	1.0 in.
e <sub>m</sub> center lift	Figure 5.10	9.0 ft.
y <sub>m</sub> center lift	Table 5.2 (a)	0.3 in.

All concrete slabs-on-grade should have a minimum thickness of four inches. During final grading and prior to the placement of concrete, all surfaces to receive concrete slabs-on-grade should be compacted to maintain a minimum compacted fill thickness of 12 inches.

Load bearing slabs may be designed using a modulus of subgrade reaction not exceeding 100 pounds per square inch per inch.

Slabs that are designed and constructed per the provisions of the American Concrete Institute (ACI) as a minimum will perform much better and will be more pleasing in appearance. Shrinkage of concrete should be anticipated. This will result in cracks in all concrete slabs-on-grade. Shrinkage cracks may be directed to saw-cut "control joints" spaced on the basis of slab thickness and reinforcement. ACI typically recommends control joint spacing in unreinforced concrete at maximum intervals equal to the slab thickness times 24. A level subgrade is also an important element in achieving some "control" in the

locations of shrinkage cracks. Control joints should be cut immediately following the finishing process and prior to the placement of the curing cover or membrane. Control joints that are cut on the day following the concrete placement are generally ineffective. The placement of reinforcing steel will help in reducing crack width and propagation as-well-as providing for an increase in the control joint spacing. The use of welded wire mesh has typically been observed to be of limited value due to difficulties and lack of care in maintaining the level of the steel in the concrete during placement. The addition of water to the mix to enhance placement and workability frequently results in an excessive water-cement ratio that weakens the concrete, increases drying times and results in more cracking due to concrete shrinkage during the initial cure.

Where slabs are to receive moisture sensitive floor coverings, we recommend the use of a vapor retarder. There are various products manufactured for this purpose. ASTM currently provides a standard water vapor permeance of 0.3 perms. Such materials would allow up to 18 gallons of water per week in a 50,000 square foot area. Therefore, it should be understood that these materials are not vapor “barriers”. Some flooring applications may require more effective retarders. Therefore, the selection of the vapor retarder should be based upon the type of flooring material and is not considered to be a geotechnical engineering design parameter.

Vapor retarders should have a minimum thickness of 10-mil unless otherwise specified. It is possible that the retarders will be exposed to equipment loads such as ready-mix trucks, buggies, laser screeds, etc. In such cases, the thickness should be increased to at least 15-mil. Vapor retarders should be placed between two 2-inch thick layers of sand to reduce the potential of punctures and to aid in the curing process. In lieu of this, the concrete may be placed directly upon the vapor retarder but should be designed with reinforcement to offset additional curling stresses. Seams and holes made for underground utilities should be properly sealed per the recommendations of the manufacturer.

The vapor retarder recommended in the preceding paragraphs is a common method of reducing the migration of moisture through the slab. It will not prevent all moisture migration through the slab nor will it prohibit the formation of mold or other moisture related problems. For moisture sensitive floor coverings, an expert in that field should be consulted to properly design a vapor retarder suitable for the specific application.

If concrete is to be placed on a dry absorptive subgrade in hot and dry weather, the subgrade should be dampened but not to a point that there is freestanding water prior to placement. The formwork and reinforcement should also be dampened.

**Preliminary Pavement Design:** Based on our test results, we have used an R-value of 13 to evaluate the preliminary structural pavement sections for the project. At the completion of rough grading, additional samples of the actual pavement subgrade soil should be obtained for R-value testing to confirm that the following recommended pavement sections are appropriate.

All surfaces to receive asphalt concrete paving should be underlain by a minimum compacted fill thickness of 12 inches (excluding aggregate base). This may be performed as described in the Site Grading Section of this report.

### **Asphalt Concrete Pavement**

Table 6 presents the recommended structural section designs based on current Caltrans design procedures.

**Table 6: Preliminary AC Pavement Designs**

<b>Service</b>	<b>Asphalt Concrete Thickness (ft.)</b>	<b>Base Course Thickness (ft.)</b>
Light traffic (autos, parking areas, T.I. = 5.0)	0.25	0.70
Heavy traffic (trucks, driveways, bus lanes, T.I. =7.0)	0.30	1.20

### **Portland Cement Concrete Pavement (PCCP)**

Table 7 presents the recommended PCCP structural sections for onsite parking and drive areas based on the American Concrete Institute Guide for Design and Construction of Concrete Parking Lots (ACI 330R-08).

**Table 7: Preliminary PCCP Pavement Designs**

<b>Service</b>	<b>PCCP Thickness (in.)</b>	<b>Class 2 Aggregate Base Thickness (in.)</b>
Car Parking Areas and Access Lanes ADTT = 1 (Category A)	4.5	4.0
Bus Lanes and Parking ADTT = 25 (Category B)	5.5	4.0

The concrete should have a minimum 28-day modulus of rupture of 600 psi. This corresponds to a compressive strength of approximately 4,500 psi. The Class 2 aggregate base should comply with current Caltrans requirements. The aggregate base should be compacted to at least 95 percent relative compaction based on ASTM D1557. The upper 12 inches of pavement subgrade soil, below the aggregate base, should also be compacted to a minimum relative compaction of 95 percent.

Construction joints should be sawcut in the pavement at a maximum spacing of 30 times the thickness of the slab, up to a maximum of 15 feet. Pavement sawcutting should be performed within 12 hours of concrete placement, preferably sooner. Sawcut depths should be equal to approximately  $\frac{1}{4}$  of the slab thickness for conventional saws or one inch when early-entry saws are utilized on slabs nine inches thick or less. Construction joints should not be placed near flow lines. The use of plastic strips for formation of jointing is not recommended. The use of expansion joints is not recommended, except where the pavement will adjoin structures.

**General Site Grading:** All grading should be performed in accordance with the applicable provisions of the 2013 California Building Code. The following recommendations have been developed on the basis of our field and laboratory testing:

1. **Clearing and Grubbing:** All surfaces to receive compacted fill and all building, slab and pavement areas should be cleared of existing loose soil, vegetation, debris, and other unsuitable materials. We recommend a minimum over-excavation of at least 24 inches below existing surface grades to provide assurance of root removal and to expose abandoned utility and irrigation lines. All abandoned underground utility lines should

be traced out and completely removed from the site. Soils which are loosened due to the removal of trees should be removed and replaced as controlled compacted fill.

**2. Preparation of Surfaces to Receive Compacted Fill:** All surfaces to receive compacted fill should be subjected to compaction testing prior to processing. Testing should indicate a relative compaction of at least 85 percent within the unprocessed native soils. If roots or other deleterious materials are encountered or if the relative compaction fails to meet the acceptance criterion, additional over-excavation will be required until satisfactory conditions are encountered. Upon approval, surfaces to receive fill should be scarified, brought to near optimum moisture content, and compacted to a minimum of 90 percent relative compaction.

**3. Placement of Compacted Fill:** Fill materials consisting of on-site soils or approved imported granular soils should be spread in shallow lifts and compacted at near optimum moisture content to a minimum of 90 percent relative compaction.

**4. Preparation of Building Areas:** Building areas for the charter school should be over-excavated to minimum depth of 24 inches below existing grades, or to the depth necessary to provide at least 12 inches of compacted fill below footing bottoms, whichever is deeper. The over-excavated area should extend outside of the exterior footing lines for a distance of at least five feet. The surface of the over-excavation should then be reviewed for compliance with the criteria of Item 2 under this section. Upon approval the surface should be scarified, brought to near optimum moisture content and compacted to a minimum of 90 percent relative compaction. The excavated material may then be replaced as controlled compacted fill.

**5. Preparation of Slab and Paving Areas:** During final grading and immediately prior to the placement of concrete or a base course, all surfaces to receive asphalt concrete paving, PCC paving or concrete slabs-on-grade should be processed and tested to assure compaction for a depth of at least of 12 inches. This may be accomplished by a combination of overexcavation, scarification and recompaction of the surface, and replacement of the excavated material as controlled compacted fill. Compaction of slab areas should be to a minimum of 90 percent relative

compaction. Compaction within proposed pavement areas should be to a minimum of 95 percent relative compaction for both the subgrade and base course.

**6. Utility Trench Backfill:** Utility trench backfill consisting of the on-site soil types should be placed by mechanical compaction to a minimum of 90 percent relative compaction. This is with the exception of the upper 12 inches under pavement areas where the minimum relative compaction should be 95 percent. Jetting of the native soils is not recommended.

**7. Testing and Observation:** During site grading, tests and observations should be performed to verify that the grading is being performed in accordance with the project specifications and the recommendations in this report. Field density testing should be performed in accordance with the ASTM D1556 or D6938 test method. The minimum acceptable degree of compaction should be 90 percent of the maximum dry density as obtained by the ASTM D1557 test method. Where testing indicates insufficient density, additional compactive effort should be applied until retesting indicates satisfactory compaction.

Testing should also be conducted to verify that the soils will not subject concrete to sulfate attack and are not corrosive. Testing of any proposed import soil will be necessary prior to placement on the site. Testing of on-site soils may be done on either a selective or random basis as site conditions indicate.

## **GENERAL**

The findings and recommendations presented in this report are based upon an interpolation of the soil conditions between boring locations. Should conditions be encountered during grading that appears to be different than those indicated by this report, this office should be notified.

We recommend that a pre-job conference be held on the site prior to the initiation of site grading. The purpose of this meeting will be to assure a complete understanding of the recommendations presented in this report as they apply to the actual grading performed.

This report was prepared for Temecula Valley Charter School for their use in the design of the Charter School Facility. This report may only be used by Temecula Valley Charter School for this purpose. The use of this report by parties or for other purposes is not authorized without written permission by Inland Foundation Engineering, Inc. Inland Foundation Engineering, Inc. will not be liable for any projects connected with the unauthorized use of this report.

The recommendations of this report are considered to be preliminary. The final design parameters may only be determined or confirmed at the completion of site grading on the basis of observations made during the site grading operation. To this extent, this report is not considered to be complete until the completion of both the design process and the site preparation.

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Terrain Navigator, Orthophoto Map, Bachelor Mt. NW Quadrangle, CA, USGS Ref. Code 33117-E1-01-PHT, dated May 30, 2014.

## APPENDIX A

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















## **APPENDIX A**

### **FIELD EXPLORATION**

For our field exploration, ten exploratory borings were excavated by means of a truck mounted rotary auger rig at the approximate locations shown on Figure No. A-13. Logs of the materials encountered were made on the site by a staff geologist. These are presented on Figure Nos. A-3 through A-12.

Representative relatively undisturbed samples were obtained within our borings by driving a thin-walled steel penetration sampler with successive 30-inch drops of a 140-pound hammer. The number of blows required to achieve each six inches of penetration were recorded on our boring logs and used for estimating the relative consistencies of the subsoils. Two different samplers were used. The first sampler used was a Standard Penetration Sampler for which published correlations relating the number of hammer blows to the strength of the soil are available. The second sampler type was larger in diameter, carrying brass sample rings having inner diameters of 2.41 inches. Samples were placed in moisture sealed containers in order to preserve the natural soil moisture content. They were then transported to our laboratory for further observations and testing.

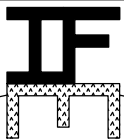
Representative bulk samples were obtained and returned to our laboratory for further testing and observations. The results of this testing are discussed and presented in Appendix B.

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487)									
PRIMARY DIVISIONS			GROUP SYMBOLS		SECONDARY DIVISIONS				
COARSE GRAINED SOILS  MORE THAN HALF OF MATERIALS IS LARGER THAN #200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN #4 SIEVE	CLEAN GRAVELS (LESS THAN) 5% FINES	GW		WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES				
			GP		POORLY GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES				
		GRAVEL WITH FINES	GM		SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES				
			GC		CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES				
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN #4 SIEVE	CLEAN SANDS (LESS THAN) 5% FINES	SW		WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES				
			SP		POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES				
		SANDS WITH FINES	SM		SILTY SANDS, SAND-SILT MIXTURES				
			SC		CLAYEY SANDS, SAND-CLAY MIXTURES				
FINE GRAINED SOILS  MORE THAN HALF OF MATERIALS IS SMALLER THAN #200 SIEVE SIZE	SILTS AND CLAYS  LIQUID LIMIT IS LESS THAN 50		ML		INORGANIC SILTS, VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS				
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS				
			OL		ORGANIC SILTS AND ORGANIC SILT-CLAYS OF LOW PLASTICITY				
	SILTS AND CLAYS  LIQUID LIMIT IS GREATER THAN 50		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDS OR SILTS, ELASTIC SILTS				
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS				
			OH		ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS				
	HIGHLY ORGANIC SOILS		PT		PEAT, MUCK AND OTHER HIGHLY ORGANIC SOILS				
TYPICAL FORMATIONAL MATERIALS	SANDSTONES		SS						
	SILTSTONES		SH						
	CLAYSTONES		CS						
	LIMESTONES		LS						
	SHALE		SL						
CONSISTENCY CRITERIA BASES ON FIELD TESTS									
RELATIVE DENSITY – COARSE – GRAIN SOIL			CONSISTENCY – FINE-GRAIN SOIL		TORVANE	POCKET ** PENETROMETER	* NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 INCH O.D. (1 3/8 INCH I.D.) SPLIT BARREL SAMPLER (ASTM -1586 STANDARD PENETRATION TEST)  ** UNCONFINED COMPRESSIVE STRENGTH IN TONS/SQ.FT. READ FROM POCKET PENETROMETER		
RELATIVE DENSITY	SPT * (# BLOWS/FT)	RELATIVE DENSITY (%)	CONSISTENCY	SPT* (# BLOWS/FT)	UNDRAINED SHEAR STRENGTH (tsf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)			
VERY LOOSE	<4	0-15	Very Soft	<2	<0.13	<0.25			
LOOSE	4-10	15-35	Soft	2-4	0.13-0.25	0.25-0.5			
MEDIUM DENSE	10-30	35-65	Medium Stiff	4-8	0.25-0.5	0.5-1.0			
DENSE	30-50	65-85	Stiff	8-15	0.5-1.0	1.0-2.0			
VERY DENSE	>50	85-100	Very Stiff	15-30	1.0-2.0	2.0-4.0			
			Hard	>30	>2.0	>4.0			
MOISTURE CONTENT			CEMENTATION						
DESCRIPTION	FIELD TEST				DESCRIPTION	FIELD TEST			
DRY	Absence of moisture, dusty, dry to the touch				Weakly	Crumbled or breaks with handling or slight finger pressure			
MOIST	Damp but no visible water				Moderately	Crumbles or breaks with considerable finger pressure			
WET	Visible free water, usually soil is below water table				Strongly	Will not crumble or break with finger pressure			
			EXPLANATION OF LOGS					A-2	

# LOG OF BORING B-01

Elevation:	<u>1419.0</u>	Date(s) Drilled:	<u>8/2/16</u>	Logged by:	<u>DRL</u>
Drilling Method:	<u>Rotary Auger</u>	Hammer Type:	<u>Auto-Trip</u>	Hammer Weight:	<u>140 lb.</u>
Drilling Rig:	<u>CME 75</u>	Hammer Drop:	<u>30-inches</u>		
Boring Diameter:	<u>8-inches</u>				

DEPTH (ft)	GRAPHIC	USCS	SUMMARY OF SUBSURFACE CONDITIONS <small>This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.</small>	SAMPLES			BLOWS/6"	MOISTURE (%)	DRY UNIT WT. (pcf)	RELATIVE COMPACTION (%)
				DRIVE SAMPLE	BULK SAMPLE	SAMPLE TYPE				
5		SC SM CL BR	<b>SILTY CLAYEY SAND</b> , very fine-grained, dark brown (10YR 3/3), dry to slightly moist, very loose. Abundant rootlets.			B				
			<b>SANDY CLAY</b> , very fine- to medium-grained, dark olive-brown (2.5Y 3/3), moist, hard. Moderately cemented.			SS	20	7	120	
			<b>PHYLLITE BEDROCK</b> , dark gray (2.5Y 3/1), moist, hard. Moderately to highly weathered.			B	50			
						SS	50	13	89	
						SS	16 50/5"	14	106	
10						SS	50	10	105	
15			slight mottling			SS	50/5"	6	102	
20						SPT	50	10		
			End of boring at 20.5 feet. No groundwater encountered. Slight mottling at 15 feet.							




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Geotechnical Investigation	Figure No.
Temecula Valley Charter School	
Temecula, CA	
Project No. T238-001	<b>A-3</b>

# LOG OF BORING B-02

Elevation:	<u>1417.0</u>	Date(s) Drilled:	<u>8/2/16</u>	Logged by:	<u>DRL</u>
Drilling Method:	<u>Rotary Auger</u>	Hammer Type:	<u>Auto-Trip</u>	Hammer Weight:	<u>140 lb.</u>
Drilling Rig:	<u>CME 75</u>	Hammer Drop:	<u>30-inches</u>		
Boring Diameter:	<u>8-inches</u>				

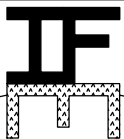
DEPTH (ft)	GRAPHIC	USCS	SUMMARY OF SUBSURFACE CONDITIONS  This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.	SAMPLES			BLOWS/6"	MOISTURE (%)	DRY UNIT WT. (pcf)	RELATIVE COMPACTION (%)
				DRIVE SAMPLE	BULK SAMPLE	SAMPLE TYPE				
5		SC	<b>SILTY CLAYEY SAND</b> , very fine-grained, dark grayish-brown (2.5Y 4/2), dry, very loose. <b>SANDY CLAY</b> , very fine-grained, dark grayish-brown (2.5Y 4/2), slightly moist, stiff to hard. <b>PHYLLITE BEDROCK</b> , very fine-grained, dark grayish brown (2.5Y 4/2), slightly moist, hard. Strongly cemented. Moderately to highly weathered.  very hard, slightly weathered							
		SM								
		CL								
		BR								
10										
15										
20										
			End of boring at 21 feet. No groundwater or mottling encountered.							



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Geotechnical Investigation  
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Temecula, CA  
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Figure No.  
  
**A-4**




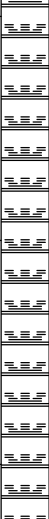
INLAND FOUNDATION ENGINEERING, INC.

Geotechnical Investigation	Figure No.
Temecula Valley Charter School	
Temecula, CA	
Project No. T238-001	<b>A-4</b>







# LOG OF BORING B-03

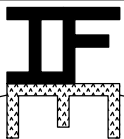
Elevation:	<u>1414.0</u>	Date(s) Drilled:	<u>8/3/16</u>	Logged by:	<u>DRL</u>
Drilling Method:	<u>Rotary Auger</u>	Hammer Type:	<u>Auto-Trip</u>	Hammer Weight:	<u>140 lb.</u>
Drilling Rig:	<u>CME 75</u>	Hammer Drop:	<u>30-inches</u>		
Boring Diameter:	<u>8-inches</u>				

DEPTH (ft)	GRAPHIC	USCS	SUMMARY OF SUBSURFACE CONDITIONS  This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.	SAMPLES			BLOWS/6"	MOISTURE (%)	DRY UNIT WT. (pcf)	RELATIVE COMPACTION (%)	
				DRIVE SAMPLE	BULK SAMPLE	SAMPLE TYPE					
5		SC	<b>CLAYEY SAND</b> , very fine- to coarse-grained, dark olive-brown (2.5Y 3/3), slightly moist, loose.			B					
		SC	<b>CLAYEY SAND</b> , with gravel, very fine-grained, olive brown (2.5Y 4/3), slightly moist, dense. Well cemented. Blocky.	X		SS B	25 50/6"	5	109		
		BR	<b>PHYLLITE BEDROCK</b> , dark grayish-brown (2.5Y 4/2), slightly moist, hard. Moderately weathered. Fractured. Becomes less weathered with depth.	X		SS	50/4"	7	109		
				X		SPT	50/6"	5			
				X		SPT	50/6"	3			
15				X		SPT	50/4"	3			
			End of boring at 16.5 feet. No groundwater encountered.								

# LOG OF BORING B-04

Elevation:	<u>1414.0</u>	Date(s) Drilled:	<u>8/2/16</u>	Logged by:	<u>DRL</u>
Drilling Method:	<u>Rotary Auger</u>	Hammer Type:	<u>Auto-Trip</u>	Hammer Weight:	<u>140 lb.</u>
Drilling Rig:	<u>CME 75</u>	Hammer Drop:	<u>30-inches</u>		
Boring Diameter:	<u>8-inches</u>				

DEPTH (ft)	GRAPHIC	USCS	SUMMARY OF SUBSURFACE CONDITIONS  This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.	SAMPLES			BLOWS/6"	MOISTURE (%)	DRY UNIT WT. (pcf)	RELATIVE COMPACTION (%)
				DRIVE SAMPLE	BULK SAMPLE	SAMPLE TYPE				
5		SC	<b>CLAYEY SAND</b> , very fine-grained, dark grayish-brown (2.5Y 4/2), dry, very loose. Rootlets.			B				
		CL		<b>SANDY CLAY</b> , very fine-grained, dark brown (10YR 3/3), slightly moist to moist, hard. Strongly cemented.						
					X		SS	37 31	8	114
						X		B		
10		SC	<b>CLAYEY SAND</b> , with gravel, very fine- to fine-grained, dark brown (10YR 3/3), moist, dense.			SS	50	10	105	
		CL	<b>SANDY CLAY</b> , with gravel, very fine- to coarse-grained, dark olive-brown (2.5Y 3/3), moist, dense conglomerate. Hard drilling.			SS	29 50	10	110	
		BR		<b>PHYLLITE BEDROCK</b> , very fine- to coarse-grained, dark gray (2.5Y 3/1), moist, hard. Highly weathered.						
			X			SS	30 50/4"	13	104	
15										
				X		SS	50	11	99	
20										
				X		SPT	40 50/4"	14		
			End of boring at 21.5 feet. No groundwater encountered.							












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<b>Geotechnical Investigation</b>	Figure No.
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<b>Temecula, CA</b>	
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# LOG OF BORING B-05


Elevation:	<u>1413.0</u>	Date(s) Drilled:	<u>8/2/16</u>	Logged by:	<u>DRL</u>
Drilling Method:	<u>Rotary Auger</u>			Hammer Type:	<u>Auto-Trip</u>
Drilling Rig:	<u>CME 75</u>			Hammer Weight:	<u>140 lb.</u>
Boring Diameter:	<u>8-inches</u>			Hammer Drop:	<u>30-inches</u>

DEPTH (ft)	GRAPHIC	USCS	SUMMARY OF SUBSURFACE CONDITIONS  This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.	SAMPLES			BLOWS/6"	MOISTURE (%)	DRY UNIT WT. (pcf)	RELATIVE COMPACTION (%)
				DRIVE SAMPLE	BULK SAMPLE	SAMPLE TYPE				
5		SC CL	<b>CLAYEY SAND</b> , very fine-grained, dark olive-brown (2.5Y 3/3), dry, very loose. Rootlets. <b>CLAY</b> , with sand, very fine- to fine-grained, dark olive-brown (2.5Y 3/3), moist, hard. Moderately cemented.			B				
						SS	17 23	8	97	
						SS	28 33	8	103	
10		BR	<b>PHYLLITE BEDROCK</b> , very fine- to coarse-grained, dark gray (2.5Y 3/1), moist, hard. Moderately to highly weathered.			SS	40 50/5"	15	101	
15			Mottling			SS	50/4"	10	100	
20						SPT	22 50	24		
			End of boring at 21.5 feet. No groundwater encountered. Mottling observed at 15 feet.							

# LOG OF BORING B-06

Elevation:	<u>1412.0</u>	Date(s) Drilled:	<u>8/3/16</u>	Logged by:	<u>DRL</u>
Drilling Method:	<u>Rotary Auger</u>	Hammer Type:	<u>Auto-Trip</u>	Hammer Weight:	<u>140 lb.</u>
Drilling Rig:	<u>CME 75</u>	Hammer Drop:	<u>30-inches</u>		
Boring Diameter:	<u>8-inches</u>				

DEPTH (ft)	GRAPHIC	USCS	SUMMARY OF SUBSURFACE CONDITIONS  This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.	SAMPLES			BLOWS/6"	MOISTURE (%)	DRY UNIT WT. (pcf)	RELATIVE COMPACTION (%)
				DRIVE SAMPLE	BULK SAMPLE	SAMPLE TYPE				
5		SM BR	<b>SILTY SAND</b> , with clay, very fine- to fine-grained, olive-brown (2.5Y 4/3), slightly moist, loose. <b>PHYLLITE BEDROCK</b> , dark gray (2.5Y 3/1), slightly moist, hard. Moderately weathered. Fractured in sample.			SPT	32 50/5"	10		
						SPT	50/4"	6		
						SPT	50/5"	9		
			End of boring at 15.5 feet. No groundwater encountered.							




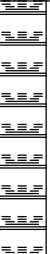
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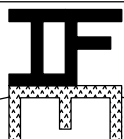
Geotechnical Investigation  
Temecula Valley Charter School  
Temecula, CA  
Project No. T238-001

Figure No.  
**A-8**

# LOG OF BORING B-07

Elevation:	<u>1412.0</u>	Date(s) Drilled:	<u>8/3/16</u>	Logged by:	<u>DRL</u>
Drilling Method:	<u>Rotary Auger</u>			Hammer Type:	<u>Auto-Trip</u>
Drilling Rig:	<u>CME 75</u>			Hammer Weight:	<u>140 lb.</u>
Boring Diameter:	<u>8-inches</u>			Hammer Drop:	<u>30-inches</u>

DEPTH (ft)	GRAPHIC	USCS	SUMMARY OF SUBSURFACE CONDITIONS <small>This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.</small>	SAMPLES			BLOWS/6"	MOISTURE (%)	DRY UNIT WT. (pcf)	RELATIVE COMPACTION (%)
				DRIVE SAMPLE	BULK SAMPLE	SAMPLE TYPE				
5		SM	<b>SILTY SAND</b> , with clay, very fine- to fine-grained, olive-brown (2.5Y 4/3), slightly moist, loose.							
		CL	<b>CLAY</b> , trace sand, dark brown (10YR 3/3), slightly moist, hard. Blocky.	X		SS	30 50/5"	13 13	92 101	
				X		SS	38 50/5"	11	116	
				X		SS	50/5"	10	106	
10		BR	<b>PHYLLITE BEDROCK</b> , olive-brown (2.5Y 4/3) to dark gray (2.5Y 3/1), moist, hard. Highly to moderately weathered. Fractured in sample. Rust mottling	X		SPT	31 50/2"	8		
15				X		SPT	50/4"	4		
			End of boring at 15.3 feet. No groundwater encountered. Rust mottling observed at 11 feet.							



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<b>Geotechnical Investigation</b>	Figure No.
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<b>Temecula, CA</b>	
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







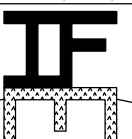
# LOG OF BORING B-08

Elevation:	<u>1413.0</u>	Date(s) Drilled:	<u>8/2/16</u>	Logged by:	<u>DRL</u>
Drilling Method:	<u>Rotary Auger</u>	Hammer Type:	<u>Auto-Trip</u>	Hammer Weight:	<u>140 lb.</u>
Drilling Rig:	<u>CME 75</u>	Hammer Drop:	<u>30-inches</u>		
Boring Diameter:	<u>8-inches</u>				

DEPTH (ft)	GRAPHIC	USCS	SUMMARY OF SUBSURFACE CONDITIONS  This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.	SAMPLES			BLOWS/6"	MOISTURE (%)	DRY UNIT WT. (pcf)	RELATIVE COMPACTION (%)	
				DRIVE SAMPLE	BULK SAMPLE	SAMPLE TYPE					
5		SC	<b>CLAYEY SAND</b> , very fine-grained, dark olive-brown (2.5Y 3/3), dry, very loose. Rootlets.			B	26	13	95		
		CL				SS					
		SC				B					50/5"
		CL				SS					31
						SS					50
10		SC	<b>CLAYEY SAND</b> , very fine- to fine-grained, dark yellowish-brown (10YR 3/4), slightly moist, dense. Moderately cemented.			SS	40	7	103		
		SM				B	50/4"				
		BR				SS	18	7	110		
							50				
15			<b>SANDY CLAY</b> , very fine-grained, dark brown (10YR 3/3), slightly moist, hard. Moderately to strongly cemented.			SS	31	13	101		
							50				
						SPT	43	11			
							50/5"				
						SPT	33	13			
20			<b>SILTY CLAYEY SAND</b> , with gravel, fine- to medium-grained, dark brown (10YR 3/3), moist, dense. Moderately to strongly cemented.								
25			<b>PHYLLITE BEDROCK</b> , very fine- to coarse-grained, dark gray (2.5Y 3/1), moist, hard. Moderately to highly weathered. Mottling. Strongly cemented. Moderately weathered.			SPT	43	11			
							50/5"				
						SPT	33	13			
							50/3"				
30						SPT	22	17			
							50				
35						SPT	50	9			
40						SPT	50	9			
45						SPT	50/3"	10			
50						SPT	50/2"	13			
			End of boring at 51 feet. Groundwater initially encountered at 48.1 feet. Final groundwater at 30 feet. Mottling observed at 15 feet.								






# LOG OF BORING B-09

Elevation:	<u>1409.0</u>	Date(s) Drilled:	<u>8/3/16</u>	Logged by:	<u>DRL</u>
Drilling Method:	<u>Rotary Auger</u>			Hammer Type:	<u>Auto-Trip</u>
Drilling Rig:	<u>CME 75</u>			Hammer Weight:	<u>140 lb.</u>
Boring Diameter:	<u>8-inches</u>			Hammer Drop:	<u>30-inches</u>

DEPTH (ft)	GRAPHIC	USCS	SUMMARY OF SUBSURFACE CONDITIONS <small>This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.</small>	SAMPLES			BLOWS/6"	MOISTURE (%)	DRY UNIT WT. (pcf)	RELATIVE COMPACTION (%)
				DRIVE SAMPLE	BULK SAMPLE	SAMPLE TYPE				
5		SC	<b>CLAYEY SAND</b> , very fine-grained, dark olive-brown (2.5Y 3/3), dry, very loose. Rootlets.			B				
		CL	<b>SANDY CLAY</b> , very fine-grained, dark brown (10YR 3/3), slightly moist, stiff to hard. Well cemented. Porous. Blocky.			B SS	31	7	112	
		BR	<b>PHYLLITE BEDROCK</b> , olive-brown (2.5Y 4/3) to dark gray (2.5Y 3/1), moist, hard. Highly to moderately weathered.			SS	50/5" 50/6"	12	86	
10			Rust-colored mottling			SPT	12 17	16		
						SPT	16 21	33		
15						SPT	30 50/5"	13		
			End of boring at 16 feet. No groundwater encountered. Rust-colored mottling observed at 10 feet.							
 <b>INLAND FOUNDATION ENGINEERING, INC.</b>							<b>Geotechnical Investigation</b> <b>Temecula Valley Charter School</b> <b>Temecula, CA</b> <b>Project No. T238-001</b>		Figure No.  <b>A-11</b>	

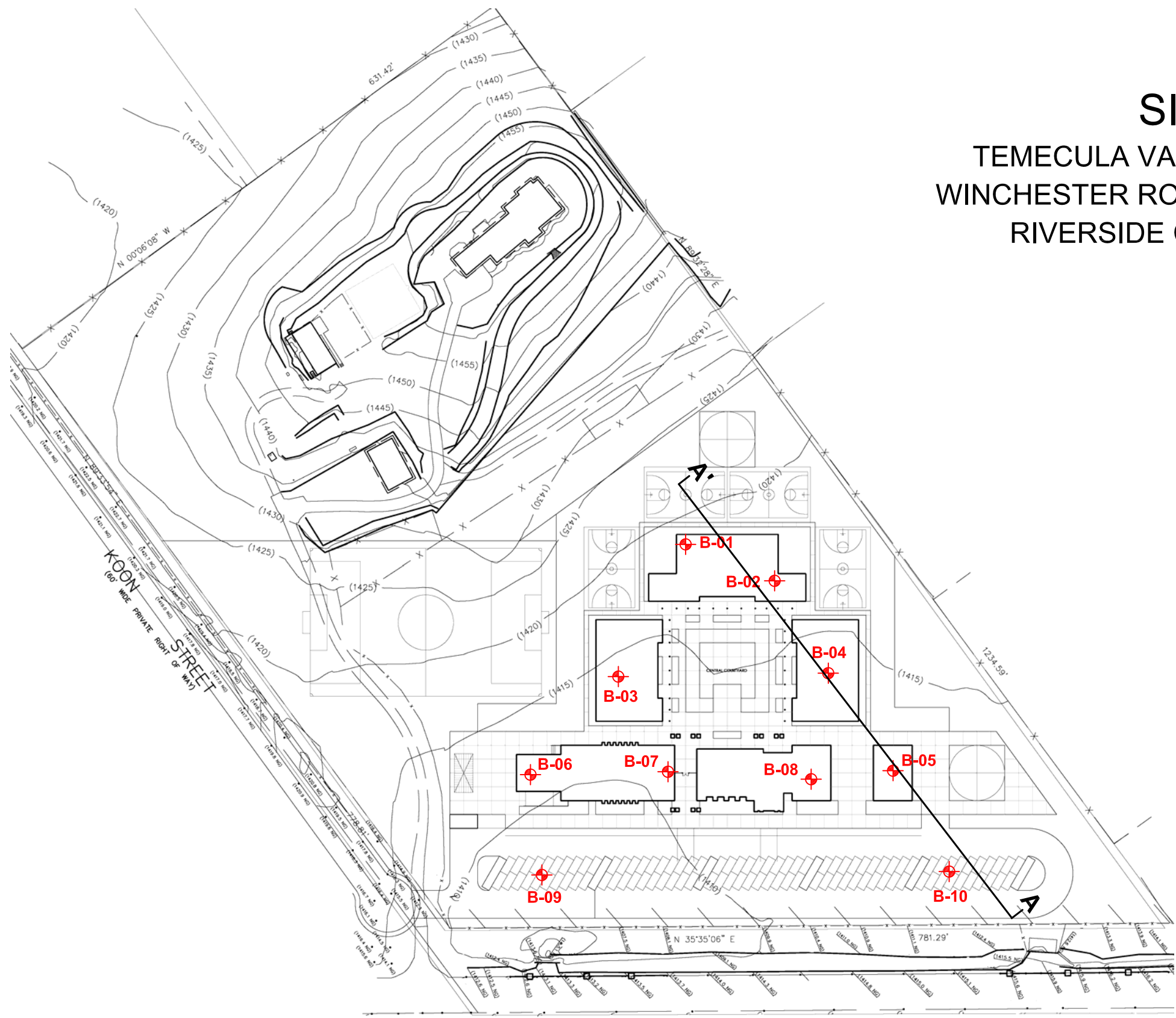
# LOG OF BORING B-10

Elevation:	<u>1412.0</u>	Date(s) Drilled:	<u>8/2/16</u>	Logged by:	<u>DRL</u>
Drilling Method:	<u>Rotary Auger</u>	Hammer Type:	<u>Auto-Trip</u>	Hammer Weight:	<u>140 lb.</u>
Drilling Rig:	<u>CME 75</u>	Hammer Drop:	<u>30-inches</u>		
Boring Diameter:	<u>8-inches</u>				

DEPTH (ft)	GRAPHIC	USCS	SUMMARY OF SUBSURFACE CONDITIONS <small>This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered and is representative of interpretations made during drilling. Contrasting data derived from laboratory analysis may not be reflected in these representations.</small>	SAMPLES			BLOWS/6"	MOISTURE (%)	DRY UNIT WT. (pcf)	RELATIVE COMPACTION (%)
				DRIVE SAMPLE	BULK SAMPLE	SAMPLE TYPE				
5		SC	<b>CLAYEY SAND</b> , very fine-grained, dark olive-brown (2.5Y 3/3), dry, very loose. Rootlets.			B				
		CL	<b>SANDY CLAY</b> , very fine- to fine-grained, dark olive-brown (2.5Y 3/3), slightly moist, hard. Moderately cemented. Porous.	X		SS	20 24	7	101	
				X		SS	15 16	9	96	
				X		SS	20 50	8	101	
10		CL	<b>SANDY CLAY</b> , with gravel, very fine- to medium-grained, very dark grayish-brown (2.5Y 3/2), moist, hard. Moderately cemented. Conglomerate.							
		BR	<b>PHYLLITE BEDROCK</b> , very fine- to coarse-grained, dark gray (2.5Y 3/1), moist, hard. Highly weathered.							
15				X		SS	45 45	8	115	
				X		SS	50/4"	5	104	
20				X		SPT	35 50/5"	7		
			End of boring at 21 feet. No groundwater encountered.							
 <b>INLAND FOUNDATION ENGINEERING, INC.</b>				<b>Geotechnical Investigation</b> <b>Temecula Valley Charter School</b> <b>Temecula, CA</b> <b>Project No. T238-001</b>						Figure No.
										<b>A-12</b>



**SITE PLAN**  
**TEMECULA VALLEY CHARTER SCHOOL**  
**WINCHESTER ROAD, FRENCH VALLEY AREA**  
**RIVERSIDE COUNTY, CALIFORNIA**



**LEGEND**

⊕ = Approximate Location of Exploratory Borings

A A' = Cross Section



WINCHESTER ROAD  
(VARIABLE WIDTH PUBLIC RIGHT OF WAY)

INLAND FOUNDATION ENGINEERING, INC. 1310 South Santa Fe Avenue San Jacinto, California (951) 654-1555 FAX (951) 654-0551		
DRAWN BY: ES	JOB NO.: T238-001	
SCALE: 1" = 125'	DATE: September 2016	A-13

## APPENDIX B

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## APPENDIX B

### LABORATORY TESTING

Representative bulk and intact soil samples were obtained in the field and returned to our laboratory for additional observations and testing. Laboratory testing was generally performed in two phases. The first phase consisted of testing in order to estimate the compaction of the existing natural soil and the general engineering classifications of the soils across the site. This testing was performed in order to estimate the engineering characteristics of the soil and to serve as a basis for selecting samples for the second phase of testing. The second phase consisted of soil mechanics and analytical testing. This testing included consolidation testing, direct shear testing and testing to estimate the concentration of water-soluble sulfate, pH, chlorides and resistivity. These tests were performed in order to provide a means of developing specific design recommendations based on the strength characteristics of the soil.

### CLASSIFICATION AND COMPACTION TESTING

**Unit Weight and Moisture Content:** Each relatively undisturbed sample was weighed and measured in order to determine its unit weight. A small portion of each sample was then subjected to testing in order to determine its moisture content. This testing was performed in accordance with the ASTM Standards D2937 and D2216. This was used in order to estimate the dry density of the soil in its natural condition. The results of this testing are shown on the Boring Logs (Figure Nos. A-2 through A-12).

**Maximum Density-Optimum Moisture Content:** Representative soil types were selected for maximum density tests. This testing was performed in accordance with the ASTM D1557. The results of this testing are presented graphically on Figure No. B-4. The maximum density is compared to the field density of the soil in order to estimate the existing relative compaction to the soil.

**Classification Testing:** Four soil samples were selected for classification testing. This testing consists of mechanical grain size analyses and Atterberg Limits tests. This testing was performed in accordance with ASTM D422 and D4318. These tests provide information for developing classifications for the soil in accordance with the Unified Classification System. This classification system categorizes the soil into groups having similar engineering characteristics. The results of this testing are useful in detecting variations in the soils and in selecting samples for further testing. The results of this testing are presented on Figure No. B-5.

## SOIL MECHANICS TESTING

**Direct Shear Testing:** Two samples were selected for direct shear testing. This testing was performed in accordance with ASTM D3080. This testing measures the shear strength of the soil under various normal pressures and is used in developing parameters for foundation design and lateral design. Testing was performed using recompacted test specimens which were saturated prior to testing. Testing was performed using a strain controlled test apparatus with normal pressures ranging from 500 to 2500 pounds per square foot. The results of this testing are shown on Figure No. B-6.

**Consolidation Testing:** Two samples were selected for consolidation testing. This testing was performed in accordance with ASTM D2435. For this test, relatively undisturbed samples were selected and carefully trimmed into a one inch thick by 2.41-inch diameter consolidometer. The consolidometer was moisture sealed in order to preserve the natural moisture content during the initial stages of testing. Loads ranging from 272 to 9,024 pounds per square foot were applied progressively with the rate of settlement declining to a value of 0.0002 inches per hour prior to the application of each subsequent load. At a preselected load, water was introduced into the consolidometer in order to observe the potential for saturation collapse. The results of this testing are presented graphically on Figure Nos. B-7 through B-8.

## ANALYTICAL TESTING

Two samples were selected to test the concentration of soluble sulfates, chlorides, pH level, and resistivity of and within the on-site soils. The following table presents the results of this testing:

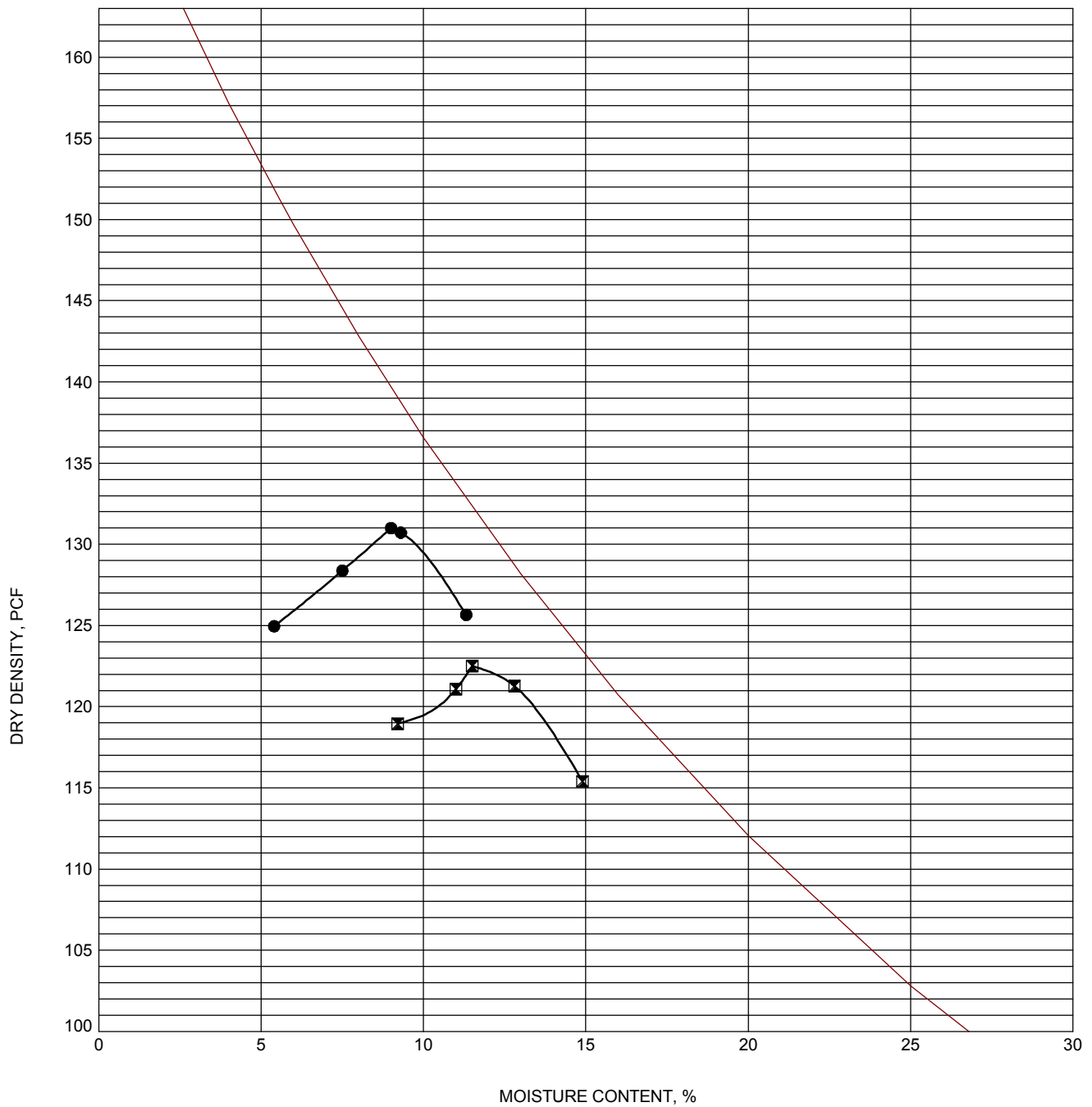
Sample Location	Sample Depth (ft.)	Water-Soluble Sulfates (□)	Chlorides (ppm)	Minimum Resistivity (ohm-cm)	PH
B-03	1.0-4.5	<0.001	90	2,600	7.8
B-05	0.5-10.0	<0.001	90	1,600	8.2

**Expansion Index Testing:** Two samples were selected for expansion index testing per the current ASTM Standard D4829. This testing consists of remolding 4-inch diameter by 1-inch thick test specimens to a moisture content and dry density corresponding to approximately 50 percent saturation. The samples are subjected to a surcharge of 144 pounds per square foot and allowed to reach equilibrium. At that point the specimens are inundated with distilled water. The linear expansion is then measured until complete. The results of this testing are shown below.

Sample Location	Sample Depth (feet)	Initial Dry Density (pcf)	Initial Moisture Content (%)	Expansion Index	Expansion Class
B-03	1.0-4.0	118.4	8.1	25	Low
B-05	0.0-10.0	112.0	10.2	66	Med

### GENERAL

All laboratory testing has been conducted in conformance with the applicable ASTM test methods by personnel trained and supervised in conformance with our QA/QC policy. Our test data only relates to the specific soils tested. Soil conditions typically vary and any significant variations should be reported to our laboratory for review and possible testing. The data presented in this report are for the use of Temecula Valley Charter School only and may not be reproduced or used by others without written approval of Inland Foundation Engineering, Inc.



Specimen Identification			Classification	Max. Density	MC%
●	B-03	1.0	CLAYEY SAND with GRAVEL SC	131.0	9.0
⊠	B-05	0.0	LEAN CLAY with SAND CL	122.5	11.5

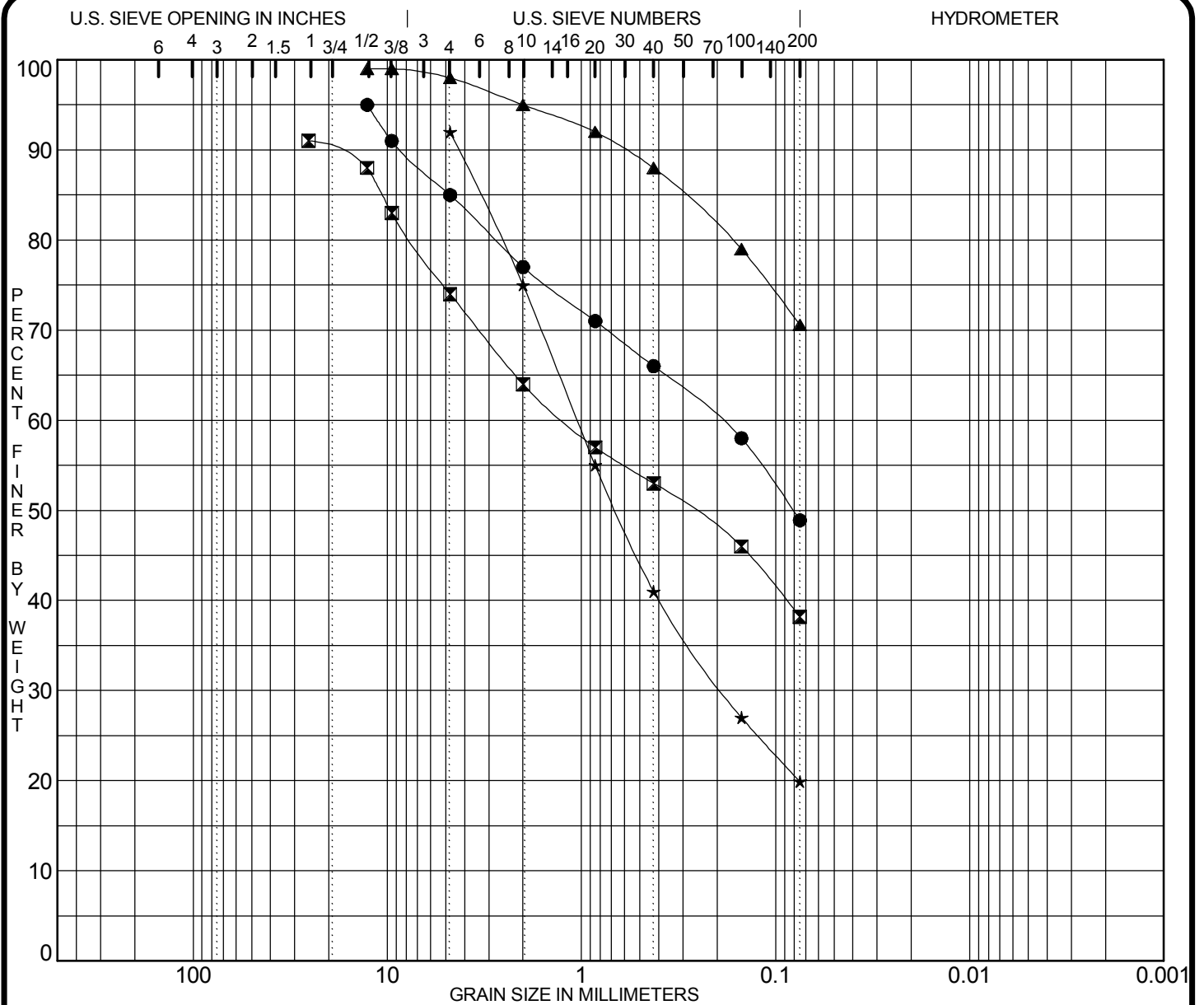
PROJECT Geotechnical Investigation  
Temecula Valley Charter School

PROJECT NO. T238-001  
DATE

## MAXIMUM DENSITY-OPTIMUM MOISTURE CURVES (ASTM D1557)

Inland Foundation Engineering, Inc

FIGURE NO. B-4



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification		S.G.	LL	PL	PI	Cc	Cu
● B-03 1.0	CLAYEY SAND with GRAVEL SC			25	14	11		
⊠ B-04 4.0	CLAYEY SAND with GRAVEL SC			31	17	14		
▲ B-05 0.0	LEAN CLAY with SAND CL			34	18	16		
★ B-09 3.0	CLAYEY SAND SC							

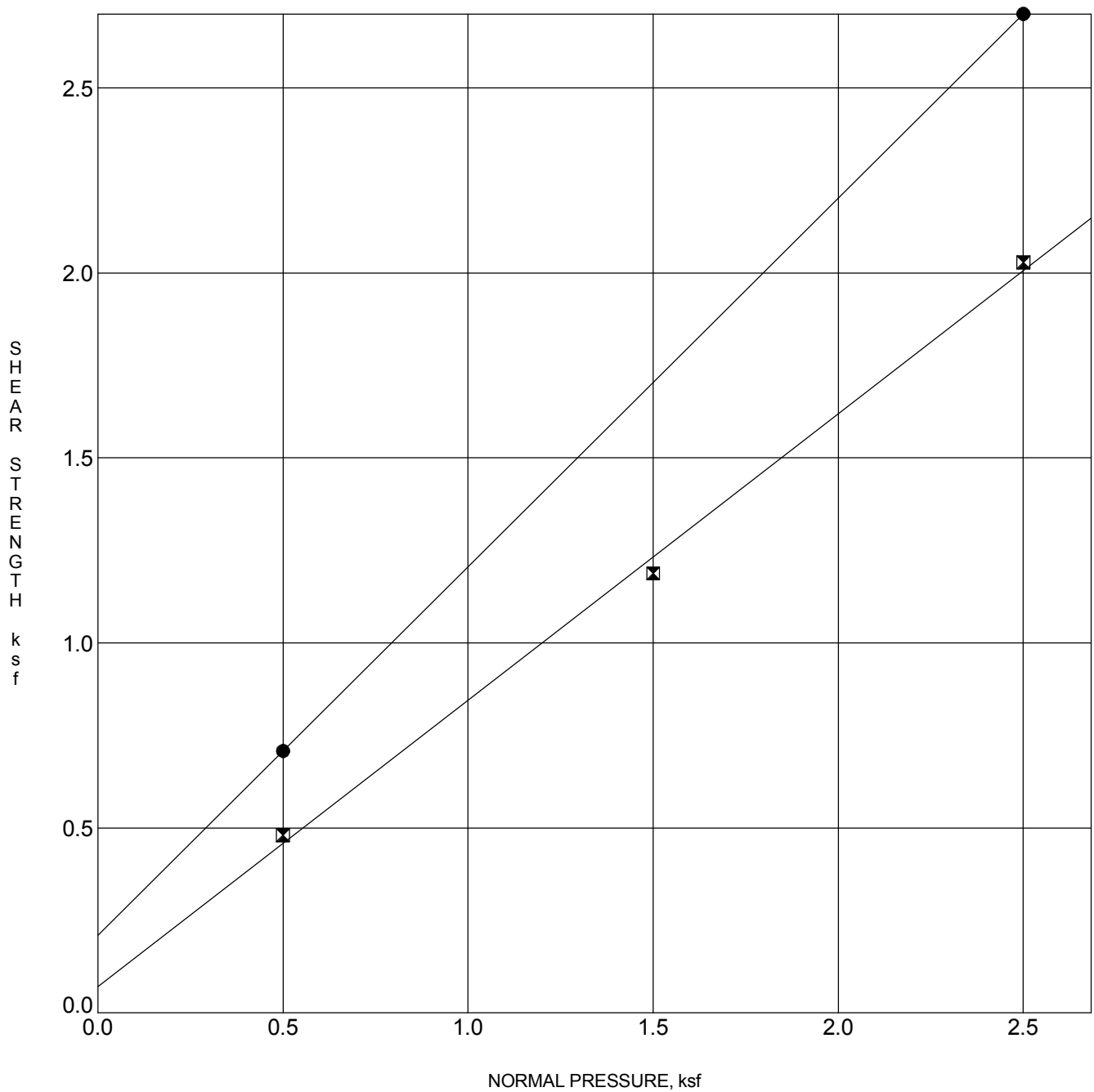
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-03 1.0	12.70	0.19			10.0	36.1	48.9	
⊠ B-04 4.0	25.40	1.23			17.0	35.8	38.2	
▲ B-05 0.0	12.70				1.0	27.4	70.6	
★ B-09 3.0	4.75	1.05	0.188		0.0	72.1	19.9	

PROJECT Geotechnical Investigation  
Temecula Valley Charter School

PROJECT NO. T238-001  
DATE

## GRADATION CURVES (ASTM D422, ASTM D4318)

Inland Foundation Engineering, Inc



Specimen Identification			Classification	Phi	Cohesion	DD	MC%
●	B-04	5.0	CLAYEY SAND, SC	45	0.210	113	9
⊠	B-07	2.5	CLAY, CL	38	0.070	102	12

PROJECT Geotechnical Investigation  
Temecula Valley Charter School

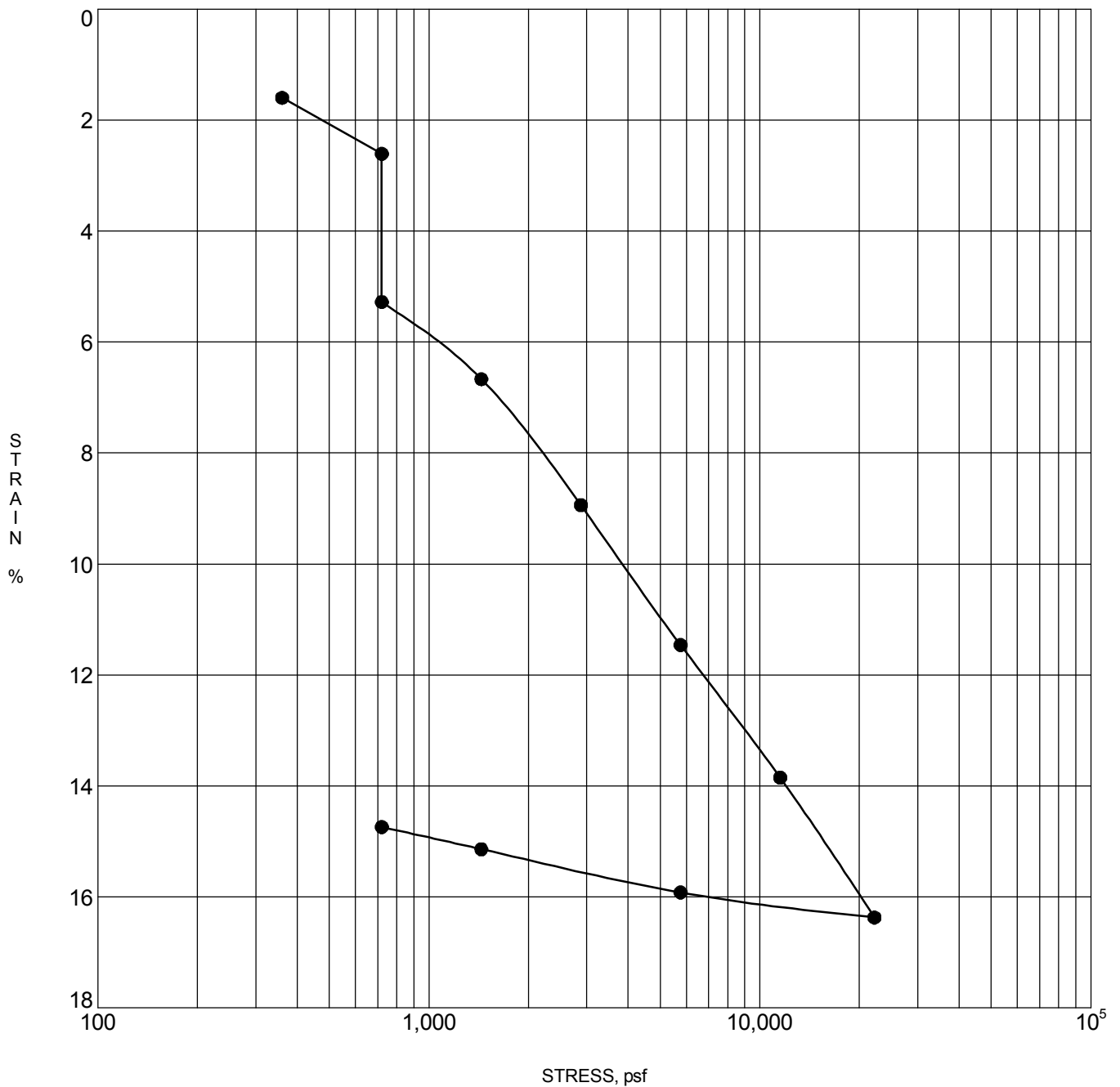
PROJECT NO. T238-001  
DATE

### SHEAR TEST DIAGRAM (ASTM D3080)

Inland Foundation Engineering, Inc

FIGURE NO. B-6





Specimen Identification			Classification	DD	MC%
●	B-04	5.0	CLAYEY SAND, SC	111	3
☒					
▲					
★					
⊙					
⊕					

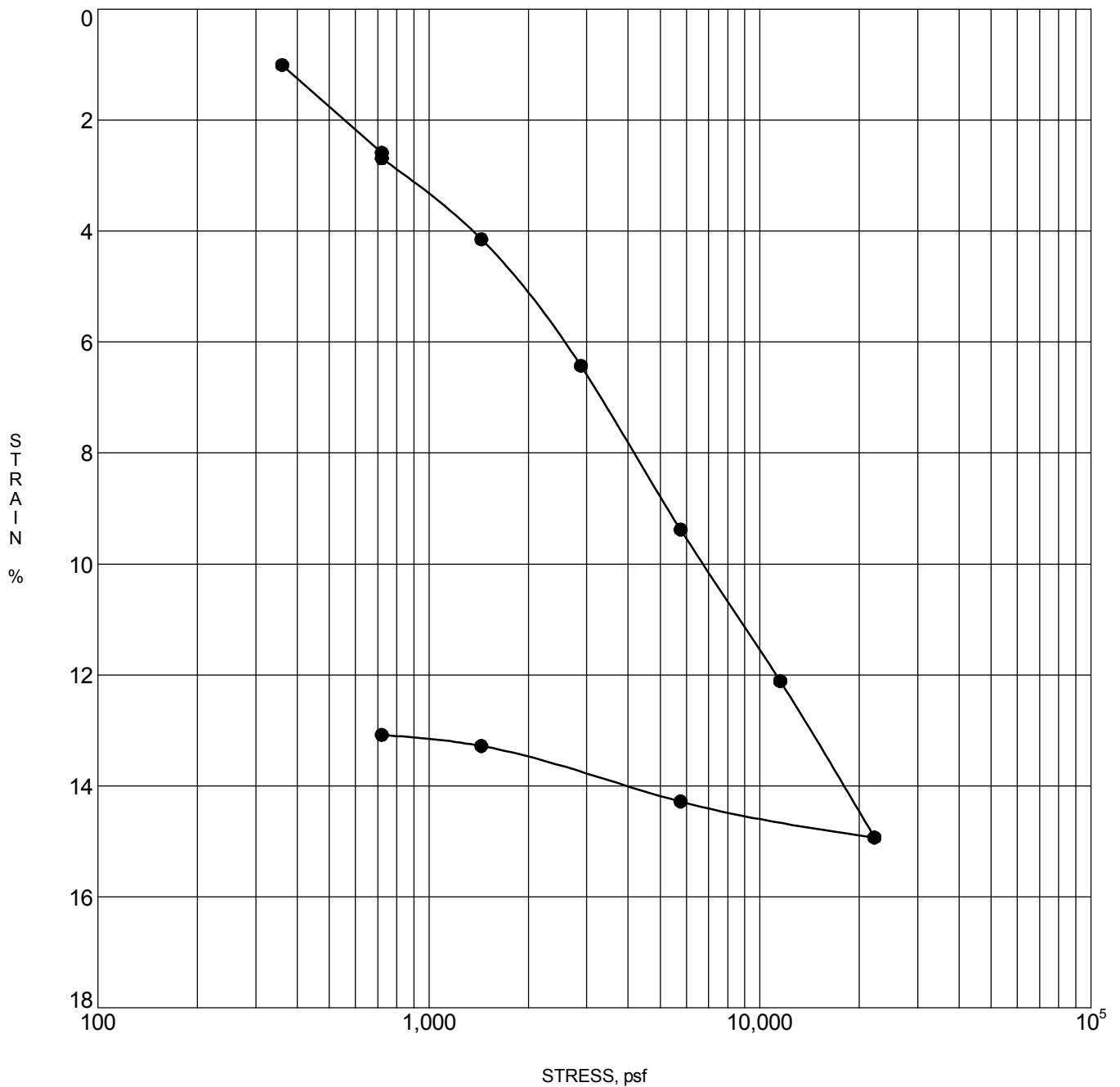
PROJECT Geotechnical Investigation  
Temecula Valley Charter School

PROJECT NO. T238-001  
DATE

### CONSOLIDATION TEST (ASTM D2435)

Inland Foundation Engineering, Inc

FIGURE NO. B-7



Specimen Identification			Classification	DD	MC%
●	B-07	2.5	CLAY, CL	101	13
☒					
▲					
★					
⊙					
⊕					

PROJECT Geotechnical Investigation  
Temecula Valley Charter School

PROJECT NO. T238-001  
DATE

### CONSOLIDATION TEST (ASTM D2435)

Inland Foundation Engineering, Inc

FIGURE NO. B-8

## Appendix

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## Appendix

# Appendix E Paleontological Technical Study



# PALEONTOLOGICAL TECHNICAL STUDY: TEMECULA VALLEY CHARTER SCHOOL PROJECT, RIVERSIDE COUNTY, CALIFORNIA

*Prepared for:*

**PLACEWORKS**

Jorge Estrada  
Senior Associate  
3 MacArthur Place, Suite 1100  
Santa Ana, CA 92707

*Prepared by:*

**PALEO SOLUTIONS, INC.**

911 S. Primrose Ave., Unit N  
Monrovia, CA 91016  
Geraldine@paleosolutions.com  
(562) 818-7713

Geraldine Aron, M.S. – Principal Investigator

3/1/17

Date

Paul C. Murphey, Ph.D. – Technical Reviewer

3/1/17

Date

Joey Raum, B.S. – Report Author

3/1/17

Date

Courtney Richards, M.S. – Report Author

3/1/2017

Date

PSI Report#: CA17RiversidePLA01R

**FEBRUARY 24, 2017**

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## 1.0 EXECUTIVE SUMMARY

This report presents the results of the paleontological technical study conducted by Paleo Solutions, Inc. (Paleo Solutions) under contract to PlaceWorks in support of the Temecula Valley Charter School Project (Project). This work was required by the County of Riverside Planning Department to meet their requirement as the lead agency under the California Environmental Quality Act (CEQA), and as part of the Development Review Team (DRT) condition. All paleontological work was completed in compliance with CEQA, Riverside County guidelines, and best practices in mitigation paleontology. The Project is located at 34155 Winchester Road in the community of French Valley in unincorporated western Riverside County, California (see Figure 1). The Project area lies on the USGS Winchester (1953) and Bachelor Mountain (1951) California 7.5' topographic quadrangles on privately owned land in the northwest-northwest, northeast-northwest, and southwest-northwest quarter quarters of Section 28, Township 6 South, Range 2 West (see Table 1; see Figure 2).

The Project area was evaluated based on an analysis of existing paleontological data and a field survey. The four components of the analysis included a geologic map review, a geotechnical report review, a literature search, institutional record searches. The analysis of existing data was supplemented with a pedestrian field survey, with the combined purpose of determining the paleontological potential of the Project area. Geologic mapping indicates that the Project area is primarily underlain by Mesozoic plutonic and metasedimentary rocks, Pleistocene very old alluvial valley deposits, and Quaternary young alluvial deposits (Morton and Kennedy, 2003; Dibblee and Minch, 2003; see Figure 3). It should be noted that the two geologic maps reviewed for the analysis differ on the age of the alluvial sediments in some portions of the Project area. Specifically, the northeast portion of the Project area is mapped as Holocene surficial sediments (Qa) by Dibblee and Minch, 2003, but is mapped as Pleistocene very old alluvial valley deposits (Qvova) by Morton and Kennedy, 2003).

According to the record search and literature search, there are no previously recorded fossil localities within the Project area; however, there are numerous other fossil localities recorded from Pleistocene-age sediments in southern California that are similar to those mapped in the Project area. The geotechnical report for the Project (Inland Foundation Engineering, Inc., 2016) indicates that Quaternary (Holocene or Pleistocene) sediments (which would have moderate paleontological potential if they are Pleistocene) will be impacted beginning at depths between one and two feet below the current ground surface. Additionally, the geotechnical report indicates that Mesozoic phyllite bedrock may be impacted as shallowly as one to ten feet deep. No paleontological resources were discovered during the field survey, although sediments conducive to fossil preservation were observed. Project activities may potentially result in significant adverse impacts to paleontological resources if these older alluvial sediments are encountered during excavation. Furthermore, the field survey did not resolve the Quaternary sediment age discrepancy in the two geologic maps (Dibblee and Minch, 2003 and Morton and Kennedy, 2003). Further investigation is therefore necessary to determine which mapped unit is correct and to ultimately determine the age of the Quaternary sediments underlying portions of the Project area.

The Potential Fossil Yield Classification (PFYC) system was applied to the results of the analysis of existing data and field survey. Pleistocene very old alluvium has moderate paleontological potential (PFYC Class 3). Holocene alluvium is estimated to be less than 10,000 years old, and has low paleontological potential (PFYC Class 2) because it is too young to contain in-situ fossils. However, these younger deposits may overlies older geologic units with higher paleontological potential which may be disturbed at depth. Fossils contained in artificial fill lack critical scientific information, and artificial fill is generally considered to have a low paleontological potential (PFYC Class 2). Mesozoic phyllite is formed high temperatures and pressures and will be devoid of recognizable fossils. Mesozoic phyllite therefore has a very low paleontological potential (PFYC Class 1).

Based on the ground disturbance necessary to complete the Project, there is potential for adverse impacts to scientifically significant paleontological resources within Pleistocene very old alluvial deposits underlying the thin veneer of Holocene soils or alluvial deposits within the Project area. Construction excavations which disturb Pleistocene-age sediments should be monitored by a professional paleontologist in order to reduce potential adverse impacts on scientifically important paleontological resources to a less than significant level. Prior to construction, a paleontological resources monitoring and mitigation plan (PRMMP) should be prepared. It should provide detailed recommended monitoring locations; a description of a worker training program; detailed procedures for monitoring, fossil recovery, laboratory analysis, and museum curation; a curation agreement; and notification procedures in the event of a fossil discovery by a paleontological monitor or other project personnel. Disturbance to Mesozoic-age phyllite should not be monitored. Because the Project area is nearly devoid of exposed sediments, the approximate ages (Holocene or Pleistocene) of the Quaternary deposits underlying the Project area could not be determined from the field survey. Additionally, the subterranean sediment descriptions provided in the geotechnical report are inconclusive for determining a Holocene versus Pleistocene age. Therefore, it is recommended that all excavations in all locations of the Project area be initially monitored for the presence of Pleistocene sediments and scientifically significant paleontological resources contained therein. If it is determined that only Holocene-age alluvium or Mesozoic-age phyllite is impacted, monitoring should be reduced or halted. Any potential fossils that are unearthed during construction should be evaluated by a professional paleontologist as described in the PRMMP.

## 2.0 INTRODUCTION

This report presents the results of the paleontological technical study conducted by Paleo Solutions under contract to PlaceWorks in support of the Temecula Valley Charter School Project. This work was required by the County of Riverside Planning Department to meet their requirement as the lead agency under the CEQA, and as part of the Development Review Team (DRT) condition. All paleontological work was completed in compliance with CEQA, Riverside County guidelines, and best practices in mitigation paleontology.

### 2.1 Project Location

The Project is located at 34155 Winchester Road in the community of French Valley in unincorporated western Riverside County, California (Figure 1). The site occupies two parcels of land totaling approximately 17.1 acres and is located primarily on vacant land. The Project is mapped on the USGS Winchester (1953) and Bachelor Mountain (1951) California 7.5' topographic quadrangles on privately owned land in the northwest-northwest, northeast-northwest, and southwest-northwest quarter quarters of Section 28, Township 6 South, Range 2 West (Table 1; Figure 2). The western portion is partially developed with several homes, a basketball court, a water well, above-ground storage tanks, and propane tanks. The eastern portion is vacant and has been recently graded. A partially paved road runs along the southern and eastern portions of the Project area and provides access from State Route (SR) 79. Geologic mapping of the Project indicates that the site is primarily underlain by Mesozoic plutonic and metasedimentary rocks, Pleistocene very old alluvial valley deposits, and Quaternary young alluvial deposits (Morton and Kennedy, 2003; Dibblee and Minch, 2003; Figure 3).

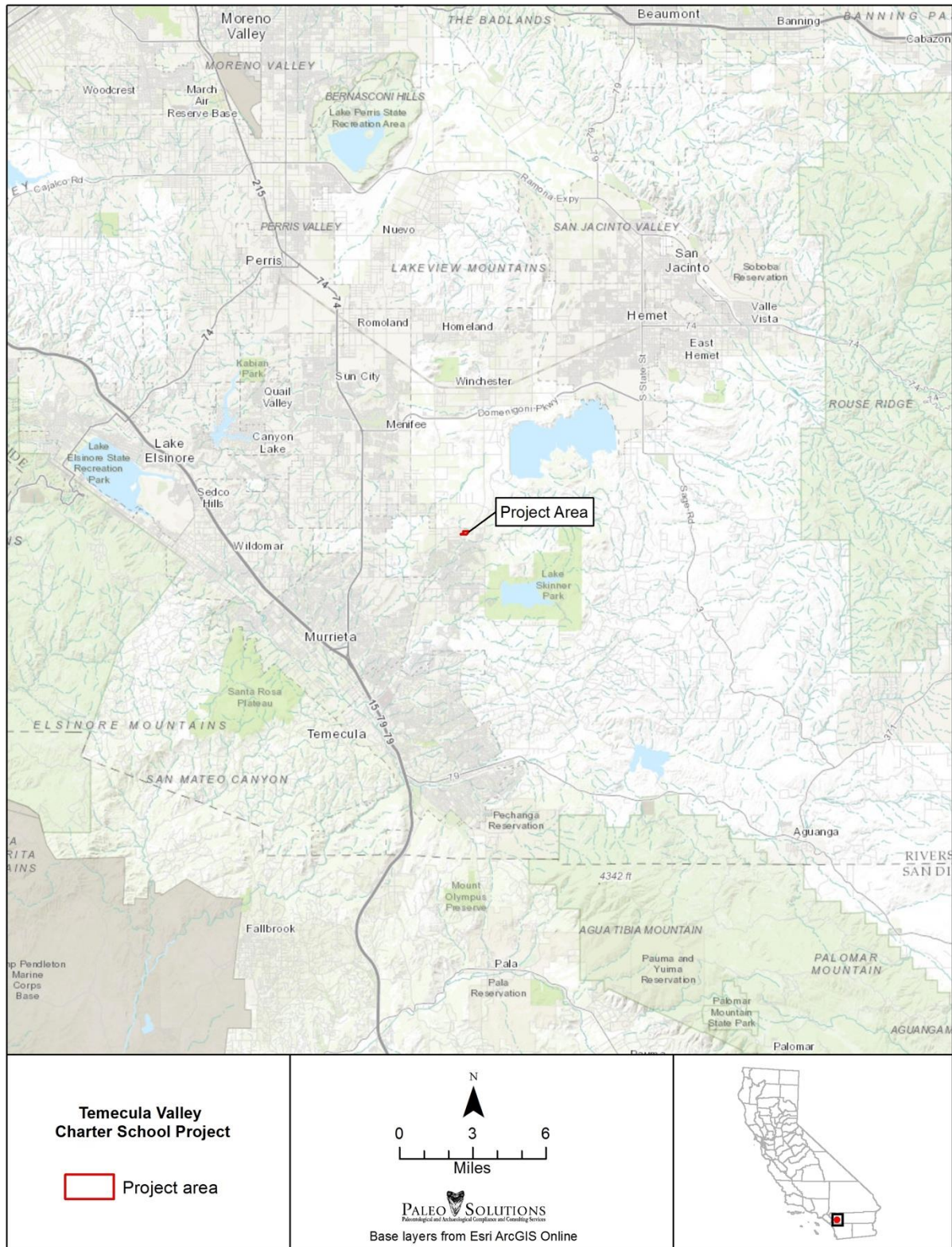
### 2.2 Project Background Description

The Project proposes to construct a new charter school that would serve up to 600 K-8 students. Six buildings would be constructed, totaling approximately 45,000 square feet. Vehicular access and parking will be accommodated by the construction of a driveway at the southeast corner of the Project site, construction of Koon Street which would connect the Project site to the existing Pourroy Road, and construction of a parking lot consisting of 98 parking spaces. Additionally, athletic facilities including hardtop courts and a turf field will be constructed. Landscaping will include installation of trees, shrubs, and ground cover.

**TABLE 1. TEMECULA VALLEY CHARTER SCHOOL PROJECT SUMMARY**

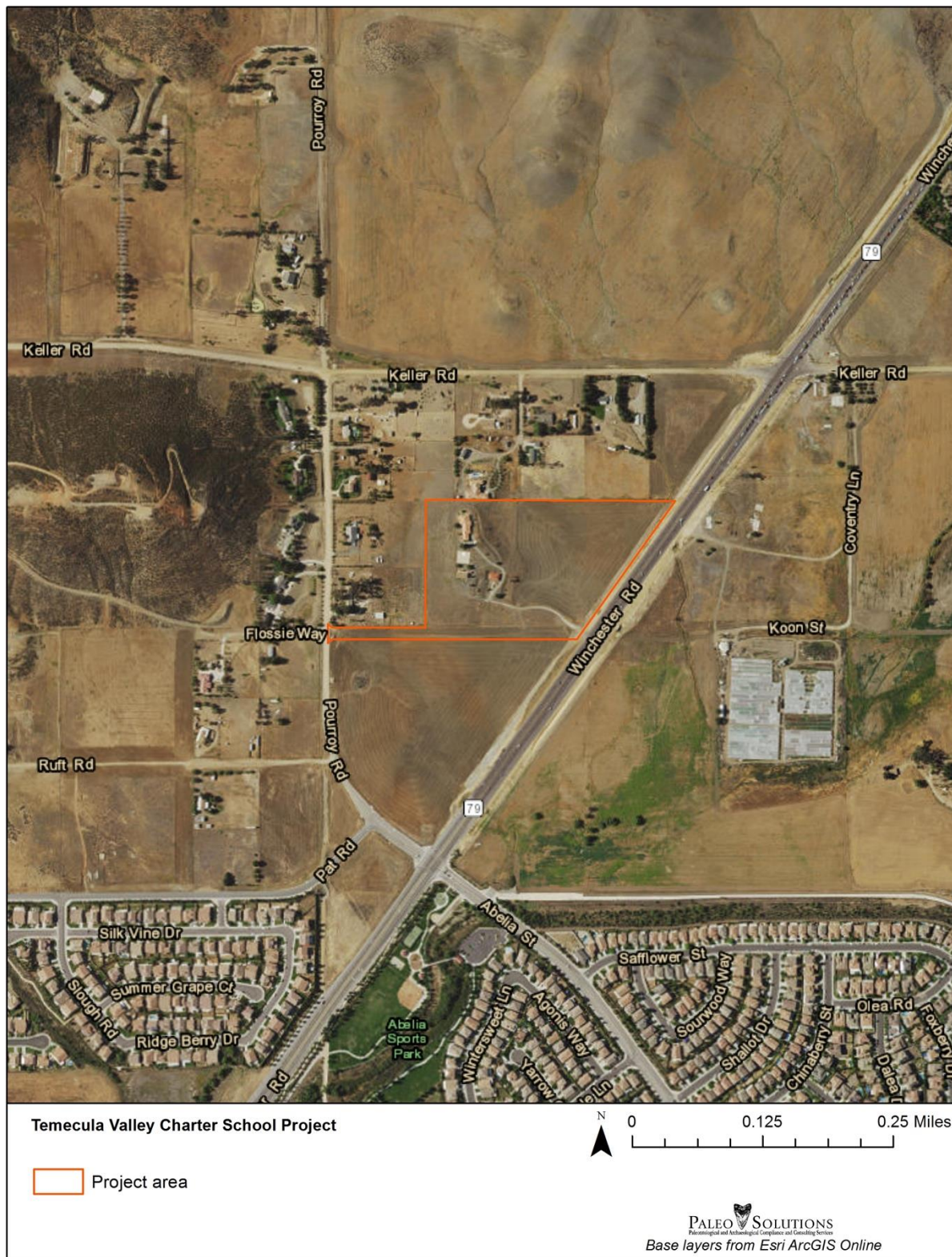
<b>Project Name</b>	Temecula Valley Charter School Project				
<b>Project Description</b>	The Project proposes to construct six buildings totaling approximately 45,000 square feet, a driveway, a new road (Koon Street) that will connect the site to Pourroy Road, and a parking lot.				
<b>Project Area</b>	The Project area is located at 34155 Winchester Road in the community of French Valley in unincorporated western Riverside County, California.				
<b>Total Acreage</b>	17.1 acres				
<b>Location (PLSS) and Land Ownership</b>	<b>Quarter-Quarter</b>	<b>Section</b>	<b>Township</b>	<b>Range</b>	<b>Land Ownership</b>
	NWNW, NENW, SWNW	28	T6S	R2W	undetermined

<b>Topographic Map(s)</b>	USGS Winchester (1953) and Bachelor Mountain (1951) California 7.5' quadrangles			
<b>Geologic Map(s)</b>	Geologic Map of the Winchester 7.5' quadrangle, Riverside County, California (Dibblee and Minch, 2003); Geologic Map of the Bachelor Mountain 7.5' quadrangle, Riverside County, California (Morton and Kennedy, 2003)			
<b>Mapped Geologic Formations and Age</b>	<b>Formation</b>	<b>Map Symbol</b>	<b>Age</b>	<b>Paleontological Sensitivity (PFYC)</b>
	Quaternary valley alluvial deposits	Qa	Holocene	2 (Low)
	Quaternary alluvial channel deposits	Qyaa	Holocene	2 (Low)
	Quaternary very old valley alluvial deposits	Qvova	Holocene to Pleistocene	3 (Moderate)
	Gabbro of the Peninsular Ranges batholith	Kgb	Cretaceous	1 (Very Low)
	Granodiorite, undifferentiated of the Peninsular Ranges batholith	Kgd	Cretaceous	1 (Very Low)
	Phyllite	Mzp	Mesozoic	1 (Very Low)
<b>Permits</b>	No permits were required for the paleontological work conducted for this Project.			
<b>Previously Documented Fossil Localities within the Project area</b>	The Western Science Center records search yielded no fossil localities recorded within a one-mile radius of the Project area (Appendix A).			
<b>Recommendations</b>	Construction excavations which disturb Pleistocene-age sediments should be monitored by a professional paleontologist in order to reduce potential adverse impacts on scientifically important paleontological resources to a less than significant level. Prior to construction, a paleontological resources monitoring and mitigation plan (PRMMP) should be prepared. It should provide detailed recommended monitoring locations; a description of a worker training program; detailed procedures for monitoring, fossil recovery, laboratory analysis, and museum curation; a curation agreement with the Western Science Center or another accredited repository; and notification procedures in the event of a fossil discovery by a paleontological monitor or other project personnel. Because the Project area is nearly devoid of exposed sediments, the approximate ages (Holocene or Pleistocene) of the Quaternary deposits underlying the Project area could not be determined from the field survey. Additionally, the subterranean sediment descriptions provided in the geotechnical report are inconclusive for determining a Holocene versus Pleistocene age. Therefore, it is recommended that all excavations in all locations of the Project area be initially monitored for the presence of Pleistocene sediments and scientifically significant paleontological resources contained therein. If it is determined that only Holocene-age alluvium or Mesozoic-age phyllite is impacted, monitoring should be reduced or halted. Any potential fossils that are unearthed during construction should be evaluated by a professional paleontologist as described in the PRMMP.			



**Figure 1. Project Location Map.**





**Figure 2. Project Overview Map.**

### **3.0 DEFINITION AND SIGNIFICANCE OF PALEONTOLOGICAL RESOURCES**

As defined by Murphey and Daitch (2007): “Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. Paleontological resources include not only fossils themselves, but also the associated rocks or organic matter and the physical characteristics of the fossils’ associated sedimentary matrix.

The fossil record is the only evidence that life on earth has existed for more than 3.6 billion years. Fossils are considered non-renewable resources because the organisms they represent no longer exist. Thus, once destroyed, a fossil can never be replaced. Fossils are important scientific and educational resources because they are used to:

- Study the phylogenetic relationships amongst extinct organisms, as well as their relationships to modern groups;
- Elucidate the taphonomic, behavioral, temporal, and diagenetic pathways responsible for fossil preservation, including the biases inherent in the fossil record;
- Reconstruct ancient environments, climate change, and paleoecological relationships;
- Provide a measure of relative geologic dating that forms the basis for biochronology and biostratigraphy, and which is an independent and corroborating line of evidence for isotopic dating;
- Study the geographic distribution of organisms and tectonic movements of land masses and ocean basins through time;
- Study patterns and processes of evolution, extinction, and speciation; and
- Identify past and potential future human-caused effects to global environments and climates.”

Fossil resources vary widely in their relative abundance and distribution and not all are regarded as significant. According to the Bureau of Land Management (BLM) Instructional Memorandum (IM) 2009-011, a “Significant Paleontological Resource” is defined as:

"Any paleontological resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be of scientific interest if it is a rare or previously unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has an identified educational or recreational value. Paleontological resources that may be considered not to have scientific significance include

those that lack provenience or context, lack physical integrity due to decay or natural erosion, or that are overly redundant or are otherwise not useful for research. Vertebrate fossil remains and traces include bone, scales, scutes, skin impressions, burrows, tracks, tail drag marks, vertebrate coprolites (feces), gastroliths (stomach stones), or other physical evidence of past vertebrate life or activities" (BLM, 2008)."

Vertebrate fossils, whether preserved remains or track ways, are classified as significant by most state and federal agencies and professional groups (and are specifically protected under Division 1 of the California Public Resources Code, Section 5020.1 [b]). In some cases, fossils of plants or invertebrate animals are also considered significant and can provide important information about ancient local environments. Assessment of significance is also subject to the CEQA criterion that the resource constitutes a "unique paleontological resource or site."

## **4.0 LAWS, ORDINANCES, REGULATIONS AND STANDARDS**

This section of the report presents the regulatory requirements pertaining to paleontological resources that will apply to this Project.

### **4.1 State and Local Regulatory Setting**

The following subsections describe the applicable state and local regulations.

#### ***4.1.1 California Environmental Quality Act (CEQA)***

The procedures, types of activities, persons, and public agencies required to comply with the California Environmental Quality Act (CEQA) are defined in the Guidelines for Implementation of CEQA (State CEQA Guidelines), as amended on March 18, 2010 (Title 14, Section 15000 et seq. of the California Code of Regulations [i.e., 14 CCR Section 15000 et seq.) and further amended January 4th, 2013. One of the questions listed in the CEQA Environmental Checklist is: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (State CEQA Guidelines Section 15064.5 and Appendix G, Section V, Part C).

#### ***4.1.2 State of California Public Resources Code***

The State of California Public Resources Code (Chapter 1.7), Sections 5097.5 and 30244, includes additional state level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on state lands, define the removal of paleontological "sites" or "features" from state lands as a misdemeanor, and prohibit the removal of any paleontological "site" or "feature" from State land without permission of the jurisdictional agency. These protections apply only to State of California land, and thus apply only to portions of the project, if any, which occur on State land.



#### **4.1.3 Riverside County General Plan**

The Riverside County General Plan recommends that a paleontologist examine the sediments of Undetermined sensitivity to determine their sensitivity, defines a significant impact on paleontological resources, and requires monitoring of activities within High sensitivity areas that may affect paleontological resources. It also requires that a final report be submitted to the Riverside County Planning Department documenting the findings of the monitoring and mitigation work (County of Riverside, 2003). Riverside County General Plan recommendations are based on the Society of Vertebrate Paleontology (SVP) Guidelines.

The Multipurpose Open Space Element of the Riverside County General Plan provides the following requirements for paleontologically sensitive areas within the county:

- OS 19.8 Whenever existing information indicates that a site proposed for development may contain biological, paleontological, or other scientific resources, a report shall be filed stating the extent and potential significance of the resources that may exist within the proposed development and appropriate measures through which the impacts of development may be mitigated.
- OS 19.9 This policy requires that when existing information indicates that a site proposed for development may contain paleontological resources, a paleontologist shall monitor site grading activities, with the authority to halt grading to collect uncovered paleontological resources, curate any resources collected with an appropriate repository, and file a report with the Planning Department documenting any paleontological resources that are found during the course of site grading.
- OS 19.10 Transmit significant development applications subject to CEQA to the San Bernardino County Museum (SBCM) for review, comment, and/or preparation of recommended conditions of approval with regard to paleontological resources.\*

\*The SBCM is not currently able to fulfil this role due to a change in the paleontology department staff.

#### **4.2 Permits**

No permits were required for the paleontological work conducted for the Project.

### **5.0 METHODS**

This paleontological analysis of existing data included a geologic map review, a geotechnical report review, a literature search, an institutional record search, and a field survey. The goal of this report is to evaluate the paleontological potential of the Project area and make recommendations for the mitigation of adverse impacts on paleontological resources that may occur as a result of the proposed construction.

## 5.1 Paleontological Analysis

Paleo Solutions reviewed two geologic maps of the Project area published by T.W. Dibblee and J.A. Minch (2003) and Morton and Kennedy (2003). The literature reviewed included published and unpublished scientific papers. A paleontological record search was conducted at the Western Science Center in Hemet, California. Darla Radford, M.A. performed the search. The results of the record search (dated January 18, 2017) are attached as Appendix A. Additional record searches of online databases were completed by Paleo Solutions staff. Joey Raum, B.S. conducted the field survey, performed the background research, and co-authored this report with Courtney Richards, M.S. Geraldine Aron, M.S. oversaw all aspects of the Project as the Paleontological Principal Investigator. Courtney Richards and Paul Murphey, Ph.D. performed the technical review of this report. GIS maps were prepared by Barbara Webster, M.S.

## 5.2 Paleontological Potential Classification Criteria

The PFYC system was developed by the Bureau of Land Management (BLM, 2016). Because of its demonstrated usefulness as a resource management tool, the PFYC has been utilized for many years for projects across the country, regardless of land ownership. It is a predictive resource management tool that classifies geologic units on their likelihood to contain paleontological resources on a scale of 1 (very low potential) to 5 (very high potential). This system is intended to aid in predicting, assessing, and mitigating paleontological resources. The PFYC ranking system is summarized in Table 2, along with the Riverside County guideline paleontological sensitivity rankings, which are included for a comparison of the two systems.

**TABLE 2. POTENTIAL FOSSIL YIELD CLASSIFICATION (BLM, 2016) COMPARED TO THE RIVERSIDE COUNTY GENERAL PLAN (2003).**

BLM PFYC Designation	*Riverside County Paleontological Sensitivity	Assignment Criteria Guidelines and Management Summary (PFYC system)
1 = Very Low Potential	Low Sensitivity	Geologic units are not likely to contain recognizable paleontological resources.
		Units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units.
		Units are Precambrian in age.
		Management concern is usually negligible, and impact mitigation is unnecessary except in rare or isolated circumstances.
2 = Low Potential**	High B Sensitivity	Geologic units are not likely to contain paleontological resources.
		Field surveys have verified that significant paleontological resources are not present or are very rare.
		Units are generally younger than 10,000 years before present.
		Recent aeolian deposits
		Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely
		Management concern is generally low, and impact mitigation is usually unnecessary except in occasional or isolated circumstances.

BLM PFYC Designation	*Riverside County Paleontological Sensitivity	Assignment Criteria Guidelines and Management Summary (PFYC system)
3 = Moderate Potential	High A Sensitivity	Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.
		Marine in origin with sporadic known occurrences of paleontological resources.
		Paleontological resources may occur intermittently, but these occurrences are widely scattered
		The potential for authorized land use to impact a significant paleontological resource is known to be low-to-moderate.
		Management concerns are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Opportunities may exist for hobby collecting. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action could affect the paleontological resources.
4 = High Potential	High A Sensitivity	Geologic units that are known to contain a high occurrence of paleontological resources.
		Significant paleontological resources have been documented but may vary in occurrence and predictability.
		Surface-disturbing activities may adversely affect paleontological resources.
		Rare or uncommon fossils, including nonvertebrate (such as soft body preservation) or unusual plant fossils, may be present.
		Illegal collecting activities may impact some areas.
5 = Very High Potential	High A Sensitivity	Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.
		Significant paleontological resources have been documented and occur consistently
		Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities.
		Unit is frequently the focus of illegal collecting activities.
		Management concern is high to very high. A field survey by a qualified paleontologist is almost always needed and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.
U = Unknown Potential	Undetermined Sensitivity	Geologic units that cannot receive an informed PFYC assignment
		Geological units may exhibit features or preservational conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is unknown.
		Geologic units represented on a map are based on lithologic character or basis of origin, but have not been studied in detail.
		Scientific literature does not exist or does not reveal the nature of paleontological resources.
		Reports of paleontological resources are anecdotal or have not been verified.

BLM PFYC Designation	*Riverside County Paleontological Sensitivity	Assignment Criteria Guidelines and Management Summary (PFYC system)
		Area or geologic unit is poorly or under-studied.
		BLM staff has not yet been able to assess the nature of the geologic unit.
		Until a provisional assignment is made, geologic units with unknown potential have medium to high management concerns. Field surveys are normally necessary, especially prior to authorizing a ground-disturbing activity.

\*Riverside County guidelines paleontological sensitivity rankings comparison to BLM PFYC rankings. This comparison does not denote an absolute correlation between the rankings.

\*\*Sensitivity may increase with depth.

## 6.0 GEOLOGY AND PALEONTOLOGY

The Peninsular Ranges Geomorphic Province is a region characterized by northwest-trending fault-bounded mountain ranges, broad intervening valleys, and low-lying coastal plains (Yerkes et al., 1965). The Peninsular Ranges extend approximately 920 miles from Los Angeles Basin to the southern tip of Baja California, and vary in width from approximately 30 to 100 miles. Bedrock units in the Peninsular Ranges include Jurassic-age igneous rocks of the Southern California Batholith (Yerkes et al., 1965). The Project area is situated in the central portion of the Perris Block, which is a fault-bounded block comprising part of the northern Peninsular Ranges; the block is bounded by the San Jacinto Fault on the east, the Elsinore-Chino Fault zones on the west, and the Cucamonga Fault on the north (Woodford et al., 1971). The Project area lies in a broad valley with interspersed hills that is bounded by the Santa Ana Mountains and the San Jacinto Mountains to the southwest and northwest, respectively. The Project area is underlain primarily by Holocene-age to Pleistocene-age sedimentary deposits and Mesozoic-age phyllite (Morton and Kennedy, 2003; Dibblee and Minch, 2003).

### 6.1 Literature Search

Several published sources including geologic maps and scientific papers were reviewed for this study. Aerial imagery shows that the Project area surface is relatively flat and predominantly covered by native sediments and vegetation as well as unmapped artificial fill emplaced by previous construction projects. A review of the geologic maps (Morton and Kennedy, 2003; Dibblee and Minch, 2003) shows that the Project area is predominantly mapped as Pleistocene very old alluvial valley deposits (Qvova), Holocene alluvial valley deposits (Qa), and Mesozoic phyllite (Mzp) (Figure 3). For this study, the mapping by Dibblee and Minch (2003) was used in the Winchester USGS 7.5' Topographic Quadrangle (northern Project area), and the mapping by Morton and Kennedy (2003) was used in the Bachelor Mountain 7.5' Topographic Quadrangle (southern Project area). A comparison of the two maps revealed differences in the interpreted ages of the Quaternary surficial sedimentary deposits. Specifically, the northeast portion of the Project area is mapped as Holocene surficial sediments (Qa) by Dibblee and Minch (2003), and Pleistocene very old alluvial valley deposits (Qvova) by Morton and Kennedy (2003). This significantly different geologic interpretation indicates further investigation will be needed to correctly determine the age of the sedimentary deposits underlying this portion of the Project area.

The paleontological sensitivity of the geologic units was determined using the PFYC system (see Section 5.2). The paleontological sensitivity rankings of each geologic unit crossed by the Project are listed in Table 1. The geographic distribution of the geologic units within the Project area is illustrated in Figure 3.

#### **6.1.1 Mesozoic Plutonic and Metasedimentary Units (Kgb, Kgd, Mzp)**

Mesozoic-age rock units consist of hornblende gabbro (Kgb), biotite and hornblende-biotite granodiorite (Kgd), and phyllite (Mzp). Phyllite is mapped within the Project area in the central, northwest corner, and southeast corner. According to the geotechnical report (Inland Foundation Engineering, 2016), phyllite bedrock underlies the Quaternary alluvial sediments in the Project area between one and ten feet below the current ground surface. Additionally, gabbro (Kgb) is mapped west of the Project area, and granodiorite (Kgd) is mapped as two small slivers southwest of the Project area (Figure 3). Igneous rocks formed deep within the Earth's surface at high temperature and high pressure and lack fossil resources. Metamorphic rocks have been deformed by heat and pressure and will usually be devoid of recognizable fossil remains. Igneous and metamorphic rocks are therefore considered to have very low paleontological potential (Class 1) using the PFYC system and low sensitivity per Riverside County guidelines (2003).

#### **6.1.2 Pleistocene Very Old Alluvial Deposits (Qvova)**

Pleistocene very old alluvial valley deposits (Qvova) comprise fluvial sediments deposited on broad canyon floors by ancient river and stream systems. These sediments were shed from adjacent mountain ranges during uplift associated with fault activity. Older alluvial sediments are heavily dissected and consist of moderately to well-indurated, reddish-brown, clay, silt, sand and gravel (Morton and Kennedy, 2003). Pleistocene very old alluvial deposits are mapped on the majority of the western Project area as well as the northeast corner (Figure 3).

Taxonomically diverse and locally abundant Pleistocene animals and plants have been collected from older alluvial deposits similar to those mapped in the Project area throughout southern California and include mammoth, mastodon, camel, horse, bison, giant ground sloth, peccary, cheetah, lion, saber tooth cat, capybara, dire wolf, and numerous taxa of smaller mammals (Jahns, 1954; Cooper and Eisentraut, 2002; Jefferson, 1991). Pleistocene very old alluvial deposits have moderate paleontological potential (Class 3) using the PFYC system and high (A) sensitivity per Riverside County guidelines (2003).

Pleistocene older alluvium has produced numerous Pleistocene-age vertebrate fossils in the Project vicinity as well as elsewhere in Riverside County (Cooper and Eisentraut, 2002; Jefferson, 1991; Springer et al., 2009). Most notable is the massive fossil collection recovered during excavation for Diamond Valley Lake, which is located northeast of the Project area. These sediments have yielded tens of thousands of fossils corresponding to the late Irvingtonian and early Rancholabrean North American Land Mammal Ages (Reynolds and Reynolds, 1990a; 1990b). The Diamond Valley Lake Local Fauna (DVLLF) is the largest open, non-asphaltic late Pleistocene fossil assemblage known in the southwestern United States (Springer et al., 2009). The assemblage comprises 2,646 localities and includes nearly 100,000 identifiable fossils representing more than 105 vertebrate, invertebrate, and plant taxa (Springer et al., 2009). Vertebrate fossils are generally

well-preserved and relatively complete and provide important data on the relative abundance and diversity of species through time at the given geographical location (Springer et al., 2009). A complete list of DVLLF taxa is provided in Table 3.

Furthermore, the Pauba Formation, which is geologically correlative with Pleistocene older alluvium, has produced numerous specimens of well-preserved fossil vertebrates of late Pleistocene age during excavations for a nearby housing development project in Temecula, Riverside County. These fossils were discovered during monitoring in 2004 and included scientifically significant specimens from six different taxa: *Mammuthus columbi* (mammoth), *Equus* spp. (horse), *Bison antiquus* (bison), cf. Camelidae (camel family), Rodentia (rodent family), and Serpentes (snake) (Table 3; SWCA, 2004).

### **6.1.3 Quaternary Young Alluvial Deposits (Qa, Qyaa)**

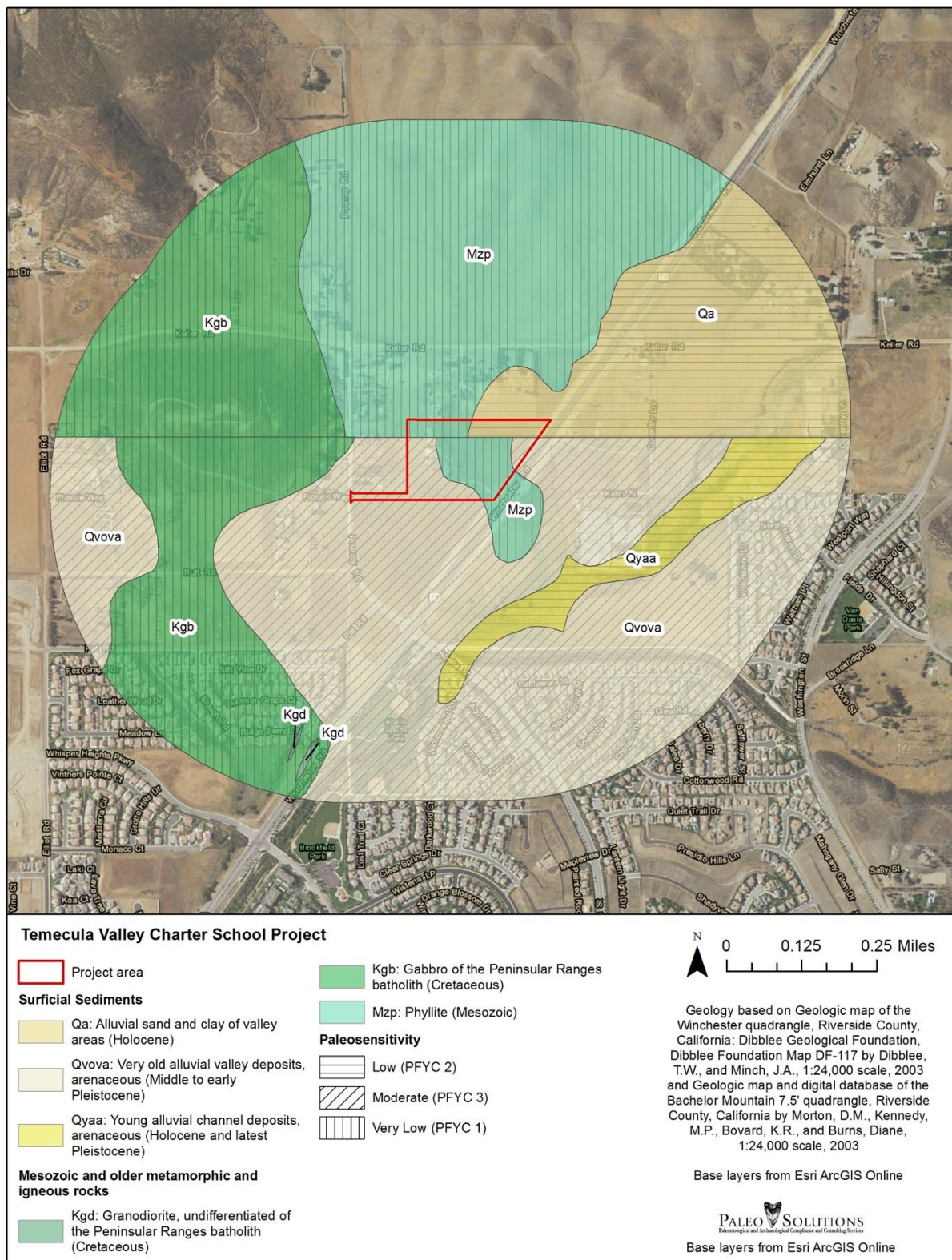
Quaternary young alluvial deposits (Qa, Qyaa) are Holocene-age (10,000 years ago – Recent) and are composed of gravel, sand, and clay that comprise valleys and alluvial fans. Quaternary deposits are poorly consolidated and represent sedimentation associated with current and former major rivers and streams. Generally rounded to well-rounded, these gravels are comprised of igneous and metamorphic rocks from the local mountains that have been washed downstream over time (Dibblee and Minch, 2003; Morton and Kennedy, 2003). The alluvium is covered with greyish colored soil. Quaternary valley alluvium (Qa) is mapped in the northeast corner of the Project area, and alluvial channel deposits (Qyaa) are mapped southeast of the Project area.

Fossils are generally unknown from Holocene-age surficial deposits, due to their young age. Reworked fossils from older deposits may be present, but would not meet significance criteria as the fossils would lack critical contextual information. However, they may overlie older, paleontologically sensitive deposits at depth. Therefore, the Quaternary alluvium deposits are designated as having low paleontological sensitivity (Class 2) above four feet depth and are designated as having unknown paleontological potential (Class U) below four feet depth using the PFYC system. These deposits have a high (B) sensitivity per Riverside County guidelines (2003).

### **6.1.4 Artificial Fill (af)**

Artificial fill (af) comprises recent deposits of previously disturbed sediments emplaced by construction operations and are found in areas where recent construction has taken place. Colors are highly variable and sediments are mottled in appearance. Although these materials may contain fossil resources, they have been removed from their original locations and lack significance. Artificial fill is not mapped in the Project area; however, the apparent preexisting surface disturbance in the vicinity suggests the presence of these materials comprising some of the surface of the Project area. Artificial fill (af) has low paleontological potential (Class 2) using the PFYC system and high (B) sensitivity per Riverside County guidelines (2003).





**Figure 3. Project Geology Map.**

## 6.2 Paleontological Record Search Results

Paleo Solutions requested a paleontological search of records maintained by the Western Science Center in Hemet, California. The museum responded on January 18, 2017 that there were no localities within a one-mile radius of the Project area (Radford, 2017; Appendix A). However, numerous fossil localities have been recorded within five miles of the Project area (Table 3; see Section 6.1.2). Online database searches yielded numerous vertebrate fossil localities recorded from Pleistocene-age deposits within Riverside County including, mammoth, mastodon, camel, horse, bison, ground sloth, peccary, lion, saber-tooth cat, capybara, dire wolf, and rodent (UCMP, 2017; PBDB, 2017; Table 3).

**TABLE 3. PALEONTOLOGICAL LITERATURE AND RECORDS SEARCH RESULTS**

Institutional Locality Number	Taxon	Common Name	Location	Source
Not reported	<i>Megalonyx jeffersonii</i>	Jefferson's ground sloth	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Nothrotheriops shastensis</i>	Shasta ground sloth	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Paramylodon harlani</i>	giant ground sloth	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Canis dirus</i> <i>Canis latrans</i>	dire wolf coyote	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Urocyon cinereoargenteus</i>	grey fox	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Ursus americanus</i>	black bear	Diamond Valley Lake	Springer et al., 2009
Not reported	cf. <i>Arctodus</i> sp.	short-faced bear	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Smilodon fatalis</i>	sabre-toothed cat	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Lynx rufus</i>	bobcat	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Panthera leo atrox</i>	North American lion	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Mammut americanum</i>	American mastodon	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Mammuthus columbi</i>	Columbian mammoth	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Equus occidentalis</i> <i>Equus conversidens</i>	extinct Western horse extinct small horse	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Platygonus compressus</i>	extinct flat-headed peccary	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Camelops hesternus</i>	extinct camel	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Hemiauchenia macrocephala</i>	extinct llama	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Odocoileus hemionus</i>	mule deer	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Capromeryx minor</i>	extinct dwarf pronghorn	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Antilocapra americana</i>	pronghorn	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Bison antiquus</i> <i>Bison latifrons</i>	extinct ancient bison extinct long-horned bison	Diamond Valley Lake	Springer et al., 2009



Institutional Locality Number	Taxon	Common Name	Location	Source
Not reported	<i>Sylvilagus audubonii</i>	Audubon's cotton-tailed rabbit	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Lepus californicus</i>	jackrabbit	Diamond Valley Lake	Springer et al., 2009
Not reported	cf. <i>Ammospermophilus</i> sp.	antelope ground squirrel	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Eutamias</i> sp.	chipmunk	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Spermophilus beecheyi</i> <i>Spermophilus</i> sp.	Beechey's ground squirrel ground squirrel	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Thomomys bottae</i>	Botta's pocket gopher	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Dipodomys</i> sp.	kangaroo rat	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Perognathus</i> sp.	large pocket mouse	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Reithrodontomys</i> sp.	harvest mouse	Diamond Valley Lake	Springer et al., 2009
Not reported	cf. <i>Peromyscus crinitus</i> <i>Peromyscus</i> sp.	canyon mouse deer mouse	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Neotoma fuscipes</i> <i>Neotoma lepida</i>	dark-footed wood rat desert wood rat	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Microtus californicus</i>	California meadow vole	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Mustela frenata</i>	long-tailed weasel	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Mephitis</i> sp.	striped or hooded skunk	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Taxidea taxus</i>	badger	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Sorex ornatus</i>	ornate shrew	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Scapanus latimanus</i>	mole	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Myotis</i> sp.	mouse-eared bat	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Anas</i> sp.	duck	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Accipiter</i> sp. <i>Accipiter cooperi</i>	hawk Cooper's hawk	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Aquila chrysaetos</i>	golden eagle	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Falco</i> sp.	falcon or kestrel	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Meleagris californica</i>	extinct California turkey	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Callipepla californica</i>	California quail	Diamond Valley Lake	Springer et al., 2009
Not reported	Scolopacidae	indeterminate shore bird	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Asio</i> sp. <i>Asio flammeus</i>	owl short-eared owl	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Colaptes auratus</i>	northern flicker	Diamond Valley Lake	Springer et al., 2009
Not reported	cf. <i>Hirundo</i> sp.	swallow	Diamond Valley Lake	Springer et al., 2009
Not reported	Hirundinidae	indeterminate large-sized swallow	Diamond Valley Lake	Springer et al., 2009

Institutional Locality Number	Taxon	Common Name	Location	Source
Not reported	<i>Cyanocitta stelleri</i>	Steller's jay	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Corvus corax</i>	raven	Diamond Valley Lake	Springer et al., 2009
Not reported	cf. <i>Turdus migratorius</i>	American robin	Diamond Valley Lake	Springer et al., 2009
Not reported	Corvidae	jay-sized blackbird magpie-sized blackbird	Diamond Valley Lake	Springer et al., 2009
Not reported	cf. <i>Sturnella neglecta</i>	Western meadowlark	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Scaphiopus hammondi</i>	Hammonds's spadefoot toad	Diamond Valley Lake	Springer et al., 2009
Not reported	cf. <i>Bufo boreas</i>	western toad	Diamond Valley Lake	Springer et al., 2009
Not reported	cf. <i>Hyla cadaverina</i>	California tree frog	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Rana</i> sp.	true frog	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Clemmys marmorata</i>	Western pond turtle	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Gopherus agassizii</i>	desert tortoise	Diamond Valley Lake	Springer et al., 2009
Not reported	Iguanidae	indeterminate "sceloporine" iguana	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Phrynosoma coronatum</i>	coast horned lizard	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Cnemidophorus tigris</i>	Western whiptail lizard	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Crotaphytus collaris</i>	collared lizard	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Gerrhonotus</i> sp.	alligator lizard	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Sceloporus occidentalis</i> cf. <i>Sceloporus graciosus</i>	Western fence lizard sagebrush lizard	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Uta stansburiana</i>	side-blotched lizard	Diamond Valley Lake	Springer et al., 2009
Not reported	cf. <i>Lampropeltis</i> sp.	king snake	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Masticophis</i> sp.	whip snake	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Pituophis melanoleucus</i>	gopher snake	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Tantilla</i> sp.	black-head snake	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Thamnophis</i> sp.	garter snake	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Crotalus</i> sp. <i>Crotalus cerastes</i>	rattlesnake sidewinder	Diamond Valley Lake	Springer et al., 2009
Not reported	Caudata	indeterminate salamander	Diamond Valley Lake	Springer et al., 2009
Not reported	Ostracoda	ostracodes	Diamond Valley Lake	Springer et al., 2009
Not reported	Isoptera	indeterminate termites	Diamond Valley Lake	Springer et al., 2009
Not reported	Coleoptera	indeterminate beetles	Diamond Valley Lake	Springer et al., 2009
Not reported	Pelecypoda	indeterminate bivalves	Diamond Valley Lake	Springer et al., 2009

Institutional Locality Number	Taxon	Common Name	Location	Source
Not reported	<i>Deroceras</i> sp.	slug	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Discus whitneyi</i>	forest disc snail	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Succinea avara</i>	amber snail	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Pupilla muscorum</i>	widespread column snail	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Vertigo</i> sp.	vertigo snail	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Vallonia cyclophorella</i> <i>Vallonia gracilicosta</i>	silky vallonia snail multi-rib vallonia snail	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Fossaria parva</i>	pygmy fossaria snail	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Physa</i> sp.	freshwater snail	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Gyraulus circumstriatus</i> <i>Gyraulus parvus</i>	disc gyro snail ash gyro snail	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Helisoma tenue</i>	rams-horn snail	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Valvata humeralis</i>	glossy valvata snail	Diamond Valley Lake	Springer et al., 2009
Not reported	<i>Mammuthus columbi</i> <i>Equus</i> spp. <i>Bison antiquus</i> cf. Camelidae Rodentia Serpentes	mammoth horse bison camel rodent snake	Temecula	SWCA, 2004
Not reported	<i>Mammuthus</i> <i>Mammut</i> Camelidae Equidae <i>Bison</i> <i>Megatherium</i> Tayassuidae <i>Acinonyx</i> <i>Panthera</i> <i>Smilodon</i> <i>Hydrochoerus</i> <i>Canis dirus</i> Rodentia	mammoth mastodon camel horse bison giant ground sloth peccary cheetah lion saber-tooth cat capybara dire wolf rodent	Riverside County	Jahns, 1954; Cooper and Eisentraut, 2002; Jefferson, 1991; UCMP, 2017; PBDB, 2017

## 7.0 FIELD SURVEY RESULTS

A paleontological field survey was conducted on February 2, 2017 by Paleo Solutions staff member Joey Raum, B.S. The survey was conducted after a review of aerial photographs indicated that the Project area included areas of undisturbed native sediment. The pedestrian survey was conducted to look for and record any fossil resources that may already be exposed onsite and to inspect sediment and bedrock exposures in an effort to resolve the discrepancies between the two geologic maps (Dibblee and Minch, 2003; Morton and Kennedy, 2003) reviewed for this analysis (see Section 6.1). This included close inspection and documentation of sediment and bedrock outcrops. Reference points were acquired using a Trimble GPS unit. Sediment and bedrock

lithologies were recorded and analyzed and used to better interpret the Project paleontological sensitivity, and thus better understand the Project potential impact.

The survey area is accessible from the eastern and western ends from SR-79 and Pourroy Road, respectively. The survey area terrain is relatively flat and low lying and is adjacent to low-moderate to moderate relief hills situated to the south, west, and north (FiguresFigure 4,Figure 5, andFigure 6). The largest adjacent hill is situated west of the survey area (FiguresFigure 8 andFigure 4). The western and southwestern ends of the site lie at a slightly higher elevation than the rest of the site. Located on the highest point in the western-central area is a house (FiguresFigure 4 andFigure 7). West of the survey area are moderately developed residential areas including houses and graded unpaved roads. The survey area has minor infrastructures, although the surface has been heavily disturbed by recent agricultural use.

## **7.1 Geology**

Sediments consists of poorly consolidated Quaternary (Holocene or Pleistocene) alluvium, which is mostly disturbed by previous agricultural use and other grading activities. Exposures are sparse and limited to patches of ground surface where grass cover is thin. Sediments exposed near the northeastern corner of the survey area include surface alluvium consisting of well to moderately sorted, medium to dark brown to gray, sandy silt and angular to subangular granule to small cobble size clasts of metamorphic and plutonic origin. No sediment profiles are exposed onsite; however, very low relief washes lie along the eastern boundary adjacent to SR-79, particularly near the northeastern corner (FiguresFigure 9,Figure 10,Figure 11, andFigure 12). Sediments are similar across the site, although more reddish-brown colored material was observed in the south-central area (FiguresFigure 7,Figure 13, andFigure 14). Reddish colored (oxidized) sediments are often indicative of older Pleistocene-age alluvium, which is potentially conducive to fossil preservation. Although sediment and bedrock exposures are limited onsite, there is a road cut along SR-79 that lies adjacent to the southeast corner. The road cut exposes very hard metamorphic grade bedrock (FiguresFigure 15,Figure 16, andFigure 17). The proximity of the road cut to the survey site implies that these metamorphic rocks underlie, in part, much of the low to moderate relief hills in the southwestern end of the site. Additionally, the moderate relief hills in the surrounding region appear to be dominantly composed of hard bedrock, either or plutonic or metamorphic origin. Furthermore, the angularity of the surface pebbles and cobbles (Figure 12) implies relatively close sediment transport, which suggests that material was derived from the surrounding hills and mountains. Due to the limited exposures of Quaternary (Holocene or Pleistocene) alluvium observed during the field survey, a definitive age determination could not be made.

## **7.2 Paleontology**

No paleontological resources were observed or collected during the survey. Although sediments conducive to fossil preservation were observed.



**Figure 4. Overview of survey area from southeast end. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View northwest.**



**Figure 5. Overview of survey area from southeastern end of site. Mapped as Quaternary alluvium (Qa/Qvova) and Mesozoic phyllite (Mzp). View northeast.**





**Figure 6. Overview of survey area from western end at Pourroy Road. Mapped as Pleistocene-age alluvium (Qvova). View east.**



**Figure 7. Overview of northwestern site area which is situated on a low-moderate relief hill. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View northeast.**



**Figure 8. View of western end of site, which terminates at Pourroy Road. Adjacent hills composed of plutonic/metamorphic rock. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View west.**



**Figure 9. Overview of northern end of survey area from the northeast corner. Mapped as Quaternary alluvium (Qa/Qvova) and Mesozoic phyllite (Mzp). View west.**





**Figure 10. Quaternary alluvium consisting of medium to dark brown sandy silt. Mapped as Holocene-age alluvium (Qa). Very low relief washes. View north.**



**Figure 11. Quaternary alluvium consisting of medium to dark brown sandy silt. Mapped as Holocene-age alluvium (Qa). View down.**





**Figure 12. Quaternary alluvium consisting of medium to dark brown to gray sandy silt. Mapped as Holocene-age alluvium (Qa). View down.**



**Figure 13. Quaternary alluvium consisting of reddish-brown sandy silt. Mapped as Pleistocene-age alluvium (Qvova). View down.**





**Figure 14. Quaternary alluvium consisting of reddish-brown sandy silt. Mapped as Pleistocene-age alluvium (Qvova). View down.**



**Figure 15. Metamorphic grade bedrock exposed in a rock cut along SR-79 adjacent to the southeastern corner of the survey site. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View northeast.**





**Figure 16. Metamorphic grade bedrock exposed in a rock cut along SR-79 adjacent to the southeastern corner of the survey site. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View south.**



**Figure 17. Metamorphic grade bedrock exposed in a rock cut along SR-79 adjacent to the southeastern corner of the survey site. Mapped as Pleistocene-age alluvium (Qvova) and Mesozoic phyllite (Mzp). View down.**

## **8.0 RESOURCE ASSESSMENT**

The PFYC system was applied to the results of the analysis of existing data. Pleistocene very old alluvium has moderate paleontological potential (PFYC Class 3). Holocene young alluvium is estimated to be less than 10,000 years old, and has low paleontological potential (PFYC Class 2) because it is too young to contain in-situ fossils. However, these younger deposits often overlie older geologic units with higher paleontological potential which may be disturbed at depth. Fossils contained in artificial fill lack critical scientific information, and artificial fill is generally considered to have low paleontological potential (PFYC Class 2). Igneous and metamorphic rock units, which are formed under high temperatures and/or pressures, are devoid of scientifically significant fossils and are considered to have very low paleontological potential (PFYC Class 1).

## **9.0 IMPACTS TO PALEONTOLOGICAL RESOURCES**

Direct impacts to paleontological resources concern the physical destruction of fossils, usually by human-caused ground disturbance. Indirect impacts to paleontological resources typically concern the loss of resources to theft and vandalism resulting from increased public access to paleontologically sensitive areas. Cumulative impacts to paleontological resources concern the incremental loss of these nonrenewable resources to society as a whole.

Surface grading or shallow excavations entirely within Holocene young alluvial deposits in the Project area are unlikely to uncover significant fossil vertebrate remains. However, older deposits may be present immediately below a thin veneer of Holocene soils or alluvium. The geotechnical boring logs show Quaternary (Holocene and Pleistocene) sediments one foot beneath the ground surface and extending to a maximum depth of ten feet. Excavations in the Project area that extend down into very old sedimentary deposits may well impact scientifically important paleontological resources. Excavations entirely within previously disturbed sediments or artificial fill are unlikely to uncover significant fossil vertebrate remains; furthermore, any recovered resources will lack stratigraphic context. However, these deposits may shallowly overlie older in-situ sedimentary deposits. Excavations into Mesozoic phyllite, expected to be encountered starting at relatively shallow depths of one to ten feet below the current ground surface (Inland Foundation Engineering, Inc. 2016), will not impact scientifically significant fossils, although the overlying sediments may contain resources. Therefore, grading and other earthmoving activities may potentially result in significant direct impacts to paleontological resources throughout the entirety of the Project area.

## **10.0 RECOMMENDATIONS**

Based on the ground disturbance necessary to complete the Project, there is the potential for adverse impacts to scientifically significant paleontological resources within Pleistocene very old alluvial deposits underlying a thin veneer of Holocene soils or alluvial deposits within the Project area. Construction excavations which disturb Pleistocene-age sediments should be monitored by a professional paleontologist in order to reduce potential adverse impacts on scientifically important paleontological resources to a less than significant level. Prior to construction, a paleontological resources monitoring and mitigation plan (PRMMP) should be prepared. It should provide detailed recommended monitoring locations; a description of a worker training program; detailed procedures for monitoring, fossil recovery, laboratory analysis, and museum curation; a curation

agreement with the Western Science Center or another accredited repository; and notification procedures in the event of a fossil discovery by a paleontological monitor or other project personnel. Because the Project area is nearly devoid of exposed sediments, the approximate ages (Holocene or Pleistocene) of the Quaternary deposits underlying the Project area could not be determined from the field survey. Additionally, the subterranean sediment descriptions provided in the geotechnical report are inconclusive for determining Holocene or Pleistocene ages. Therefore, it is recommended that excavations in all locations of the Project area be initially monitored for the presence of paleontologically sensitive sediments. If it is determined that only Holocene-age alluvium (PFYC Class 2) or Mesozoic-age phyllite (PFYC Class 1) is impacted, monitoring will be reduced or halted. Any potential fossils that are unearthed during construction should be evaluated by a professional paleontologist as described in the PRMMP.

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## **APPENIDX A**

### **WESTERN SCIENCE CENTER RECORDS SEARCH RESULTS**





January 18, 2017

Paleo Solutions  
Barbara Webster, MS  
911 S. Primrose Ave., Unit N  
Monrovia, CA 91016

Dear Ms. Webster,

This letter presents the results of a record search conducted for the Temecula Valley Charter School Project in the city of Winchester in Riverside County, California. The project site is located west of Highway 79/Winchester Road, south of Keller Road, in section 28 on the boundary of the Winchester and Bachelor Mountain CA USGS 7.5 minute quadrangles.

The geologic units underlying this project are mapped primarily as very old alluvial channel deposits dating from the middle to early Pleistocene, with areas of phyllite deposits dating from the Mesozoic period (Morton & Kennedy, 1991, 1995-1998). The Pleistocene alluvial channel units are considered to be of high paleontological sensitivity. The Western Science Center does not have localities within the project area or within a 1 mile radius, but does have numerous fossil localities within 5 miles that presented significant paleontological finds within similar alluvial mapped units including those associated with the Diamond Valley Lake Project in Hemet, and the Harveston II Project in Temecula. The Diamond Valley Lake and Harveston II Projects resulted in hundreds of fossil localities and thousands of fossil specimens.

Any fossils recovered from the project area would be scientifically significant. Excavation activity associated with development of the project area would impact the paleontologically sensitive Pleistocene units and it is the recommendation of the Western Science Center that a paleontological resource mitigation program be put in place to monitor, salvage, and curate any recovered fossils associated with the current study area.

If you have any questions, or would like further information about the Diamond Valley Lake or Harveston II projects mentioned, please feel free to contact me at [dradford@westerncentermuseum.org](mailto:dradford@westerncentermuseum.org)

Sincerely,

A handwritten signature in black ink, appearing to read 'Darla Radford', is written over a horizontal line.

Darla Radford  
Collections Manager

2345 Searl Parkway ♦ Hemet, CA 92543 ♦ phone 951.791.0033 ♦ fax 951.791.0032 ♦ [WesternScienceCenter.org](http://WesternScienceCenter.org)

## Appendix

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## Appendix

# Appendix F      Phase I Environmental Site Assessment

# ENVIRONMENTAL ASSESSMENT

*Prepared for:*

Hansberger & Klein  
Erica Klein



PHASE I ENVIRONMENTAL SITE ASSESSMENT  
OF  
34155 Winchester Road  
Winchester, California 92596

## PREPARED BY:

EMG  
10461 Mill Run Circle  
Suite 1100  
Owings Mills, Maryland 21117  
800.733.0660  
[www.EMGcorp.com](http://www.EMGcorp.com)

## EMG CONTACT:

Kelly Hoover  
Senior Environmental Consultant  
800.733.0660. x6279  
[khoover@emgcorp.com](mailto:khoover@emgcorp.com)

## EMG PROJECT NUMBER:

120191.16R000-001.135

## DATE OF REPORT:

June 6, 2016

## ON SITE DATE:

May 26, 2016



engineering | environmental | capital planning | project management

EMG Corporate Headquarters 10461 Mill Run Circle, Suite 1100, Owings Mills, MD 21117 [www.EMGcorp.com](http://www.EMGcorp.com) p 800.733.0660

## PROJECT SUMMARY TABLE

REPORT SECTION	ACCEPTABLE	ROUTINE SOLUTION	PHASE II	REC	ESTIMATED COST
DATA GAPS	Yes				
CURRENT USE OF PROJECT	Yes				
HAZARDOUS MATERIALS	Yes				
STORAGE TANKS	Yes				
WASTE GENERATION	Yes				
SURFACE AREAS	Yes				
ADJACENT PROPERTY USE	Yes				
HISTORICAL REVIEW	Yes				
PROJECT REGULATORY DATABASE REVIEW	Yes				
OFF-SITE REGULATORY DATABASE REVIEW	Yes				
VAPOR MIGRATION	Yes				
ASBESTOS	No (1)	Yes		No	\$495
RADON GAS	Yes				
LEAD-BASED PAINT	Yes				
LEAD IN DRINKING WATER	Yes (2)	Yes		No	TBD
MOISTURE CONDITIONS	Yes				

Conditions noted in the Project Summary Table are representative of the overall conditions of the property. The Project Summary Table should not be used as a stand alone document. REC - Recognized Environmental Condition, as defined by ASTM E1527-13.

### Footnotes:

1. Based on the date of construction, there is a potential that asbestos containing materials (ACM) exist at the Project. The non-friable suspect ACM was observed in generally good condition and should be sampled prior to repair, renovation, or demolition activities. These materials can be maintained in place if an Operations and Maintenance (O&M) Program is developed and implemented. A properly designed O&M Program is sufficient to maintain the materials in accordance with current regulatory standards. Based on the scope of work, these materials were not sampled.
2. The Project is served by a private well. No documentation regarding lead in water testing was provided to EMG. The well should be sampled if proposed for future use, or properly abandoned if the well is not intended to be used in the future.

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# ENVIRONMENTAL SITE ASSESSMENT

34155 Winchester Road  
34155 Winchester Road  
Winchester, California 92596

EMG PROJECT NO: 120191.16R000-001.135

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Appendix I: Key Personnel Resumes



## 1.0 EXECUTIVE SUMMARY

EMG performed a Phase I Environmental Site Assessment of the property summarized below on May 26, 2016.

The assessment was performed at the Client's request using methods and procedures consistent with good commercial and customary practice conforming with ASTM E1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. Any exceptions to, or deletions from, this practice are described in Section 2 of this report. The assessment was completed for the following property:

PROJECT DESCRIPTION	
<b>Project Name:</b>	34155 Winchester Road (the "Project")
<b>Project Address:</b>	34155 Winchester Road, Winchester, Riverside County, California 92596
<b>Additional Current/Historical Addresses:</b>	Not applicable
<b>Assessor Parcel Number(s):</b>	476010013 and 476010059
<b>Site Visit Date:</b>	May 26, 2016
<b>Property Type:</b>	Residential and naturally vegetated
<b>Land Area (acres):</b>	14.6
<b>Number of Units:</b>	Two residences
<b>Number of Buildings:</b>	Three
<b>Year Constructed:</b>	1979
<b>Basement:</b>	No
<b>Domestic Sewage:</b>	Septic system
<b>Gross Building Area (SF):</b>	Not reported
<b>Net Rentable Area (SF):</b>	Not reported



Naturally vegetated land on west portion of Project



Permanent residence

## ENVIRONMENTAL SITE ASSESSMENT

34155 Winchester Road  
34155 Winchester Road  
Winchester, California 92596

EMG PROJECT NO: 120191.16R000-001.135



Mobile home structure



Garage structure

SITE RECONNAISSANCE CONDITIONS	
<b>Date Completed:</b>	May 26, 2016
<b>EMG Project Manager:</b>	Kate Downey
<b>Weather Conditions:</b>	Sunny
<b>Temperature (F):</b>	70s
<b>Percent of Units Observed:</b>	100%
<b>Access Limitations:</b>	No access limitations were encountered.

ENVIRONMENTALLY SUSPECT PROJECT USE	
PROJECT USE	CURRENTLY LOCATED AT THE PROJECT
<b>Cellular Communications Equipment:</b>	No
<b>Commercial Printing:</b>	No
<b>Dry Cleaner:</b>	No
<b>Emergency Generator or Diesel Fire Pump:</b>	No
<b>Gasoline Station:</b>	No
<b>Heavy Industrial Use:</b>	No
<b>Landfill:</b>	No
<b>Machine Shop:</b>	No
<b>Military Use:</b>	No
<b>Oil Well:</b>	No
<b>Photograph/X-Ray Developing:</b>	No
<b>Vehicle Repair:</b>	No

## ENVIRONMENTAL SITE ASSESSMENT

34155 Winchester Road  
34155 Winchester Road  
Winchester, California 92596

EMG PROJECT NO: 120191.16R000-001.135

CHRONOLOGICAL HISTORY OF PROJECT			
YEARS	PROJECT USE	TENANTS	ENVIRONMENTAL CONCERN
Prior to 1938	No historical data available.	Not applicable	No
1938 - 1975	Vacant, non-arable land	Not applicable	No
1979 - Current	Residential and vacant, non-arable land	Not applicable	No

ADJACENT PROPERTIES			
DIRECTION	ADDRESSES	PROPERTY USE / BUSINESS NAME	ENVIRONMENTAL CONCERN
North	34119 Keller Flat Court	Single-family residence	No
East	Not applicable	Vacant, non-arable land	No
South	Not applicable	Vacant, non-arable land	No
West	34220-34550 Pourroy Road	Single-family residences	No

## 1.1 FINDINGS AND OPINIONS

This assessment has revealed no evidence of recognized environmental conditions (RECs), historical recognized environmental conditions (HRECs), controlled recognized environmental conditions (CRECs), significant data gaps, or significant business environmental risks in connection with the Project, except as discussed below.

## ASBESTOS

### **Business Environmental Risk: Suspect ACM identified**

Based on the date of construction, there is a potential that asbestos containing materials (ACM) exist at the Project. The non-friable suspect ACM was observed in generally good condition and should be sampled prior to repair, renovation, or demolition activities.

***These materials can be maintained in place if an Operations and Maintenance (O&M) Program is developed and implemented. A properly designed O&M Program is sufficient to maintain the materials in accordance with current regulatory standards. Based on the scope of work, these materials were not sampled.***

## LEAD IN DRINKING WATER

### **Business Environmental Risk: Lead In Water**

The Project is served by a private well. No documentation regarding lead in water testing was provided to EMG. The well should be sampled if proposed for future use, or properly abandoned if the well is not intended to be used in the future.

## 1.2 RECOMMENDATIONS

EMG recommends the following:

## ENVIRONMENTAL SITE ASSESSMENT

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RECOMMENDATION	ESTIMATED COST
The development and implementation of an Asbestos O&M Program. Costs indicated are for O&M Program Document development only. Comprehensive survey costs, if required, will be identified as a result of O&M Program implementation.	\$495
The well should be sampled if proposed for future use, or properly abandoned if the well is not intended to be used in the future.	To Be Determined

### 1.3 CERTIFICATION

EMG certifies that EMG has no undisclosed interest in the subject property, that EMG's relationship with the Client is at arms-length, and that EMG's employment and compensation are not contingent upon the findings or recommendations provided in the Report.

If you have any questions regarding this report, please contact Kelly Hoover at (800) 733-0660 x6279 or [khoover@emgcorp.com](mailto:khoover@emgcorp.com).

Surveyed By: Kate Downey, Project Manager

Written By: Kate Downey, Project Manager

Reviewed By:



Kelly Hoover, Senior Environmental Consultant

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of 40 CFR 312.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Project. I have developed and performed the all appropriate inquiries in conformance with the standard and practices set forth in 40 CFR Part 312.

### 1.4 RELIANCE

This report has been prepared for and is exclusively for the use and benefit of the Client identified on the cover page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and EMG.

This report, or any of the information contained therein, is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of EMG. Any reuse or distribution without such consent shall be at the client's or recipient's sole risk, without liability to EMG.

## 2.0 SCOPE OF WORK

### 2.1 PURPOSE

The purpose of this report is to provide the Client the results of a commercially prudent and reasonable inquiry designed to identify recognized environmental conditions at the Project taking into account reasonably ascertainable information. In accordance with ASTM E1527-13, the level of environmental assessment was guided by several factors, including the type of property and the risk tolerance of the user.

The user informed EMG that the purpose of the assessment is for an acquisition.

### 2.2 SCOPE OF WORK

The assessment was conducted utilizing generally accepted Phase I industry standards, using American Society for Testing and Materials (ASTM) Standard Practice E 1527-13.

This assessment is based on the evaluation of the information gathered, laboratory analyses of samples collected (when required), and accessibility at the time of the assessment.

The Scope of Work included an evaluation of:

- Interviews with individuals knowledgeable about the Project for the purpose of gathering information regarding the potential for contamination at the Project.
- Available pertinent documents obtained by EMG or provided by the client.
- Reasonably ascertainable federal, state, and local records in an effort to identify sites of known or suspected hazardous waste activity located at or near the Project.
- The Project history in an attempt to identify possible ownership(s) and/or uses, as identified through review of reasonably ascertainable standard historical sources.
- The physical characteristics of the Project, as identified through review of reasonably ascertainable topographic data, wetlands, soils, geology, and groundwater data.
- Current Project conditions (as applicable) as they pertain to the presence or absence of: facility storage tanks, drums, containers (above or below ground), etc., transformers and other electrical equipment which utilize fluid which may potentially contain PCBs, the use of hazardous materials/chemicals and petroleum products, and/or the generation, treatment, storage, or disposal of hazardous, regulated, or medical wastes.
- An evaluation of information contained in programs such as the NPL, CERCLIS, SHWS, RCRIS, SWF, LUST, and other governmental information systems within specific search distances of the Project. This evaluation was performed to identify sites that represent a recognized environmental condition. The regulatory agency report provided is based on an evaluation of the data collected and compiled by a contracted data research company. The search is designed to meet the requirements of ASTM Standard Practice E 1527-13. The information provided is assumed to be correct and complete.
- Visual observation of the adjacent properties to identify high-risk neighbors and the potential for known or suspected contamination to migrate onto the Project.

### 2.3 ASTM E1527 NON-SCOPE CONSIDERATIONS

At the Client's request, the assessment included a screening approach for the following Non-ASTM Considerations, which are otherwise beyond the Scope of ASTM E1527-13.

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NON-ASTM CONSIDERATIONS	
NON-ASTM CONSIDERATION	SCOPE OF WORK
<b>Asbestos Containing Materials:</b>	The identification of suspect asbestos containing materials in accessible areas. Sampling of suspect materials was not performed.
<b>Radon Gas:</b>	Radon gas propensity, through the review of the USEPA's Map of Radon Zones.
<b>Lead Based Paint:</b>	The identification of lead-based paint for residential and daycare properties constructed prior to 1978.
<b>Lead In Drinking Water:</b>	A screening for lead in water, based on information provided by the municipal water provider.
<b>Moisture Conditions:</b>	The identification of visible moisture conditions and conditions conducive for moisture conditions. In addition, EMG interviewed Project personnel regarding any known or suspected moisture conditions, water intrusion, or mildew like odors.
<b>Wetlands:</b>	Review of readily available wetlands map data available from the US Fish and Wildlife Service. A site specific wetland delineation is beyond the scope of this assessment.
<b>Flood Zone:</b>	Review of readily available flood zone map designations available from regulatory agencies, such as the Federal Emergency Management Agency (FEMA).



### 3.0 USER PROVIDED INFORMATION

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In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfield's Revitalization Act of 2001 (the "Brownfield's Amendments") (if desired), the user must provide certain information (if available) identified in the User Questionnaire to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

Within this Phase I Environmental Site Assessment, EMG's reference to the Client follows the ASTM guide's definition of user, that is, the party that retains EMG for the preparation of a baseline ESA of the Project. A user may include, without limitation, a purchaser, potential tenant, owner, existing or potential mortgagee, lender, or property manager of the Project.

#### 3.1 USER QUESTIONNAIRE

EMG submitted the following User Questionnaire to the user pursuant to the responsibilities described in Section 6 of ASTM Standard E 1527-13. All Appropriate Inquires (40 CFR Part 312) requires that these questions be answered by or on behalf of a party seeking to qualify for limited liability protections to CERCLA liability.

A completed User Questionnaire was not returned to EMG. The lack of this information represents a data gap. However, based on the other information obtained during the completion of this assessment, the lack of the User Questionnaire does not represent a significant data gap. A copy of the User Questionnaire is included in Appendix D.

#### 3.2 ENVIRONMENTAL LIEN/AUL SEARCH

The presence of an Activity and Use Limitations (AUL) at a property is an indication that there may be residual levels of hazardous substances or petroleum products present above unrestricted land use levels. Although Environmental Liens and AULs are often recorded with the property deed at the local land title office, in some cases they are filed in a separate environmental agency database or in project documentation, such as agency closure letters. ASTM E1527-13 does not require the environmental professional to undertake a review of recorded land title records and judicial records for environmental liens and AULs. Such a review is performed at the discretion of the user, based on their need to meet the requirements of 40 CFR 312.20 and 312.25.

The user did not engage EMG to review title and judicial records for environmental liens or AULs recorded against the Project. Furthermore, these documents were not provided to EMG for review. The lack of this information represents a data gap. However, based on the other information obtained during the completion of this assessment, the lack of the an Environmental AUL/Lien search does not represent a significant data gap.

#### 3.3 PREVIOUS ENVIRONMENTAL ASSESSMENTS

In accordance with ASTM E1527-13, EMG requested that the user provide copies of previous environmental assessments for review. Furthermore, EMG may have obtained prior environmental assessments and regulatory records from local, state, and federal regulatory agencies. The purpose of reviewing prior environmental assessments is to determine if any recognized environmental conditions have previously been identified. Documentation provided to EMG which is unrelated to the identification of recognized environmental conditions may not be reviewed.

EMG was not provided with any previously conducted environmental assessment reports for the Project.

## 4.0 PHYSICAL SETTING

ASTM E1527-13 requires that the current 7.5-minute USGS Topographic Map (or equivalent) showing the area on which the Project is located be reviewed. Additional physical setting sources, such as soil survey maps, groundwater maps and geologic maps may be obtained and reviewed at the discretion of the environmental professional. The purpose of this review is to evaluate whether hazardous substances or petroleum products are likely to migrate to the Project.

### 4.1 TOPOGRAPHY

The most recent version of the USGS Topographic Map available is discussed below. Historical USGS Topographic Maps, if available, are discussed in Section 6.

USGS TOPOGRAPHIC MAP REVIEW	
<b>Topographic Map Name:</b>	Bachelor Mountain, California
<b>Topographic Map Year:</b>	2015
PROJECT TOPOGRAPHY	
<b>Upper Elevation (feet):</b>	1,465
<b>Lower Elevation (feet):</b>	1,415
<b>Surface Slope:</b>	Highly variable
<b>Slope Direction:</b>	Highly variable
GENERAL VICINITY TOPOGRAPHY	
<b>Slope Direction:</b>	Southeast
<b>Nearest Surface Water Feature:</b>	Unnamed intermittent creek
<b>Nearest Surface Water Feature Distance:</b>	1,300 feet
<b>Nearest Surface Water Feature Direction:</b>	South

### 4.2 GEOLOGY

The generalized geology of the Project area was researched using readily available geologic maps.

GENERALIZED GEOLOGY	
<b>Source:</b>	1:2,500,000 scale Geology of the Conterminous United States map published by the USGS and dated 1974
<b>Geologic Description:</b>	Lower Mesozoic eugeosynclinal materials

### 4.3 HYDROGEOLOGY

Groundwater conditions at the Project are estimated based on reasonably available data such as groundwater maps, previous subsurface investigations conducted at, or in the vicinity of the Project, and local conditions. Shallow groundwater flow is generally expected to follow the ground level slope of surface elevations towards the nearest open body of water. Estimated groundwater levels may vary due to seasonal fluctuations in precipitation, local usage demands, geology, underground structures, or dewatering operations.



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HYDROGEOLOGY	
<b>Source:</b>	Groundwater well data provided the National Water Information System published by the USGS
<b>Estimated Depth to Shallow Groundwater:</b>	30-250 feet below ground surface
<b>Estimated Direction of Groundwater Flow:</b>	Southeast

## 4.4 SOILS

Review of the Natural Resources Conservation Service (NRCS) Web Soil Survey identified the following soil type(s) at the Project:

SOIL SERIES NAME	DRAINAGE	TEXTURE	DEPTH
Escondido	Well drained	Sandy loam	At least 5 inches
Friant	Well drained	Sandy loam	At least 13 inches
Garretson	Well drained	Sandy loam	At least 10 inches
Lodo	Somewhat excessively drained	Gravelly loam	At least 8 inches

## 5.0 SITE RECONNAISSANCE

The objective of the site reconnaissance is to obtain information indicating the likelihood of identifying recognized environmental conditions in connection with the property. In accordance with ASTM E1527-13, EMG attempted to visually observe the periphery of the Project and all structures to the extent not obstructed by obstacles. In addition, EMG attempted to visually observe interior common areas, maintenance and repair areas, and a representative sample of occupant spaces. In general, EMG does not look under floors, above ceilings, behind walls, in confined spaces, in transformer vaults, or in other areas not considered to be safe to access.

SITE RECONNAISSANCE CONDITIONS	
<b>Date Completed:</b>	May 26, 2016
<b>EMG Project Manager:</b>	Kate Downey
<b>Weather Conditions:</b>	Sunny
<b>Temperature (F):</b>	70s
<b>Percent of Units Observed:</b>	100%
<b>Access Limitations:</b>	No access limitations were encountered.

### 5.1 UNITS OBSERVED

The units observed at the Project are discussed below.

RESIDENTIAL UNITS OBSERVED
34155 Winchester Road, 34155-A Winchester Road



Interior garage structure



Interior permanent residence

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Interior mobile home residence

### 5.2 PROJECT USE

ENVIRONMENTALLY SUSPECT PROJECT USE	
PROJECT USE	CURRENTLY LOCATED AT THE PROJECT
<b>Cellular Communications Equipment:</b>	No
<b>Commercial Printing:</b>	No
<b>Dry Cleaner:</b>	No
<b>Emergency Generator or Diesel Fire Pump:</b>	No
<b>Gasoline Station:</b>	No
<b>Heavy Industrial Use:</b>	No
<b>Landfill:</b>	No
<b>Machine Shop:</b>	No
<b>Military Use:</b>	No
<b>Oil Well:</b>	No
<b>Photograph/X-Ray Developing:</b>	No
<b>Vehicle Repair:</b>	No

### 5.3 HAZARDOUS MATERIALS AND PETROLEUM PRODUCTS

Accessible interior and exterior areas of the Project were observed for the presence of hazardous materials and petroleum products.

EMG evaluated any observed manways, vent pipes, fill connections, concrete pads, and unknown saw cuts to determine if USTs are present at the Project, or if USTs were historically located at the Project. In addition, the Key Site Manager and other property management personnel were interviewed regarding the presence of USTs at the Project.

EMG observed the Project for the presence of potentially PCB-containing equipment such as electrical transformers and hydraulic lifts. Equipment installed after 1979 is unlikely to contain PCBs.

EMG observed the Project for visual evidence of petroleum and natural gas pipelines, such as pipeline markers.

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STORAGE AND USE OF HAZARDOUS MATERIALS AND PETROLEUM PRODUCTS	
FEATURE	IDENTIFIED AT PROJECT
<b>Drums and Small Containers:</b>	Yes. Further discussed below.
<b>Underground Storage Tanks (USTs):</b>	No
<b>Aboveground Storage Tanks (ASTs):</b>	Yes. Further discussed below.
<b>Oil Cooled Transformers:</b>	No
<b>Hydraulic Equipment:</b>	No
<b>Petroleum or Natural Gas Pipelines:</b>	No

DRUMS AND SMALL CONTAINERS			
MATERIAL	QUANTITY	STORAGE LOCATION	SPILLS OR LEAKS
Janitorial and maintenance supplies	Retail-size containers	Janitor closets and other designated areas	No

Review of the hazardous materials use and storage at the Project did not identify any recognized environmental conditions or environmental concerns with regards to the materials listed in the table above.



Janitorial supplies

ABOVEGROUND STORAGE TANKS	
<b>Tank #:</b>	1 & 2
<b>Owner:</b>	Project
<b>Year Installed:</b>	1979 or later
<b>Contents:</b>	Propane
<b>Capacity:</b>	100-gallons
<b>Visually Observable:</b>	Yes
<b>Weep Holes Present:</b>	Not Applicable
<b>Secondary Containment:</b>	No

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ABOVEGROUND STORAGE TANKS	
<b>Location:</b>	Behind buildings
<b>Tank Construction:</b>	Single-wall steel
<b>Registered With State:</b>	Not required
<b>Leaks Observed:</b>	No
<b>Leaks Reported by POC:</b>	No
<b>Conclusion:</b>	The Key Site Manager was unaware of any past releases from the ASTs. Furthermore, the ASTs appeared to be in good condition, with no evidence of current or past releases.



Propane tank



Propane tank

## 5.4 WASTE GENERATION, STORAGE, AND DISPOSAL

Visual observation for the generation, treatment, storage, and disposal of wastes was performed. The areas of waste generation and storage were observed for evidence of current and past releases.

Although a waste disposal regulatory compliance audit is beyond the scope of this assessment, general waste disposal procedures were evaluated to determine if any deficiencies exist that are likely to result in a release to the Project.

WASTE GENERATION AND DISPOSAL	
FEATURE	IDENTIFIED AT PROJECT
<b>Waste Generation:</b>	Yes. Further discussed below.
<b>Septic Systems:</b>	Yes. Further discussed below.
<b>Oil Water Separators:</b>	No
<b>Unknown Drums or Containers:</b>	No
<b>Waste Disposal Ponds or Lagoons:</b>	No



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WASTE GENERATION			
WASTE TYPE	DISPOSAL METHOD	STORAGE LOCATION	SPILLS OR LEAKS
Domestic sewage	Septic system	Septic system	No
Municipal trash	Contracted waste hauler	Trash bins	No

Review of waste storage and disposal information did not identify any recognized environmental conditions or environmental concerns with regards to the wastes listed in the table above.



Trash bins

SEPTIC SYSTEM	
<b>Type:</b>	Tank with leach field
<b>Wastes:</b>	Domestic sewage
<b>Year Installed:</b>	1979
<b>Currently Active:</b>	Yes
<b>Reported Condition:</b>	Good
<b>Leach Field Location:</b>	Rear of residences
<b>Tank Location:</b>	Rear of residences
<b>Health Department Violations:</b>	Records are not reasonably ascertainable, as defined by ASTM
<b>Conclusion:</b>	Based on the information above, the presence of the septic systems do not represent a recognized environmental condition.

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Approximate location of septic system

### 5.5 SURFACE AREAS

The interior and exterior surface areas were observed for environmentally significant features such as wells, sumps, staining, and pits.

SURFACE AREAS	
FEATURE	IDENTIFIED AT PROJECT
Floor Drains, Sumps and Pits:	No
Pools of Liquid Waste:	No
Surface Staining:	No
Unusual or Noxious Chemical Odors:	No
Landfilling:	No
Stressed Vegetation:	No
Stormwater Retention/Detention Basins:	No
Domestic Water Wells:	Yes. Further discussed below.
Monitoring Wells:	No
Irrigation Wells:	No
Dry Wells:	No

WELLS			
TYPE OF WELL	# OF WELLS	REGISTERED	LOCATION
Water (potable)	1	No	Entrance of residences (central portion)

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Water well and water storage tanks

### 5.6 UTILITIES, HEATING, AND COOLING

UTILITIES	
<b>Domestic Water:</b>	Domestic water well
<b>Electricity:</b>	Public utility - Pacific Gas & Electric
<b>Natural Gas:</b>	Not applicable
<b>Domestic Sewer:</b>	Septic system

HEATING AND COOLING	
<b>Type of Heating:</b>	Propane units
<b>Type of Cooling:</b>	Electric units



Condensing unit



Water heater and furnace



## 5.7 ADJACENT PROPERTY USE

The adjacent properties were visually observed for evidence of recognized environmental conditions, such as property uses likely to result in a release, and visual evidence of surface migration of releases. The following adjacent properties were identified:

ADJACENT PROPERTIES			
DIRECTION	ADDRESSES	PROPERTY USE / BUSINESS NAME	ENVIRONMENTAL CONCERN
North	34119 Keller Flat Court	Single-family residence	No
East	Not applicable	Vacant, non-arable land	No
South	Not applicable	Vacant, non-arable land	No
West	34220-34550 Pourroy Road	Single-family residences	No

Review of the adjacent properties did not identify any visible evidence of a release. Furthermore, no releases were identified at the adjacent properties based on review of the regulatory database report (Section 7.1.2). Therefore, the adjacent property uses do not represent a recognized environmental condition.



North adjacent single family residence



East adjacent Winchester Road followed by vacant land

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South adjacent vacant land



West adjacent single family residences

## 5.8 INTERVIEWS

### 5.8.1 KEY SITE MANAGER

EMG attempted to interview the Key Site Manager as part of this assessment. In addition, a Questionnaire was provided to the Key Site Manager to assist EMG in determining if recognized environmental conditions exist at the Project. A copy of the Key Site Manager Questionnaire is included in Appendix D.

KEY SITE MANAGER INTERVIEWS			
NAME	RELATIONSHIP TO PROPERTY	YEARS WITH PROPERTY	TELEPHONE NUMBER
William R. Liesman	Owner	28	951-333-3544

The Key Site Manager did not identify any recognized environmental conditions or environmental concerns with the current or historical use of the Project.

### 5.8.2 CURRENT OCCUPANTS

EMG made a reasonable attempt to interview all major occupants and also those other occupants whose operations are likely to indicate a recognized environmental condition.

No occupants of the Project were available or would agree to an interview. The lack of occupant interviews represents a data gap. However, based on the conditions observed in the accessed areas, discussions with the site contact, and review of other available information, the lack of this information does not represent a significant data gap.

### 5.8.3 CURRENT OWNER

EMG submitted an Owner Questionnaire to the user in an effort to identify the owner of the Project who could be interviewed to provide information regarding proceedings involving the Project.

A completed Owner Questionnaire was not returned to EMG. The lack of this information represents a data gap. However, based on the other information obtained during the completion of this assessment, the lack of the User Questionnaire does not represent a significant data gap. A copy of the Owner Questionnaire is included in Appendix D.

### 5.8.4 PAST OWNERS AND OCCUPANTS

No past owners of the Project, who likely would have material information regarding recognized environmental conditions at the Project, were identified.

### 5.8.5 NEARBY OWNERS AND OCCUPANTS

The Project was not an abandoned property with evidence of unauthorized uses or uncontrolled access; therefore, interviews were not conducted with adjacent or nearby property owners or occupants.

## 6.0 HISTORICAL USE INFORMATION

The purpose of the historical review is to determine the previous uses of the Project and surrounding area in order to identify the likelihood of past uses having led to a recognized environmental condition. Historical sources that are both reasonably ascertainable, and likely to be useful are reviewed in an attempt to document the historical use of the Project and surrounding areas dating back to 1940, or the first developed use, whichever is earlier.

Copies of representative historical maps/aerial photographs are included in Appendix C. Other historical documentation, such as City Directory abstracts, copies of building department records, and ownership records are included in Appendix F, when available.

The following standard historical sources were researched:

STANDARD HISTORICAL SOURCES		
DATA TYPE	SOURCE	YEARS COVERED
<b>Aerial Photographs:</b>	ERIS	1938, 1953, 1968, 1975, 1980, 1996, 2005, 2014
<b>Fire Insurance (Sanborn) Maps:</b>	ERIS	Not available
<b>USGS Topographic Maps:</b>	USGS	1953, 1973, 2012, 2015,
<b>Local Street Directories:</b>	Hemet Library	Not available
<b>Building Department Records:</b>	Riverside County Building Department	1997 - Current
<b>Fire Department Records:</b>	Riverside County Fire Department	Pending response from agency
<b>Zoning/Land Use Records:</b>	Riverside County Planning Department	1997 - Current
<b>Property Tax Files and Land Title Records:</b>	Riverside County Assessor	Current
<b>Key Site Manager Interview:</b>	Pre-Survey Questionnaire	1987-Current
<b>Other Historical Sources:</b>	Not applicable	Not applicable

EMG was not able to obtain standard historical sources that document the Project history in five year intervals. Furthermore, EMG was not able to document the use of the Project back to the first developed use, or back to 1940, whichever is earlier. The lack of this information represents a data gap. However, based on the other information obtained during the completion of this assessment, the lack of this information does not represent a significant data gap.

### 6.1 PROJECT HISTORICAL USE

Based on review of the historical resources identified in Section 6.0, the following chronological history was developed for the Project.

CHRONOLOGICAL HISTORY OF PROJECT			
YEARS	PROJECT USE	TENANTS	ENVIRONMENTAL CONCERN
Prior to 1938	No historical data available.	Not applicable	No
1938 - 1975	Vacant, non-arable land	Not applicable	No
1979 - Current	Residential and vacant, non-arable land	Not applicable	No

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OWNERSHIP HISTORY OF PROJECT		
YEAR PURCHASED	OWNER NAME	ENVIRONMENTAL CONCERN
		No

## 6.2 OFF-SITE HISTORICAL USE

Based on review of the historical resources identified in Section 6.0, the following chronological history was developed for the adjacent properties.

CHRONOLOGICAL HISTORY OF ADJACENT PROPERTIES		
YEARS	ADJACENT PROPERTY USE	ENVIRONMENTAL CONCERN
NORTH		
Prior to 1938	No historical data available.	No
1938 - 1980s	Vacant, non-arable land	No
1980s - Current	Vacant, non-arable land and residential	No
EAST		
Prior to 1938	No historical data available.	No
1938 - Current	Vacant, non-arable land	No
SOUTH		
Prior to 1938	No historical data available.	No
1938 - Current	Vacant, non-arable land	No
WEST		
Prior to 1938	No historical data available.	No
1938 - 1980s	Vacant, non-arable land	No
1980s - Current	Residential	No

Review of the historical adjacent property uses did not identify visible evidence of a release. Furthermore, no releases were identified at the adjacent properties based on review of the regulatory database report (Section 7.1.2). Therefore, the historical adjacent property uses do not represent a recognized environmental condition.

## 7.0 ENVIRONMENTAL RECORDS REVIEW

The purpose of the records review is to obtain and review records that will help identify recognized environmental conditions. ASTM E1527-13 requires the review of reasonably ascertainable records from standard sources as defined in Section 8.2.1 of ASTM E1527-13. Additional records sources, such as local fire department records, local building department records, and local environmental health department records may be obtained and reviewed at the discretion of the environmental professional.

The availability of record information varies widely, depending on the source. Reasonably ascertainable records are those records that are publicly available, obtainable within reasonable time and cost constraints, and practically reviewable. In addition, the records must be provided by the agency within 20 calendar days of receiving a request, at no more than a nominal cost intended to cover the source's cost of retrieving and duplicating the information.

### 7.1 REGULATORY DATABASE REVIEW

EMG obtained a regulatory database report from a commercial database provider in an effort to determine if the Project is a listed regulatory site and whether there are any mappable regulatory database sites within the search distances specified by ASTM E1527-13. EMG attempted to field-verify the locations of the identified regulatory sites, as well as confirm distances and locations relative to the Project using available mapping software. Therefore, the distances and/or directions noted in this section may not match the Database Report. In addition, EMG reviewed the unmappable sites in the database report, cross-referencing addresses and site names.

In accordance with ASTM E1527-13, regulatory files and/or records associated with standard environmental record sources may be obtained and reviewed when the files and/or records are reasonably ascertainable, the files/records are expected to contain significant information for the purpose of identifying recognized environmental conditions, and an alternative source of the information is not available. Furthermore, review of regulatory files and/or records may be limited by the scope of work. Unless otherwise noted in Section 1.1, further review of regulatory agency files and/or records is not considered to be warranted based on the general nature of the regulatory database listing, the level of detail provided in the regulatory database, the availability of information from alternative sources, and/or the low likelihood that the agency files and/or records will contain information indicating the presence of a recognized environmental condition.

A copy of the full regulatory database report is included in Appendix H.

#### 7.1.1 PROJECT REGULATORY DATABASE REVIEW

The search for sites listed on regulatory databases did not identify any listings for the Project.

#### 7.1.2 OFF-SITE REGULATORY DATABASE REVIEW

The search for sites listed on regulatory databases in the area surrounding the Project did not identify any sites within the specified search radii.

#### 7.1.3 VAPOR MIGRATION

Indoor air quality concerns are generally excluded from the scope of ASTM E1527-13 and this assessment. However, the migration of vapors caused by a release of hazardous substances or petroleum products to the environment can represent a recognized environmental condition in certain conditions.

For the purposes of this assessment, the potential for migrating vapors to represent a recognized environmental condition was evaluated using a limited screening method based on technical guidance documents from the US EPA and *ASTM E2600-15 Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*. In addition, screening tools created by regulatory agencies may be used to evaluate the significance of a release with respect to the vapor migration and/or vapor intrusion potential.

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EMG's vapor migration screening is not a human health risk assessment and is not intended to comply with regulatory requirements that might exist for the evaluation of vapor migration.

Based on the review of regulatory database records in Section 7.1.1 and 7.1.2, no vapor migration concerns were identified.

## 7.2 LOCAL AGENCY RECORDS

The following additional environmental records were reviewed to supplement the standard environmental record sources discussed in Sections 7.1.1 and 7.1.2.

Reasonably ascertainable records for the Project may be reviewed for evidence of recognized environmental conditions and other environmental concerns such as underground storage tanks, significant hazardous materials use, the presence of septic systems, and/or the presence of wells.

BUILDING DEPARTMENT	
<b>Name of Agency:</b>	Riverside County Building Department
<b>Contact Name/Telephone:</b>	(951) 955-1800
<b>Review Method:</b>	Online records review
<b>Records Date Back To:</b>	1997 - Current
<b>Summary of Records Reviewed:</b>	No environmentally significant information was identified
<b>Environmentally Significant Information:</b>	None identified

FIRE DEPARTMENT	
<b>Name of Agency:</b>	Riverside County Fire Department
<b>Contact Name/Telephone:</b>	(951) 943-4970
<b>Review Method:</b>	A written request for information has been submitted. A response is currently pending. A copy of the request is included in Appendix F.
<b>Records Date Back To:</b>	Pending response from agency
<b>Summary of Records Reviewed:</b>	Pending response from agency
<b>Environmentally Significant Information:</b>	Pending response from agency

PLANNING/ZONING DEPARTMENT	
<b>Name of Agency:</b>	Riverside County Planning Department
<b>Contact Name/Telephone:</b>	(760) 863-8277
<b>Review Method:</b>	Online records review.
<b>Records Date Back To:</b>	1997 - Current
<b>Current Zoning:</b>	RR - Rural Residential
<b>Historical Zoning:</b>	Not available
<b>Environmentally Significant Information:</b>	No environmentally significant information was identified



## 8.0 ASTM E1527 NON-SCOPE CONSIDERATIONS

The items discussed in this section are outside the scope of ASTM E1527-13. These are included at the discretion of the user based upon the scope of work.

### 8.1 ASBESTOS

In accordance with the scope of work, EMG performed a screening to document the presence of known and/or suspect asbestos containing materials (ACM) at the Project. This screening approach is not a comprehensive (i.e., AHERA-Style) asbestos survey, nor is it intended to fulfill the NESHAP requirements for demolition or renovation purposes. All materials listed in Appendix G of the United States Environmental Protection Agency (USEPA) publication Managing Asbestos in Place (the "Green Book") are considered suspect.

Some non-friable building products, such as sheet vinyl floor tile, vinyl floor tile, floor tile mastic, asbestos-cement board, and roofing materials can still be manufactured with asbestos and installed in the United States. However, U.S. manufacturers have largely excluded asbestos fibers from their building products since 1981. In addition to a visual assessment, EMG reviewed provided documentation to determine if asbestos has been previously documented at the Project.

SUSPECT ASBESTOS CONTAINING MATERIALS		
MATERIAL	FRIABLE	CONDITION
Roofing materials	No	Good
Vinyl composition tile	No	Good
Mastic	No	Good
Wallboard/joint compound	No	Good

Based on the scope of work, sampling of suspect asbestos containing materials was not performed. Refer to Section 1.1 for further discussion.

### 8.2 RADON GAS

Radon originates from the natural (radioactive) breakdown of uranium in soil, rock and water and is the second leading cause of lung cancer in the United States. Radon can move up through the ground and into living spaces through cracks and other holes in the foundation. The USEPA has developed the EPA Map of Radon Zones to assist National, State, and local organizations in implementing radon-resistant building codes. This map assigns each county in the U.S. to one of three zones based on radon potential. The USEPA uses a continuous exposure level of 4.0 pCi/L (picoCuries per liter of air) as an action level at which additional action is recommended.

For the purposes of this assessment, the radon zone and the use of the Project have been used to determine the level of risk associated with radon. However, the USEPA and the Surgeon General recommend testing all homes for radon, regardless of geographic location.

EPA RADON ZONE
Zone 2 (Moderate Potential) - Counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.

Radon sampling was not performed based on the Scope of Work.

### 8.3 LEAD BASED PAINT

All paint applied prior to 1978 is considered suspect. The basis for this determination is taken from the Lead Paint Poisoning Act passed by the Congress of the United States that banned the use of lead paint starting January 1, 1978. This screening approach does not



comply with Requirements for Disclosure of Known Lead-Based Paint and/or Lead-Based Paint Hazards in Housing. This approach does not constitute a pre-occupancy survey or the basis of attainment of "Lead Free" certification.

Generally, due to the date of construction, the potential use of lead-based paint was minimized due to regulatory requirements and sound business practice. Based on the date of construction and the Scope of Work, no samples were collected. No further action or investigation is recommended regarding lead-based paint.

## 8.4 LEAD IN DRINKING WATER

Lead is commonly used in household plumbing materials and water service lines. Exposure to lead in drinking water above the USEPA action level can result in adverse health effects in children and adults. Lead is rarely found in source water, but enters tap water through corrosion of plumbing materials. Homes built before 1986 are more likely to have lead pipes, fixtures and solder. The most common problem is with brass or chrome-plated brass faucets and fixtures which can leach significant amounts of lead into the water. The USEPA action level for lead-in-drinking water is 15 parts per billion (ppb).

The Project is served by a private well. No documentation regarding lead in water testing was provided to EMG. Refer to Section 1.1 for further discussion.

## 8.5 MOISTURE CONDITIONS

EMG performed a limited visual and olfactory assessment for evidence of moisture conditions in readily accessible interior areas of the Project. In addition, the Key Site Manager was interviewed regarding the presence of current and historical moisture conditions. This assessment was not designed to discover all areas which may be affected by moisture conditions. Rather, it is intended to provide an indication of significant moisture conditions observed during the site visit. Moisture conditions may be present in areas not observed, such as pipe chases, HVAC systems, and behind enclosed walls and ceilings. De minimis moisture conditions, such as small, isolated, water stains on ceiling tiles, and mildew at bathtubs and sinks are considered to be routine maintenance issues and are not addressed in this Report.

EMG did not observe visual or olfactory indications of significant moisture conditions in readily accessible interior areas of the Project. Furthermore, the Key Site Manager did not report any significant current or historical moisture conditions at the Project.

## 8.6 WETLANDS

For regulatory purposes under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." A wetlands delineation is beyond the scope of this assessment. However, review of National Wetlands Inventory (NWI) data, provided by the United States Fish and Wildlife Service, indicated the following:

WETLANDS REVIEW	
PROJECT	ADJACENT PROPERTIES
Review of the NWI data did not identify any wetlands.	Review of the NWI data did not identify any wetlands.

No wetlands were identified. No further action or investigation is recommended regarding wetlands.

## 8.7 FLOOD ZONE

FEMA identifies flood hazards, assesses flood risks and partners with states and communities to provide accurate flood hazard and risk data to guide them to mitigation actions. Flood hazard mapping is the basis for the National Flood Insurance Program (NFIP) and flood insurance requirements. FEMA maintains and updates data through Flood Insurance Rate Maps (FIRMs) and risk assessments. FIRMs

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include statistical information such as data for river flow, storm tides, hydrologic/hydraulic analyses and rainfall and topographic surveys. Review of the FIRM indicated the following:

FLOOD ZONE MAP REVIEW	
MAP DATE	PROJECT FLOOD ZONE
Not applicable	The entire Project is located in an area of undetermined flood hazard that does not appear on a Flood Insurance Rate Map or Flood Hazard Boundary Map where flooding is possible.

The flood zone designation is provided for informational purposes only. A determination of the need for flood insurance is beyond the scope of this assessment.

## 9.0 LIMITATIONS, KEY TERMS, AND REFERENCES

### 9.1 LIMITATIONS

The opinions EMG expresses in this report were formed utilizing the degree of skill and care ordinarily exercised by any prudent Environmental Professional in the same community under similar circumstances. EMG assumes no responsibility or liability for the accuracy of information contained within this report that has been obtained from the Client or the Client's representatives, from other interested parties, or from the public domain. The conclusions presented represent EMG's professional judgment based on information obtained during the course of this assignment.

Factual information regarding operations, conditions, and test data provided by the Client or the Client's representative has been assumed to be correct and complete. The conclusions presented within this report are based on the data provided, observations made, and conditions that existed specifically on the date of the assessment.

EMG's ESA cannot wholly eliminate the uncertainty regarding the presence of recognized environmental conditions and environmental business risk. The report is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with the Project. The report is limited in budget and scope. The nature of subsurface soil and ground water at the Project cannot be confirmed, given the limited budget and scope of this ESA. The report is not and should not be considered a warranty or guarantee about the presence or absence of environmental contaminants which might affect the Project. It should be understood that EMG's suggested remedy may be determined under time constraints or may be formed without the aid of engineering calculations, testing, exploratory probing, the removal of materials, or design. Furthermore, there may be other alternate or more appropriate schemes or methods to remedy the noted environmental conditions.

### 9.2 REFERENCES

References are listed below. Additional references may be present within the applicable report sections.

#### Physical Setting

7 1/2 minute USGS Topographic Quadrangle (included in Appendix C)

1:2,500,000 scale Geology of the Conterminous United States map published by the USGS and dated 1974

Natural Resources Conservation Service (NRCS) Web Soil Survey

#### Regulatory Records

Database Report, Ecolog ERIS Ltd. (included in Appendix H)

#### Key Site Manager Interview

Key Site Manager Questionnaire, (included in Appendix D)

#### Historical References

STANDARD HISTORICAL SOURCES		
DATA TYPE	SOURCE	YEARS COVERED
<b>Aerial Photographs:</b>	ERIS	1938, 1953, 1968, 1975, 1980, 1996, 2005, 2014
<b>Fire Insurance (Sanborn) Maps:</b>	ERIS	Not available
<b>USGS Topographic Maps:</b>	USGS	1953, 1973, 2012, 2015,

STANDARD HISTORICAL SOURCES		
DATA TYPE	SOURCE	YEARS COVERED
<b>Local Street Directories:</b>	Hemet Library	Not available
<b>Building Department Records:</b>	Riverside County Building Department	1997 - Current
<b>Fire Department Records:</b>	Riverside County Fire Department	Pending response from agency
<b>Zoning/Land Use Records:</b>	Riverside County Planning Department	1997 - Current
<b>Property Tax Files and Land Title Records:</b>	Riverside County Assessor	Current
<b>Key Site Manager Interview:</b>	Pre-Survey Questionnaire	1987-Current
<b>Other Historical Sources:</b>	Not applicable	Not applicable

### 9.3 KEY TERMS

**Business environmental risk** - A risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. Consideration of business environmental risk issues may involve addressing one or more non-scope considerations. For the purposes of this assessment, a significant business environmental risk is both included in the agreed upon scope of work and requires further action at this time.

**Controlled recognized environmental condition** - A recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

**Data gap** - The lack of or inability to obtain information required by ASTM E 1527-13 despite good faith efforts is considered a data gap. A data gap is considered significant if it affects the ability of the environmental professional to identify recognized environmental conditions.

**De minimis condition** - A condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis conditions are not recognized environmental conditions nor controlled recognized environmental conditions.

**Environmental Professional** - A person meeting the education, training, and experience requirements set forth in 40 CFR 312.10(b).

**Historical recognized environmental condition** - A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g. property use restriction, AULS, institutional controls, or engineering controls), at the time the Phase I ESA is conducted (e.g., if there has been a change in the regulatory criteria). If the EP considers this past release to be a REC at the time the Phase I ESA is conducted, the condition shall be included in the conclusion section of the report as a REC.

**Material threat** - A physically observable or obvious threat which is reasonably likely to lead to a release that, in the opinion of the environmental professional, is threatening and might result in impact to public health or the environment.

**Practically reviewable** - Information that is provided by the source in a manner and in a form that, upon examination, yields information relevant to the property without the need for extraordinary analysis of irrelevant data.

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**Release** - Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant), with certain exclusions as defined in 42 U.S.C. 9601 (22).

**Reasonably ascertainable** - Information that is publicly available, obtainable from its source within reasonable time and cost constraints, and practically reviewable.

**Recognized environmental condition** - The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property 1) due to any release to the environment; 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.

**Standard environmental record sources** - Environmental records contained in various regulatory databases, with search distances defined by ASTM E1527-13, unless otherwise specified by client in the scope of work.

**Standard historical sources** - Reasonably ascertainable records, including aerial photographs, fire insurance maps, property tax files, recorded land title records, USGS topographic maps, local street directories, building department records, and zoning/land use records.

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**APPENDIX A:**  
**PHOTOGRAPHS**

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PHOTO #1 PROPERTY OVERVIEW



PHOTO #2 VACANT ON PROJECT



PHOTO #3 VACANT LAND ON WEST PORTION OF PROJECT



PHOTO #4 PERMANENT RESIDENCE



PHOTO #5 MOBILE HOME STRUCTURE



PHOTO #6 GARAGE STRUCTURE



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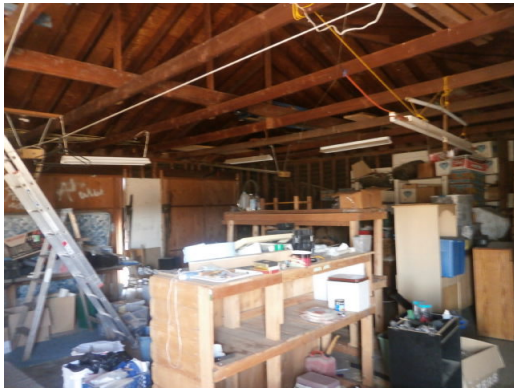


PHOTO #7 INTERIOR GARAGE STRUCTURE



PHOTO #8 INTERIOR PERMANENT RESIDENCE



PHOTO #9 INTERIOR MOBILE HOME RESIDENCE



PHOTO #10 JANITORIAL SUPPLIES



PHOTO #11 PROPANE TANK



PHOTO #12 PROPANE TANK

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PHOTO #13 TRASH BINS



PHOTO #14 APPROXIMATE LOCATION OF SEPTIC SYSTEM



PHOTO #15 WATER WELL



PHOTO #16 WATER HEATER AND FURNACE



PHOTO #17 NORTH ADJACENT SINGLE FAMILY RESIDENCE



PHOTO #18 EAST ADJACENT WINCHESTER ROAD FOLLOWED BY VACANT LAND

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PHOTO #19	SOUTH ADJACENT VACANT LAND
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PHOTO #20	WEST ADJACENT SINGLE FAMILY RESIDENCES
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**APPENDIX B:**  
**FIELD SKETCH**

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## Field Sketch



**R** – Permanent residence  
**M** – Mobile home residence  
**G** – Garage  
**W** – Water well and water storage  
**T** – Trash bins  
**S** – Septic system

**- - Project Boundary**

Not drawn to scale. The north arrow indicator is an approximation of 0° North.

**Project Number:**

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**Project Name:**

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**On-Site Date:**

May 26, 2016

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**APPENDIX C:**  
**MAPS AND AERIAL PHOTOGRAPHS**

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# TOPOGRAPHIC MAP



## Source:

USGS Topographic Quadrangle:  
Bachelor Mountain, California

— Project Boundary

Date: 2015

The north arrow indicator is an approximation of 0° North.



## Project Number:

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## Project Name:

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## On-Site Date:

May 26, 2016



# WETLANDS MAP



U.S. Fish and Wildlife Service

## National Wetlands Inventory

May 27, 2016



### Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The U.S. Fish and Wildlife Service is not responsible for the accuracy or completeness of the data shown on this map. All wetlands-related data should be used in accordance with the layer metadata found on the Wetlands Manual web site.



### Source:

U.S. Fish and Wildlife Service

-- Project Boundary

Date: 2016

### Project Number:

120191.16R000-001.135

### Project Name:

34155 Winchester Road

### On-Site Date:

May 26, 2016



The north arrow indicator is an approximation of 0° North.

# TAX MAP



**Source:**

Riverside County Assessor

-- Project Boundary

The north arrow indicator is an approximation of 0° North.

**Project Number:**

120191.16R000-001.135

**Project Name:**

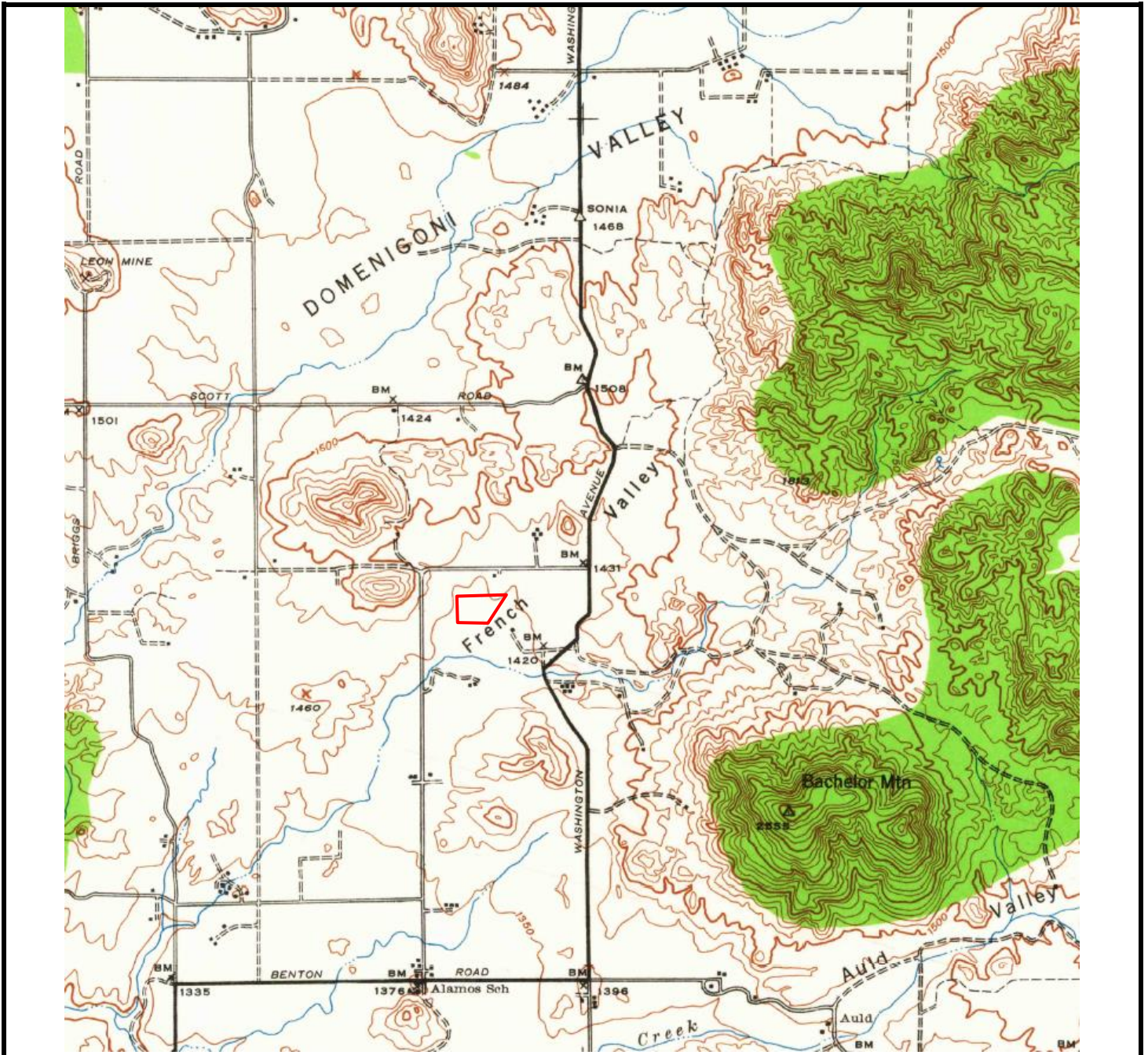
34155 Winchester Road

**On-Site Date:**

May 26, 2016



# HISTORIC TOPOGRAPHIC MAP



**Source:**

USGS

— — Project Boundary

Date: 1942

The north arrow indicator is an approximation of 0° North.

**Project Number:**

120191.16R000-001.135

**Project Name:**

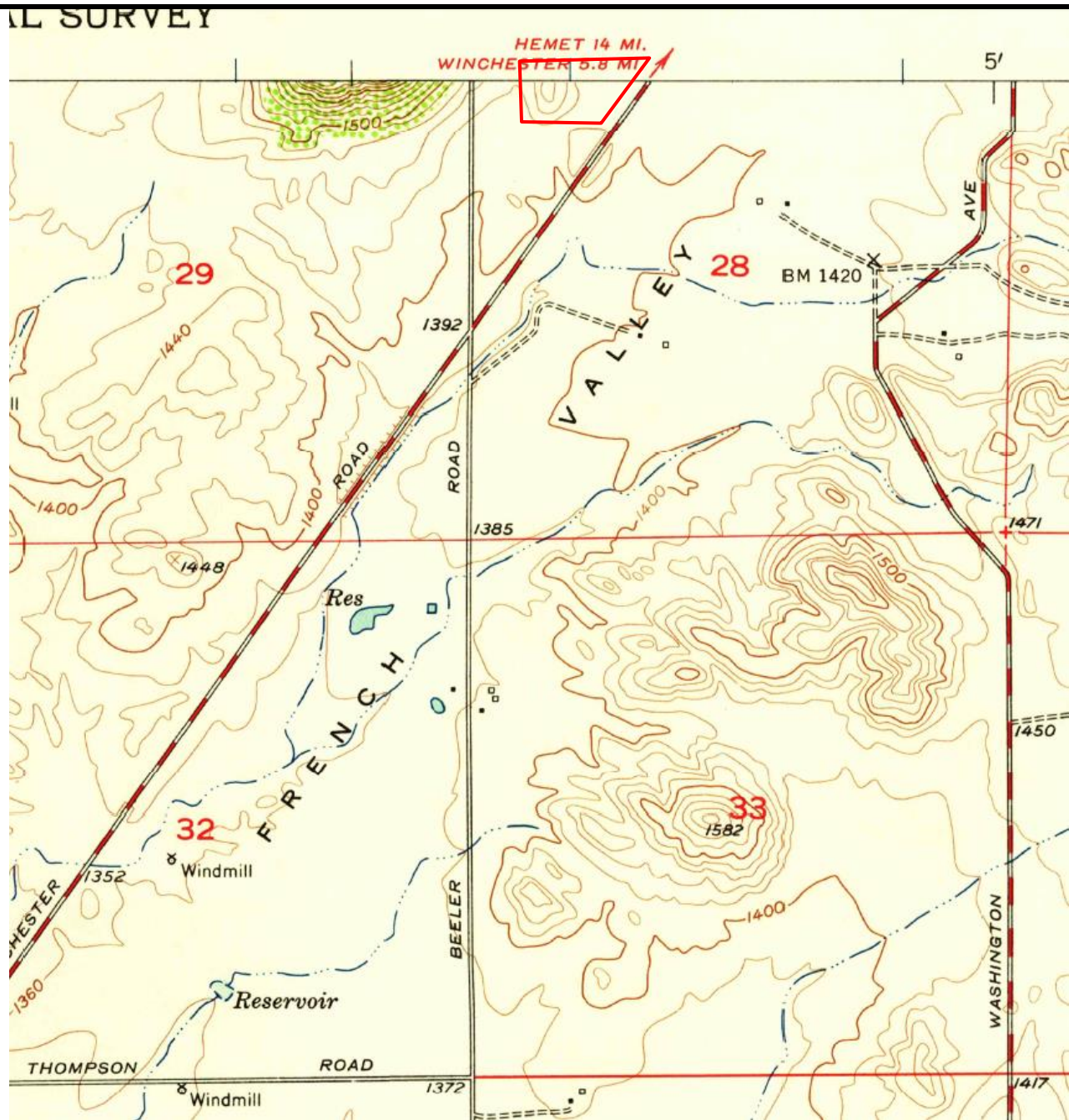
34155 Winchester Road

**On-Site Date:**

May 26, 2016



# HISTORIC TOPOGRAPHIC MAP



**Source:**

USGS

**Project Boundary**

**Date:** 1953

**Project Number:**

120191.16R000-001.135

**Project Name:**

34155 Winchester Road

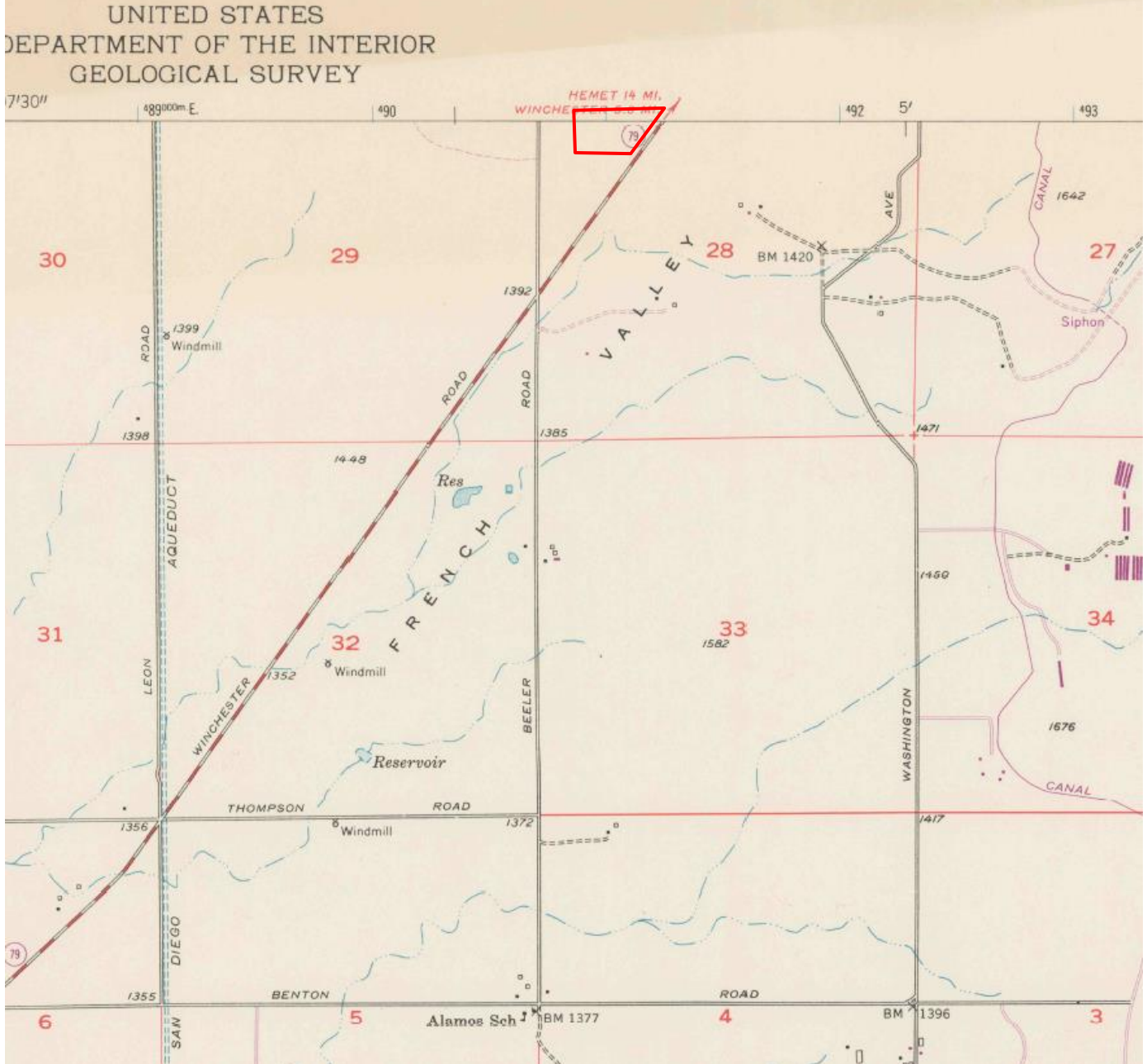
**On-Site Date:**

May 26, 2016



The north arrow indicator is an approximation of 0° North.

# HISTORIC TOPOGRAPHIC MAP



**Source:**

USGS

— — **Project Boundary**

Date: 1973

The north arrow indicator is an approximation of 0° North.

Project Number:

**120191.16R000-001.135**

**Project Name:**

**34155 Winchester Road**

**On-Site Date:**

**May 26, 2016**



# AERIAL PHOTOGRAPH



**Source:**

ERIS

-- Project Boundary

Date: 1938

The north arrow indicator is an approximation of  
0° North.

**Project Number:**

120191.16R000-001.135

**Project Name:**

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# AERIAL PHOTOGRAPH



**Source:**

ERIS

-- Project Boundary

Date: 1953

The north arrow indicator is an approximation of  
0° North.

**Project Number:**

120191.16R000-001.135

**Project Name:**

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# AERIAL PHOTOGRAPH



Source:

ERIS

-- Project Boundary

Date: 1975



The north arrow indicator is an approximation of 0° North.

Project Number:

120191.16R000-001.135

Project Name:

34155 Winchester Road

On-Site Date:

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# AERIAL PHOTOGRAPH



**Source:**

ERIS

-- Project Boundary

Date: 1980

The north arrow indicator is an approximation of  
0° North.

**Project Number:**

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**Project Name:**

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# AERIAL PHOTOGRAPH



**Source:**

ERIS

— — Project Boundary

Date: 1995

The north arrow indicator is an approximation of  
0° North.

**Project Number:**

120191.16R000-001.135

**Project Name:**

34155 Winchester Road

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# AERIAL PHOTOGRAPH



Source:

ERIS

— Project Boundary

Date: 2015



The north arrow indicator is an approximation of 0° North.

Project Number:

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Project Name:

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## **APPENDIX D:**

## **QUESTIONNAIRES**

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engineering | environmental | capital planning | project management

## KEY SITE MANAGER QUESTIONNAIRE

Name of person completing questionnaire: William R. Liesman

Association with property: Owner/Trustee

Length of association with property: 28 years

Date: 5/20/2016

Phone Number: 951-333-3544

Property Name: 34155 Winchester Road

EMG Project Number: 120191.16R000-001.135

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**Directions:** Please answer all questions to the best of your knowledge and in good faith. Mark the column corresponding to the appropriate response. Additional details necessary to explain any **yes or unknown responses** should be provided in the "Comments" column.

Note: U/NR indicates "Unknown" or "No Response".

QUESTION		RESPONSE			COMMENTS
		Y	N	U/NR	
1A.	Is the Project used for an industrial use?		X		
1B.	Are any adjoining properties used for an industrial use?		X		
2A.	To the best of your knowledge, has the Project been used for an industrial use in the past?		X		
2B.	To the best of your knowledge, has any adjoining properties been used for an industrial use in the past?		X		
3A.	Is the Project used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?		X		
3B.	Is any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?		X		
4A.	To the best of your knowledge, has the Project been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?		X		



QUESTION		RESPONSE			COMMENTS
		Y	N	U/NR	
4B.	To the best of your knowledge, has any adjoining property been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?		X		
5A.	Are there currently any automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of greater than five gallons in volume or fifty gallons in the aggregate, stored on or used at the Project?		X		
5B.	To the best of your knowledge, have there been previously any automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of greater than five gallons in volume or fifty gallons in the aggregate, stored on or used at the Project?		X		
6A.	Are there currently any industrial drums (typically 55 gallon) or sacks of chemicals located on the Project?		X		
6B.	To the best of your knowledge, have there been previously any industrial drums (typically 55 gallon) or sacks of chemicals located on the Project?		X		
7A.	Are there currently any groundwater monitoring wells or other groundwater wells (i.e., potable drinking water wells) located on the Project?	X			One well with pump and storage for 5,000 gallons serves dwelling and mobile
7B.	To the best of your knowledge, have there been previously any groundwater monitoring wells or other groundwater wells (i.e., potable drinking water wells) located on the Project?	X			Well has been on the property at the same site since at least the late 1970s
8A.	Has fill dirt been brought onto the Project which originated from a contaminated site?		X		
8B.	Has fill dirt been brought onto the Project which is of an unknown origin?		X		
9A.	Are there currently any pits, ponds or lagoons located on the Project in connection with waste treatment or waste disposal?		X		
9B.	To the best of your knowledge, have there been previously any pits, ponds or lagoons located on the Project in connection with waste treatment or waste disposal?		X		
10A.	Is there currently, any stained soil on the Project?		X		
10B.	To the best of your knowledge, has there been previously any stained soil on the Project?		X		
11A.	Are there currently any registered or unregistered storage tanks (above or underground) located on the Project?	X			Two 2500 gallon water storage tanks



QUESTION		RESPONSE			COMMENTS
		Y	N	U/NR	
11B.	To the best of your knowledge, have there been previously any registered or unregistered storage tanks (above or underground) located on the Project?	X			As above since 2000
12A.	Are there currently any vent pipes, fill pipes or access ways indicating a fill pipe protruding from the ground on the Project or adjacent to any structure located on the Project?		X		
12B.	To the best of your knowledge, have there been previously any vent pipes, fill pipes or access ways indicating a fill pipe protruding from the ground on the Project or adjacent to any structure located on the Project?		X		
13A.	Are there currently any flooring, drains, or walls located at the Project that are stained by substances other than water or are emitting foul odors?		X		
13B.	To the best of your knowledge, have there been previously any flooring, drains, or walls located at the Project that are stained by substances other than water or are emitting foul odors?		X		
14A.	If the Project is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed guidelines applicable to the water system?		X		
14B.	If the Project is served by a private well or non-public water system, has the well been designated as contaminated by any government environmental/health agency?		X		
15A.	Have you been informed of the past existence of hazardous substances or petroleum products with respect to the Project or any facility located on the Project?		X		
15B.	Have you been informed of the current existence of hazardous substances or petroleum products with respect to the Project or any facility located on the Project?		X		
16A.	Are there any environmental liens or governmental notification relating to past or current violations of environmental laws with respect to the Project or any facility located on the Project?		X		
16B.	Have you been informed of the past existence of environmental violations with respect to the Project or any facility located on the Project?		X		
16C.	Are you aware of any pending, threatened, or past litigation relevant to hazardous substances of petroleum products in, on or from the property?		X		



QUESTION		RESPONSE			COMMENTS
		Y	N	U/NR	
16D.	Are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on or from the property?		X		
16E.	Are you aware of any notices from any governmental entity regarding any possible violation or environmental laws or possible liability relating to hazardous substances or petroleum products?		X		
17.	Have there been any environmental site assessments of the Project that indicated the presence of hazardous substances or petroleum products on, or contamination of, the Project or recommended further assessment of the Project?		X		
18.	Does the Project discharge waste water on or adjacent to the project, other than storm water, into a storm water sewer system?		X		
19.	Does the Project discharge waste water on or adjacent to the project, other than storm water, or into a sanitary system?		X		
20.	Have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been dumped above grade, buried and/or burned on the Project?		X		
21.	Is there a transformer, capacitor or any hydraulic equipment for which there are any records indicating the presence of PCBs?		X		
22.	Is there now or has there ever been any asbestos-containing materials (ACM), in any application, on the Project?		X		
23.	Has there ever been any asbestos-containing materials testing conducted on the Project?		X		
24.	Is there an asbestos Operations and Maintenance (O&M) program in place at the Project?		X		
25.	Is there now or has there ever been any lead-based paint (LBP) applications on the Project?		X		
26.	Has there ever been lead-based paint testing conducted on the Project?		X		
27.	Is there a Lead Paint Operations and Maintenance (O&M) Program in place at the Project?		X		
28.	Has the water at the Project ever been tested for lead?	X			In the 1980s. No lead ever found
29.	Has Radon testing ever been conducted at the Project?		X		
30.	Are there any other Operations and Maintenance (O&M) programs in place that we should be made aware of?		X		



QUESTION		RESPONSE			COMMENTS
		Y	N	U/NR	
31.	Is the Project or any portion of the Project located or involved in any environmentally sensitive areas (i.e., wetlands, coastal barrier resource areas, coastal barrier improvement act areas, flood plains, endangered species, etc.)?		X		
32.	Do you know or suspect that suspect fungal growth was or is present in the building(s) or HVAC system? - If "Yes", proceed to question #33. - If "No", skip question #33 and proceed to question #34.		X		
33.	Are there reliable procedures that specify the actions (i.e. operations and maintenance) to be taken to prevent and/or respond to suspect fungal growth or suspect fungal growth producing problems?				
34.	Is there a suspect fungal growth Operations and Maintenance (O&M) program in place at the Project?		X		
35.	Is the HVAC system inspected at least annually?	X			
36.	Have identified HVAC problems been corrected in a timely manner?				Two HVAC units in the main house; one A/C is not functional; heater is OK
37.	Is there now, or has there ever been evidence of suspect fungal growth or mildew present at the building(s)? If so, when?		X		
38.	Is there now, or has there ever been any water damage in the building(s), whether from flooding, plumbing, roof leaks, or other sources? If so, when?	X			Two incidents of roof leaks/storm damage late 1990s and early 2000s; fixed at the time. A/C unit leak which was shut down 2012
39.	Has there ever been any sort of Indoor Air Quality (IAQ) or suspect fungal growth testing conducted in the building(s)?		X		
Summarize historical Project use (when was the Project developed with the current improvements, what modifications have taken place, what was the Project used for prior to it's current use)		A single family residence was constructed on the site in 1978 (approx.) upgraded 1992-3. Much of the land has been used exclusively for agricultural purposes.			

Name (please print): William R. Liesman

Date (MM/DD/YYYY):

05/20/2016

Signature:

*William R. Liesman*



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## ASTM E1527-13 USER QUESTIONNAIRE PHASE I ENVIRONMENTAL SITE ASSESSMENT

EMG has been retained to conduct a Phase I Environmental Site Assessment (ESA) on your behalf as contracted in EMG Project #112427.15P. The Phase I ESA will involve site observations, interviews, and a review of available documentation. To ensure the success of the assessment, and in accordance with the ASTM E1527-13 Scope of Work, we are required to ask the following questions to the User of the report seeking to fulfill the User Requirements of the Standard. Please complete and return this questionnaire to Courtney Bartlett via email at [cbartlett@emgcorp.com](mailto:cbartlett@emgcorp.com) or via fax at 410-785-6220 (within two days of receipt).

Date:

Company name:

Property Name/Street Address:

Property City/State/Zip:

Name of person completing  
questionnaire:

Phone Number:

Role/Title:

Fax Number:

Length of association with property:

E-mail address:

Please check one:

User: ☐

User Representative: ☐

Signature:

**Directions:** Please answer all questions to the best of your knowledge and in good faith. Mark the column corresponding to the appropriate response. Additional details necessary to explain any yes or unknown responses should be provided in the "Comments" column. Note: *U* indicates "Unknown", *NR* indicates "No Response" and "N/A" indicates not applicable.

QUESTION		RESPONSE				COMMENTS
		Y	N	U	NR	
1	Are you aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on or from the property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Are you aware of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	





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QUESTION		RESPONSE				COMMENTS
		Y	N	U	NR	
4	Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5	Are you aware of any Activity and Use Limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	As the user of this ESA 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	Does the purchase price being paid for this property reasonably 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	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, as user	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8 (a)	Do you know the past uses of the property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8 (b)	Do you know of specific chemicals that are present or once were present at the property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8 (c)	Do you know of spills or other chemical releases that have taken place at the property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8 (d)	Do you know of any environmental cleanups that have taken place at the property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

If you have access to any of the following helpful documents, please indicate them below and then send them to EMG via standard mail or e-mail along with this questionnaire. Mailing address: 10461 Mill Run Circle, Suite 1100, Owings Mills, MD 21117

**Helpful Documents to be forwarded EMG:**

- ☐ Environmental site assessment reports (i.e., Phase I, Phase II, tank testing results, radon, lead paint, or asbestos testing, etc.)
- ☐ Environmental compliance audit reports; risk assessments; and recorded Activity and Use Limitations (AULs)
- ☐ Environmental permits (i.e., solid waste disposal, hazardous waste disposal, wastewater, NPDES, underground injection, etc.)
- ☐ Registrations for underground storage tanks (USTs) and aboveground storage tanks (ASTs)



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- ☐ Registrations for underground injection systems
- ☐ Material safety data sheets
- ☐ Community right-to-know plan
- ☐ Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans, etc
- ☐ Reports regarding hydrogeological or geotechnical conditions on the property and surrounding area
- ☐ Notices/correspondence from any agency relating to past/current violations of environmental laws, or liens encumbering the property
- ☐ Hazardous waste generator notices or reports
- ☐ Other:



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## ASTM E1527-13 OWNER QUESTIONNAIRE PHASE I ENVIRONMENTAL SITE ASSESSMENT

EMG has been retained to conduct a Phase I Environmental Site Assessment (ESA) on your property as contracted in EMG Project #112427.15P. The Phase I ESA will involve site observations, interviews, and a review of available documentation. To ensure the success of the assessment, and in accordance with the ASTM E1527-13 Scope of Work, we are required to ask the following questions to the Owner or Owner representative. Please complete and return this questionnaire to Courtney Bartlett via email at [cbartlett@emgcorp.com](mailto:cbartlett@emgcorp.com) or via fax at 410-785-6220 (within two days of receipt).

Date:

Company name:

Property Name/Street Address:

Property City/State/Zip:

Name of person completing  
questionnaire:

Phone  
Number:

Role/Title:

Fax Number:

Length of association with property:

E-mail  
address:

Please check one: Owner: ☐ Owner Representative: ☐

Signature:

**Directions:** Please answer all questions to the best of your knowledge and in good faith. Mark the column corresponding to the appropriate response. Additional details necessary to explain any yes or unknown responses should be provided in the "Comments" column. Note: *U* indicates "Unknown", *NR* indicates "No Response" and "N/A" indicates not applicable.

QUESTION		RESPONSE				COMMENTS
		Y	N	U	NR	
1	Are you aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2	Are you aware of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on or from the property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Are you aware of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>Interviews with Owners and Occupants: Section 10 of the ASTM E1527-13 Standard recommends that in addition to the three specific questions above, the Environmental Professional shall attempt to interview owners, operators, and occupants of the property to obtain information indicating recognized environmental conditions in connection with the property. As such, EMG is providing a Pre-Survey Questionnaire under separate cover to the Key Site Manager or other site representative as designated by either the current owner or the intended User of the assessment data.</p>						



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If you have access to any of the following helpful documents, please indicate them below and then send them to EMG via standard mail or e-mail along with this questionnaire. Mailing address: 10461 Mill Run Circle, Suite 1100, Owings Mills, MD 21117

**Helpful Documents to be forwarded EMG:**

- ☐ Environmental site assessment reports (i.e., Phase I, Phase II, tank testing results, radon, lead paint, or asbestos testing, etc.)
- ☐ Environmental compliance audit reports; risk assessments; and recorded Activity and Use Limitations (AULs)
- ☐ Environmental permits (i.e., solid waste disposal, hazardous waste disposal, wastewater, NPDES, underground injection, etc.)
- ☐ Registrations for underground storage tanks (USTs) and aboveground storage tanks (ASTs)
- ☐ Registrations for underground injection systems
- ☐ Material safety data sheets
- ☐ Community right-to-know plan
- ☐ Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans, etc
- ☐ Reports regarding hydrogeological or geotechnical conditions on the property and surrounding area
- ☐ Notices/correspondence from any agency relating to past/current violations of environmental laws, or liens encumbering the property
- ☐ Hazardous waste generator notices or reports
- ☐ Other:

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**APPENDIX E:**  
**LABORATORY ANALYTICAL RESULTS**

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**NO DOCUMENTS ASSOCIATED  
WITH THIS APPENDIX**

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**APPENDIX F:**  
**SUPPORTING DOCUMENTATION**

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Peter Aldana , County Assessor

**General Information**

**APN:** 476-010-013  
**Situs Address:** 34155 WINCHESTER RD WINCHESTER CA 92596-9771  
**Mailing Address:** 31472 CORTE SALINAS TEMECULA CA 92592  
**Legal Description:** 7.44 ACRES NET IN PAR 3 PM 118/043 PM 19

**Use Type:** RESID. SINGLE FAMILY  
**Tax Rate Area:** 094-297

**CLICK HERE**

For More Info  
on this Property!

**Assessment**

**Year Assd:** 2015  
**Land:** \$167,211  
**Structure(s):** \$383,209  
**Other:**  
**Total Land and Improv:** \$550,420  
**HO Exempt?:** Y  
**Exemption Amt:** \$7,000

**Property Characteristics**

**Bedrooms:** 3  
**Baths:** 2  
**Bldg/Liv Area:** 3,620  
**Year Built:** 1979  
**Lot Acres:** 7.440  
**Lot SqFt:** 324,086

**Recent Sale History**

**Document Image:** No Document Found  
**Recording Date:** 05/20/2015  
**Document #:** 0209857  
**Transfer Amount:**



\*\*The information provided here is deemed reliable, but is not guaranteed.

Peter Aldana , County Assessor

**General Information**

**APN:** 476-010-059  
**Situs Address:** 34155 WINCHESTER RD WINCHESTER CA 92596-9771  
**Mailing Address:** 34155 WINCHESTER RD WINCHESTER CA 92596  
**Legal Description:** 7.16 ACRES M/L IN POR PAR 4 PM 118/043 P

**Use Type:** VACANT  
**Tax Rate Area:** 094-297

**CLICK HERE**

For More Info  
on this Property!

**Assessment**

**Year Assd:** 2015  
**Land:** \$146,159  
**Structure(s):**  
**Other:**  
**Total Land and Improv:** \$146,159  
**HO Exempt?:** N  
**Exemption Amt:**

**Property Characteristics**

**Bedrooms:**  
**Baths:**  
**Bldg/Liv Area:**  
**Year Built:**  
**Lot Acres:** 7.160  
**Lot SqFt:** 311,889

**Recent Sale History**

**Document Image:** No Document Found  
**Recording Date:**  
**Document #:** N/A  
**Transfer Amount:**



\*\*The information provided here is deemed reliable, but is not guaranteed.



## **FIRE INSURANCE MAP RESEARCH RESULTS**

**Date: 2016-05-19**

**Order Number:20160518126**

**34155 Winchester Road, Riverside, CA, 92596**

ERIS has searched our in-house collection of close to 1 million Fire Insurance Maps for the address at 34155 Winchester Road, Riverside, CA, 92596.

Please note that no information was found for your site or adjacent properties.

If you have any questions regarding the enclosed information, please do not hesitate to contact us.

*Individual Fire Insurance Maps for the subject property and/or adjacent sites are included with the ERIS environmental database report to be used for research purposes only and cannot be resold for any other commercial uses other than for use in a Phase I environmental assessment.*



Date: 5/27/2016

Dear Sir Or Madam:

Riverside County Fire Department

EMG is an environmental consulting firm conducting an investigation on behalf of the property owner of current and historical conditions which could potentially impact the environmental condition of the following property:

34155 Winchester Road  
Winchester, CA 92596

Through the Freedom of Information Act (FOIA), we request any available information on file which is related to potential environmental issues concerning the above-referenced property. Specifically, we request your assistance by providing us with information concerning existing or historical conditions for the above-referenced property, including:

- 1) How far back are records maintained by this Department?
- 2) Are there any required Department environmental permits, registrations, or notifications, and if any, the compliance status and any reported violations (including violation status)?
- 3) Are there any petroleum product/hazardous material storage tanks, both aboveground and underground?
- 4) Are there any releases of petroleum products and/or hazardous materials?

Any follow-up documentation may be returned via email, faxed to 410.785.6220, or emailed to:

[rfi@emgcorp.com](mailto:rfi@emgcorp.com)

If you need additional information to complete this request, please contact me at 800.733.0660 x6547. Thank you for your prompt attention to this matter.

Sincerely,  
Kate Downey  
Project Manager  
EMG

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**APPENDIX G:**  
**PREVIOUS ENVIRONMENTAL ASSESSMENTS**

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**NO DOCUMENTS ASSOCIATED  
WITH THIS APPENDIX**

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**APPENDIX H:**  
**REGULATORY DATABASE REPORT**

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# DATABASE REPORT

**Project Property:** 34155 Winchester Road  
34155 Winchester Road  
Riverside CA 92596  
120191.16R000-001.13

**Project No:**

**Report Type:** Database Report

**Order No:** 20160518126

**Requested by:** EMG, Inc

**Date Completed:** May 19, 2016

**Ecolog ERIS Ltd.**  
Environmental Risk Information  
Service Ltd. (ERIS)  
A division of Glacier Media Inc.  
P: 1.866.517.5204  
E: info@erisinfo.com  
**[www.erisinfo.com](http://www.erisinfo.com)**

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## **Notice: IMPORTANT LIMITATIONS and YOUR LIABILITY**

**Reliance on information in Report:** This report DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as database review of environmental records.

**License for use of information in Report:** No page of this report can be used without this cover page, this notice and the project property identifier. The information in Report(s) may not be modified or re-sold.

**Your Liability for misuse:** Using this Service and/or its reports in a manner contrary to this Notice or your agreement will be in breach of copyright and contract and ERIS may obtain damages for such mis-use, including damages caused to third parties, and gives ERIS the right to terminate your account, rescind your license to any previous reports and to bar you from future use of the Service.

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# Executive Summary

## Property Information:

**Project Property:** 34155 Winchester Road  
34155 Winchester Road Riverside CA 92596

**Project No:** 120191.16R000-001.13

## **Coordinates:**

**Latitude:** 33.624545  
**Longitude:** -117.098753  
**UTM Northing:** 3,720,531.94  
**UTM Easting:** 490,840.40  
**UTM Zone:** UTM Zone 11S

**Elevation:** 1,458 FT

## Order Information:

**Order No:** 20160518126  
**Date Requested:** May 18, 2016  
**Requested by:** EMG, Inc  
**Report Type:** Database Report

## Ancillary Products:

**Aerial Photographs** Historical Aerials  
**Fire Insurance Maps** US Fire Insurance Maps

# Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
<b>Standard Environmental Records</b>								
<b>Federal</b>								
NPL	Y	1	0	0	0	0	0	0
PROPOSED NPL	Y	1	0	0	0	0	0	0
DELETED NPL	Y	.5	0	0	0	0	-	0
SEMS	Y	.5	0	0	0	0	-	0
SEMS ARCHIVE	Y	.5	0	0	0	0	-	0
CERCLIS	Y	.5	0	0	0	0	-	0
CERCLIS NFRAP	Y	.5	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1	0	0	0	0	0	0
RCRA TSD	Y	.5	0	0	0	0	-	0
RCRA LQG	Y	.25	0	0	0	-	-	0
RCRA SQG	Y	.25	0	0	0	-	-	0
RCRA CESQG	Y	.25	0	0	0	-	-	0
RCRA NON GEN	Y	.25	0	0	0	-	-	0
FED ENG	Y	.5	0	0	0	0	-	0
FED INST	Y	.5	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	.5	0	0	0	0	-	0
MLTS	Y	PO	0	-	-	-	-	0
<b>State</b>								
RESPONSE	Y	1	0	0	0	0	0	0
ENVIROSTOR	Y	1	0	0	0	0	0	0
SWF/LF	Y	.5	0	0	0	0	-	0
HWP	Y	1	0	0	0	0	0	0
LDS	Y	.5	0	0	0	0	-	0
LUST	Y	.5	0	0	0	0	-	0



Database	Searched	Search Radius	Project Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
DLST	Y	.5	0	0	0	0	-	0
UST	Y	.25	0	0	0	-	-	0
AST	Y	.25	0	0	0	-	-	0
DELISTED TNK	Y	.25	0	0	0	-	-	0
UST CLOSURE	Y	.25	0	0	0	-	-	0
HHSS	Y	.25	0	0	0	-	-	0
LUR	Y	.5	0	0	0	0	-	0
HLUR	Y	.5	0	0	0	0	-	0
DEED	Y	.5	0	0	0	0	-	0
VCP	Y	.5	0	0	0	0	-	0
CLEANUP SITES	Y	.5	0	0	0	0	-	0
WIP	Y	.25	0	0	0	-	-	0

#### Tribal

INDIAN LUST	Y	.5	0	0	0	0	-	0
INDIAN UST	Y	.25	0	0	0	-	-	0
DELISTED ILST	Y	.5	0	0	0	0	-	0
DELISTED IUST	Y	.25	0	0	0	-	-	0

#### County

ALAMEDA LOP	Y	.5	0	0	0	0	-	0
ALAMEDA UST	Y	.25	0	0	0	-	-	0
AMADOR CUPA	Y	.25	0	0	0	-	-	0
BUTTE CUPA	Y	.25	0	0	0	-	-	0
CALAVERAS CUPA	Y	.25	0	0	0	-	-	0
CALAVERAS LF	Y	.5	0	0	0	0	-	0
CALAVERAS LUST	Y	.5	0	0	0	0	-	0
COLUSA CUPA	Y	.25	0	0	0	-	-	0
CONTRACO CUPA	Y	.25	0	0	0	-	-	0
DELNORTE CUPA	Y	.25	0	0	0	-	-	0
ELDORADO CUPA	Y	.25	0	0	0	-	-	0
FRESNO CUPA	Y	.25	0	0	0	-	-	0
HUMBOLDT CUPA	Y	.25	0	0	0	-	-	0
IMPERIAL CUPA	Y	.25	0	0	0	-	-	0
INYO CUPA	Y	.25	0	0	0	-	-	0
KERN CUPA	Y	.25	0	0	0	-	-	0
KERN UST	Y	.25	0	0	0	-	-	0
KINGS CUPA	Y	.25	0	0	0	-	-	0
LAKE CUPA	Y	.25	0	0	0	-	-	0
ELSEGUNDO UST	Y	.25	0	0	0	-	-	0
TORRANCE UST	Y	.25	0	0	0	-	-	0
LA HMS	Y	.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
LA LONGB UST	Y	.25	0	0	0	-	-	0
LA SWF	Y	.5	0	0	0	0	-	0
MADERA CUPA	Y	.25	0	0	0	-	-	0
MARIN CUPA	Y	.25	0	0	0	-	-	0
MERCED CUPA	Y	.25	0	0	0	-	-	0
MONO CUPA	Y	.25	0	0	0	-	-	0
MONTEREY CUPA	Y	.25	0	0	0	-	-	0
NAPA UST	Y	.25	0	0	0	-	-	0
NEVADA CUPA	Y	.25	0	0	0	-	-	0
ORANGE AST	Y	.25	0	0	0	-	-	0
ORANGE UST	Y	.25	0	0	0	-	-	0
PLACER CUPA	Y	.25	0	0	0	-	-	0
RIVERSIDE LOP	Y	.5	0	0	0	0	-	0
RIVERSIDE UST	Y	.25	0	0	0	-	-	0
SACRAMENTO HAZ	Y	.5	0	0	0	0	-	0
SACRAMENTO TOX	Y	.5	0	0	0	0	-	0
SANBERN CUPA	Y	.25	0	0	0	-	-	0
SANDIEGO HAZ	Y	.25	0	0	0	-	-	0
SANDIEGO SAM	Y	.5	0	0	0	0	-	0
SANDIEGO SWF	Y	.5	0	0	0	0	-	0
SANFRAN AST	Y	.25	0	0	0	-	-	0
SANFRAN CUPA	Y	.25	0	0	0	-	-	0
SANFRAN LOP	Y	.5	0	0	0	0	-	0
SANFRAN UST	Y	.25	0	0	0	-	-	0
SANJOAQUIN AST	Y	.25	0	0	0	-	-	0
SANJOAQUIN UST	Y	.25	0	0	0	-	-	0
SANJOAQUIN HW	Y	.5	0	0	0	0	-	0
SANMATEO CUPA	Y	.25	0	0	0	-	-	0
SANMATEO LOP	Y	.5	0	0	0	0	-	0
SANTA CLARA CUPA	Y	.25	0	0	0	-	-	0
SANTA CLARA LO	Y	.5	0	0	0	0	-	0
SANTACRUZ CUPA	Y	.25	0	0	0	-	-	0
SHASTA CUPA	Y	.25	0	0	0	-	-	0
SANLUISOB CUPA	Y	.25	0	0	0	-	-	0
SOLANO CUPA	Y	.25	0	0	0	-	-	0
SOLANO LOP	Y	.5	0	0	0	0	-	0
SOLANO UST	Y	.25	0	0	0	-	-	0
SONOMA CUPA	Y	.25	0	0	0	-	-	0
SONOMA LOP	Y	.5	0	0	0	0	-	0
SONOMA PETAL	Y	.25	0	0	0	-	-	0
SUTTER CUPA	Y	.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
TUOLUMNE CUPA	Y	.25	0	0	0	-	-	0
VENTURA CUPA	Y	.25	0	0	0	-	-	0
OXNARD CUPA	Y	.25	0	0	0	-	-	0
VENTURA INUST	Y	.25	0	0	0	-	-	0
VENTURA HLUFT	Y	.5	0	0	0	0	-	0
YOLO UST	Y	.25	0	0	0	-	-	0
YUBA CUPA	Y	.25	0	0	0	-	-	0
BKRSFIELD CUPA	Y	.25	0	0	0	-	-	0
SANTA CLARA GIL	Y	.25	0	0	0	-	-	0
ALPINE CUPA	Y	.25	0	0	0	-	-	0
GLENN CUPA	Y	.25	0	0	0	-	-	0
LASSEN CUPA	Y	.25	0	0	0	-	-	0
MARIPOSA CUPA	Y	.25	0	0	0	-	-	0
SISKIYOU CUPA	Y	.25	0	0	0	-	-	0
STANISLAUS CUPA	Y	.25	0	0	0	-	-	0
TRINITY CUPA	Y	.25	0	0	0	-	-	0
TULARE CUPA	Y	.25	0	0	0	-	-	0

#### Additional Environmental Records

##### **Federal**

FINDS/FRS	Y	PO	0	-	-	-	-	0
TRIS	Y	PO	0	-	-	-	-	0
HMIRS	Y	.125	0	0	-	-	-	0
NCDL	Y	PO	0	-	-	-	-	0
ODI	Y	.5	0	0	0	0	-	0
IODI	Y	.5	0	0	0	0	-	0
TSCA	Y	.125	0	0	-	-	-	0
HIST TSCA	Y	.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	.25	0	0	0	-	-	0

##### **State**

DRYCLEANERS	Y	.25	0	0	0	-	-	0
INSP COMP ENF	Y	1	0	0	0	0	0	0
CDL	Y	.125	0	0	-	-	-	0
SCH	Y	1	0	0	0	0	0	0
CHMIRS	Y	PO	0	-	-	-	-	0
SWAT	Y	.5	0	0	0	0	-	0

<b>Database</b>	<b>Searched</b>	<b>Search Radius</b>	<b>Project Property</b>	<b>Within 0.12mi</b>	<b>0.12mi to 0.25mi</b>	<b>0.25mi to 0.50mi</b>	<b>0.50mi to 1.00mi</b>	<b>Total</b>
HAZNET	Y	PO	0	-	-	-	-	0
CDO/CAO	Y	.5	0	0	0	0	-	0
HIST CHMIRS	Y	PO	0	-	-	-	-	0
HIST MANIFEST	Y	PO	0	-	-	-	-	0

**Tribal** *No Tribal additional environmental record sources available for this State.*

**County**

LA SML	Y	.5	0	0	0	0	-	0
RIVERSIDE HZH	Y	.125	0	0	-	-	-	0
RIVERSIDE HWG	Y	.125	0	0	-	-	-	0
SANJOAQUIN HM	Y	.125	0	0	-	-	-	0
VENTURA HAZR	Y	.5	0	0	0	0	-	0
HW INACTIVE	Y	.5	0	0	0	0	-	0
DELISTED COUNTY	Y	.25	0	0	0	-	-	0

---

**Total:** 0 0 0 0 0 0

\* PO – Property Only

\* 'Property and adjoining properties' database search radii are set at 0.25 miles.

## Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist mi</i>	<i>Elev diff ft</i>	<i>Page Number</i>
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No records found in the selected databases for the project property.

## Executive Summary: Site Report Summary - Surrounding Properties

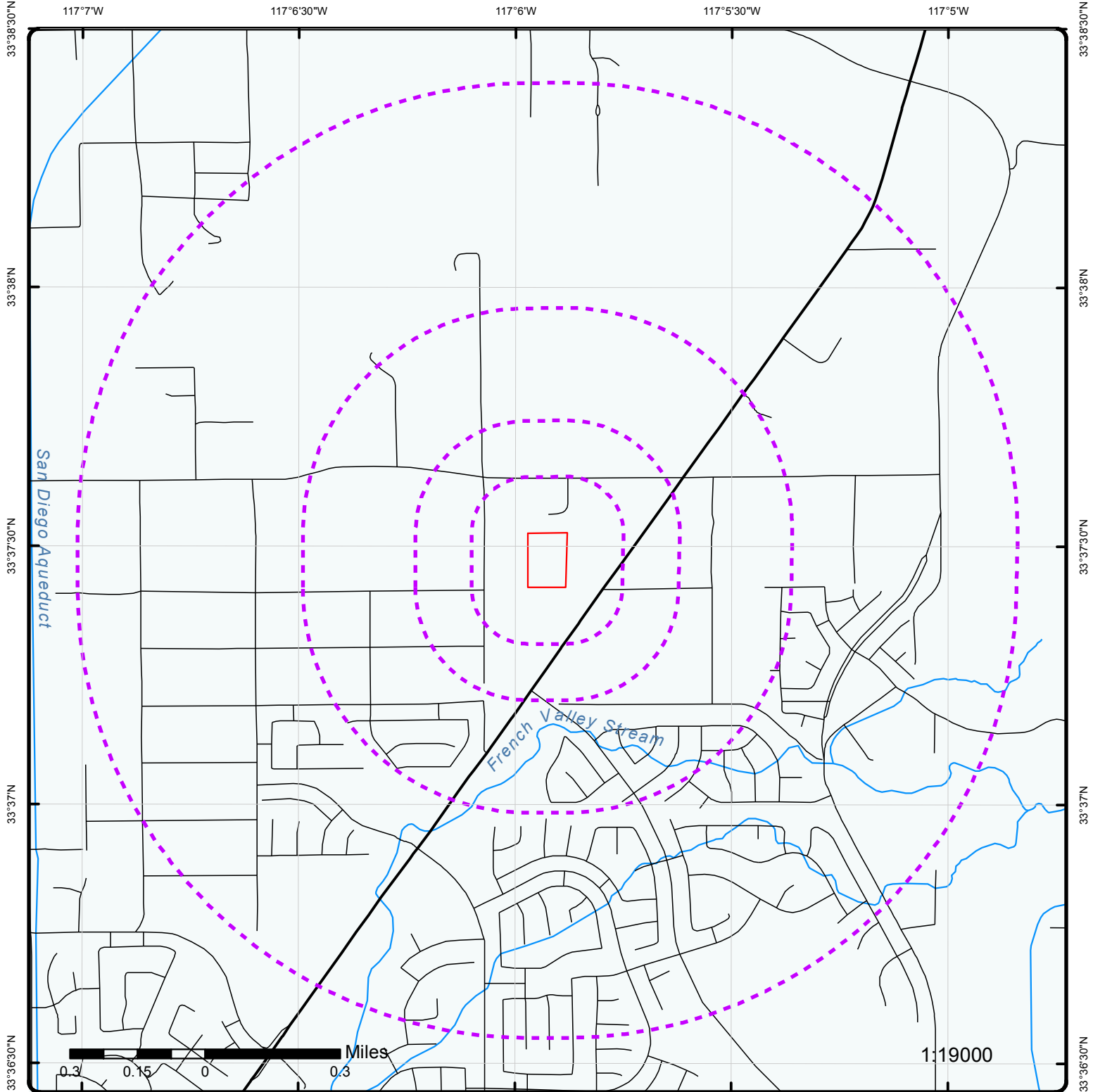
<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Dir/Dist mi</i>	<i>Elev Diff ft</i>	<i>Page Number</i>
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No records found in the selected databases for the surrounding properties.



## Executive Summary: Summary by Data Source

No records found in the selected databases for the project property or surrounding properties.



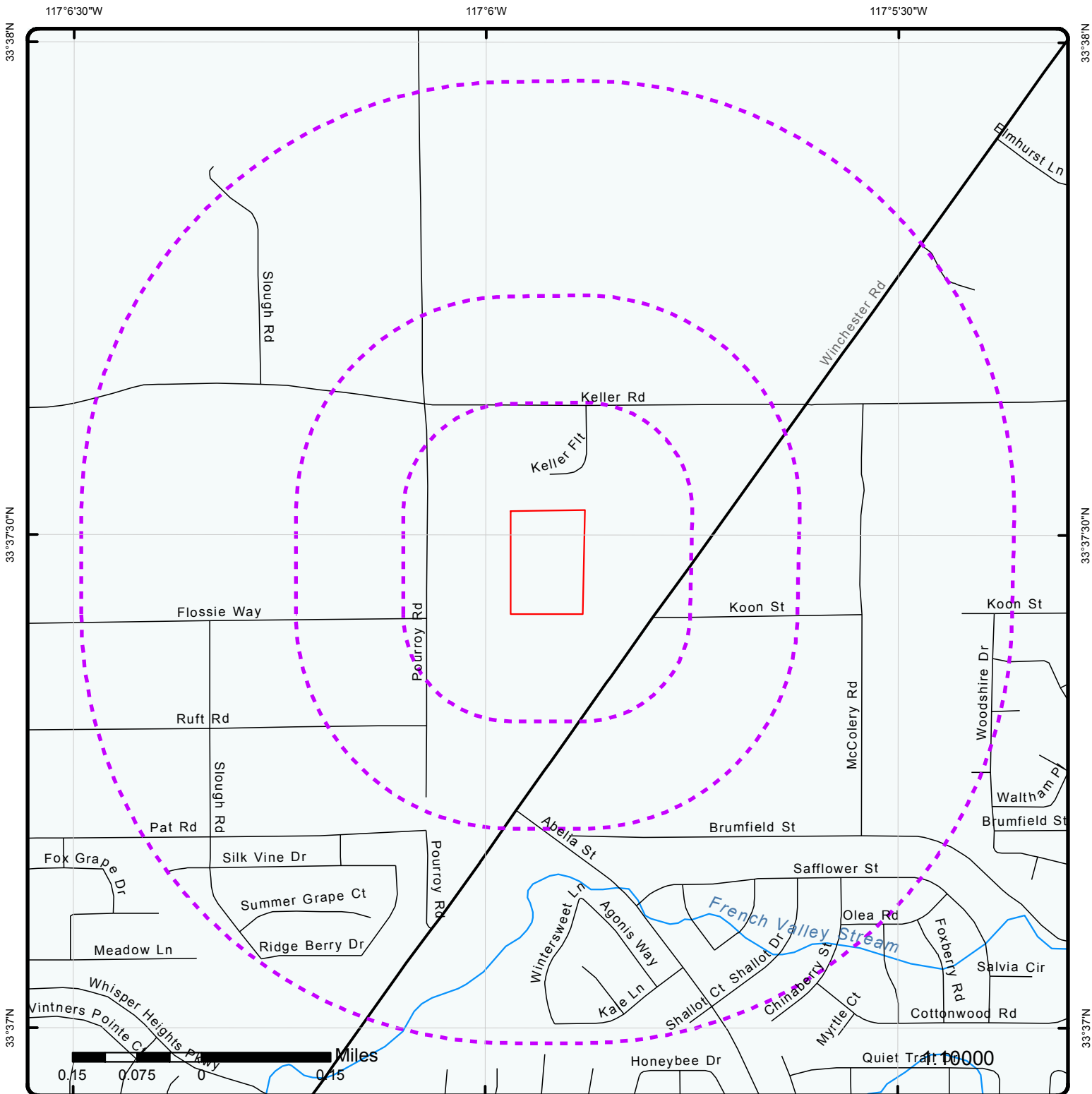
## Map : 1 Mile Radius

Order No: 20160518126

Address: 34155 Winchester Road, Riverside, CA, 92596



	Project Property		Major Highways		County Boundary		Indian Reserve Land
	Buffer Outline		Major Highways Ramps		State Boundary		Historic Fill
	Eris Sites with Higher Elevation		Major Roads		500 Year Flood Zone		State Brownfield Sites
	Eris Sites with Same Elevation		Major Roads Ramps		100 Year Flood Zone		State Brownfield Areas
	Eris Sites with Lower Elevation		Secondary Roads		National Priority List Sites		State Superfund Areas:Dept. of Defense
	Eris Sites with Unknown Elevation		Secondary Roads Ramps		National Wetland		State Superfund Areas:NPL
	Rails		Local Roads and Ramps		FWS Special Designation Areas		WQARF Areas



## Map : 0.5 Mile Radius

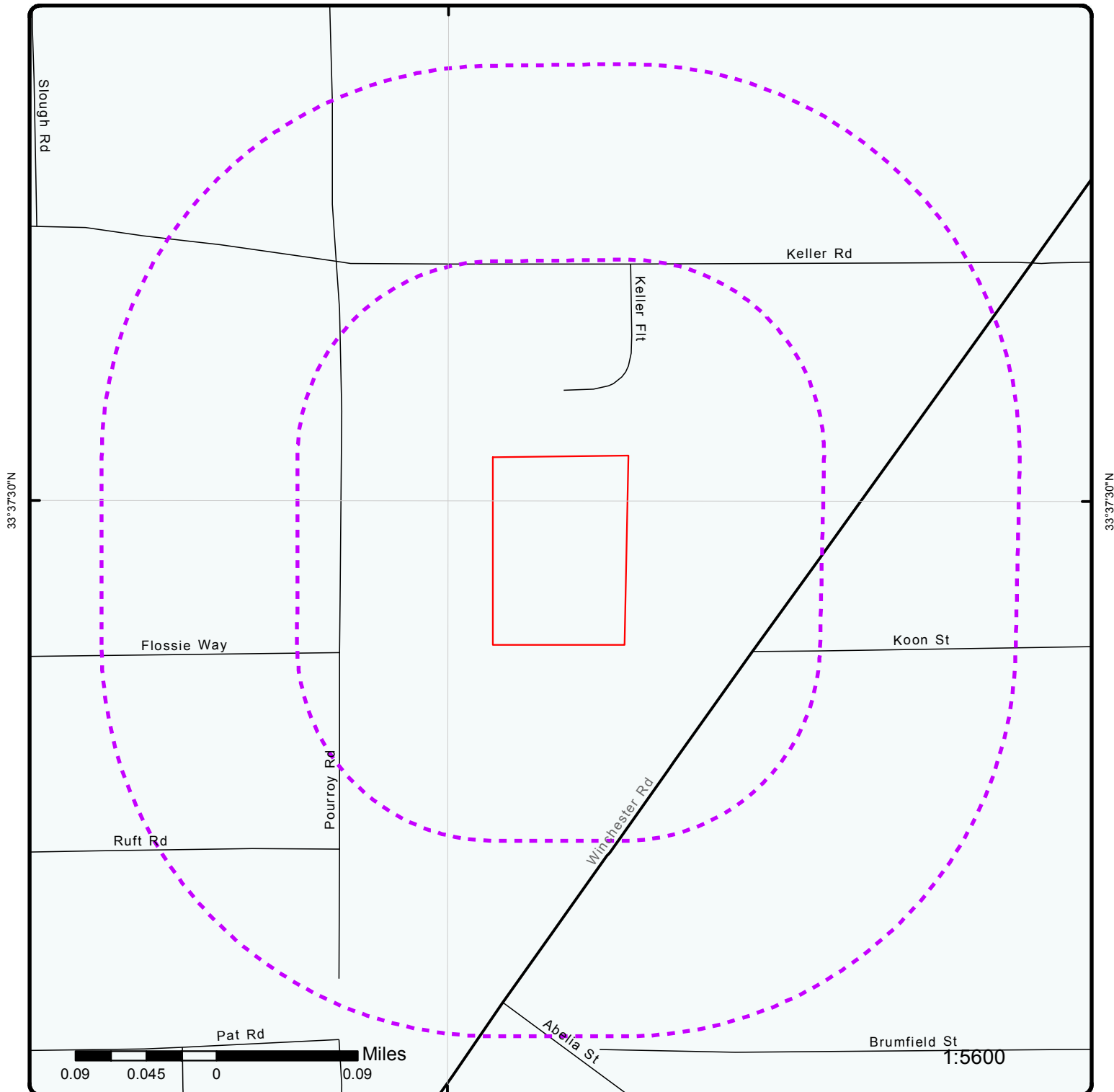
Order No: 20160518126

Address: 34155 Winchester Road, Riverside, CA, 92596



	Project Property		Major Highways		County Boundary		Indian Reserve Land
	Buffer Outline		Major Highways Ramps		State Boundary		Historic Fill
	Eris Sites with Higher Elevation		Major Roads		500 Year Flood Zone		State Brownfield Sites
	Eris Sites with Same Elevation		Major Roads Ramps		100 Year Flood Zone		State Brownfield Areas
	Eris Sites with Lower Elevation		Secondary Roads		National Priority List Sites		State Superfund Areas:Dept. of Defense
	Eris Sites with Unknown Elevation		Secondary Roads Ramps		National Wetland		State Superfund Areas:NPL
	Rails		Local Roads and Ramps		FWS Special Designation Areas		WQARF Areas

117°6'W



## Map : 0.25 Mile Radius

Order No: 20160518126

Address: 34155 Winchester Road, Riverside, CA, 92596



	Project Property		Major Highways		County Boundary		Indian Reserve Land
	Buffer Outline		Major Highways Ramps		State Boundary		Historic Fill
	Eris Sites with Higher Elevation		Major Roads		500 Year Flood Zone		State Brownfield Sites
	Eris Sites with Same Elevation		Major Roads Ramps		100 Year Flood Zone		State Brownfield Areas
	Eris Sites with Lower Elevation		Secondary Roads		National Priority List Sites		State Superfund Areas:Dept. of Defense
	Eris Sites with Unknown Elevation		Secondary Roads Ramps		National Wetland		State Superfund Areas:NPL
	Rails		Local Roads and Ramps		FWS Special Designation Areas		WQARF Areas





# Aerial

Order No: 20160518126

**Address: 34155 Winchester Road, Riverside, CA, 92596**

## Detail Report

<i>Map Key</i>	<i>Number of Records</i>	<i>Direction/ Distance mi</i>	<i>Elevation ft</i>	<i>Site</i>	<i>DB</i>
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No records found in the selected databases for the project property or surrounding properties.



# Unplottable Summary

Total: 15 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
CDL		ANTELOPE ROAD, 1/4 MILE S. OF KELLER	MURRIETA CA	92592	820126139
CLEANUP SITES	DOUBLE BUTTE LANDFILL (CLOSED)	Grand Ave; 600 Ft W Winchester	WINCHESTER CA		820150507
ENVIROSTOR	ELEMENTARY SCHOOL NO. 10	BEELEER ROAD/PATTON AVENUE	WINCHESTER CA	92596	820293357
ENVIROSTOR	PROPOSED ELEMENTARY SCHOOL NO. 10-A	NORTHEAST CORNER ELLIOTT ROAD AND PAT ROAD	WINCHESTER CA	92596	820300702
HHSS	ALIVE POLARITY-FLEETMAINT SH	29480 MURRIETA HOT SPRINGS RD WINCHESTER RD	MURRIETA CA	92362	822979831
HHSS	LAWRENCE T LASAGNA	30885 NICOLAS RD WINCHESTER RD	MURRIETA CA	92362	822953352
LDS	DOUBLE BUTTE LANDFILL (CLOSED)	GRAND AVE; 600 FT W WINCHESTER	WINCHESTER CA		820224599
RCRA SQG	NORTH ORANGE COAST PAINTING	WINCHESTER RD 1 MILE E OF HWY HUNTER POINT HOUSING COMPLEX	FRENCH VALLEY CA	92563	810613800
RIVERSIDE HZH	Sprint Cell Site RV54XC505	36625 Pourroy Rd	Winchester CA	92596	820088238
RIVERSIDE HZH	T-Mobile West Corp(IE25829A)	36627 Pourroy Rd	Murrieta CA	92563	820086836
RIVERSIDE HZH	EMWD Pourroy Lift Station	Pourroy Rd	Murrieta CA	92563	820085330

SCH	PROPOSED ELEMENTARY SCHOOL NO. 10-A	NORTHEAST CORNER ELLIOTT ROAD AND PAT ROAD	WINCHESTER CA	92596	820263437
SCH	ELEMENTARY SCHOOL NO. 10	BEELEER ROAD/PATTON AVENUE	WINCHESTER CA	92596	820264673
SWAT	RIVERSIDE COUNTY- DOUBLE BUTTE LANDFILL	GRAND AVE 600 FT. W. WINCHESTER RD. WINCHESTER, CA 92396	CA		822570421
SWF/LF	Double Butte Disposal Site	Grand Ave; 600 Ft W Winchester	Winchester CA		820220593

# Unplottable Report

**Site:****ANTELOPE ROAD, 1/4 MILE S. OF KELLER MURRIETA CA 92592**

CDL

**Clue:** 1996-01-004**Date:** 1/2/1996**Lab Type:** L**County:** RIVERSIDE**Lab Type Description:** Illegal Drug Lab - location where an illegal drug lab was operated or drug lab equipment and/or materials were stored.**Site: DOUBLE BUTTE LANDFILL (CLOSED)****Grand Ave; 600 Ft W Winchester WINCHESTER CA**

CLEANUP SITES

**Global ID:** L10004864228  
**Case Type:** Land Disposal Site  
**Status:** Open - Closed/with Monitoring  
**Status Date:** 1965-01-01 00:00:00  
**RB Case Number:** 8 330305012  
**LOC Case Number:**  
**CUF Case:** NO  
**County:** Riverside  
**Latitude:** 33.7167  
**Longitude:** -117.10833  
**Lead Agency:** SANTA ANA RWQCB (REGION 8)  
**Case Worker:** JPL  
**Local Agency:**  
**File Location:**  
**Potential Cntm of Concrn:**  
**Potential Media Affected:**

**Site History:**

The Double Butte Sanitary Landfill is owned and was operated by the Riverside County Waste Management Department. The site is located in Section 20, T5S, R2W, Riverside County, California. It was operated as a Class III non-hazardous municipal solid waste landfill from 1973 to 1995. The landfill covers about 580 acres, of which 112 acres were filled with wastes. The landfill site lies in the San Jacinto Ground Water Basin near Winchester and west of Hemet, California. It is divided into four fill areas along the eastern margin of the main valley and one other small fill area in the southwest corner. The types of waste received consisted of 42 percent residential, 42 percent commercial, 11 percent demolition, and 5 percent special. The site underwent closure from November 1995 through May 1997. The Riverside County Waste Management Dept. is currently conducting a Corrective Action Program for groundwater monitoring at the site.

**Activities**

-- --  
**Action Type:** RESPONSE  
**Date:** 1988-01-19 00:00:00  
**Action:** Site Assessment Report  
-- --  
**Action Type:** ENFORCEMENT  
**Date:** 1994-04-22 00:00:00  
**Action:** Waste Discharge Requirements  
-- --  
**Action Type:** ENFORCEMENT  
**Date:** 1998-11-20 00:00:00  
**Action:** Waste Discharge Requirements  
-- --  
**Action Type:** ENFORCEMENT

<b>Date:</b>	1998-12-07 00:00:00
<b>Action:</b>	Waste Discharge Requirements
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	1999-02-11 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	1999-06-07 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2000-03-16 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2000-06-07 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2000-10-11 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2002-02-08 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2002-10-01 00:00:00
<b>Action:</b>	13267 Requirement
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2002-10-10 00:00:00
<b>Action:</b>	Clean-up and Abatement Order
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2003-09-19 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2004-08-30 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2006-12-29 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2009-07-29 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	RESPONSE
<b>Date:</b>	2010-10-31 00:00:00
<b>Action:</b>	Monitoring Report - Semi-Annually
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2011-02-16 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	RESPONSE
<b>Date:</b>	2011-04-30 00:00:00
<b>Action:</b>	Monitoring Report - Semi-Annually
--	--

<b>Action Type:</b>	RESPONSE
<b>Date:</b>	2011-04-30 00:00:00
<b>Action:</b>	Monitoring Report - Annually
--	--
<b>Action Type:</b>	RESPONSE
<b>Date:</b>	2011-10-31 00:00:00
<b>Action:</b>	Monitoring Report - Semi-Annually
--	--
<b>Action Type:</b>	RESPONSE
<b>Date:</b>	2011-12-31 00:00:00
<b>Action:</b>	Monitoring Report - Annually
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2012-07-03 00:00:00
<b>Action:</b>	Staff Letter
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2012-10-16 00:00:00
<b>Action:</b>	Technical Correspondence / Assistance / Other
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2012-12-19 00:00:00
<b>Action:</b>	Technical Correspondence / Assistance / Other
--	--
<b>Action Type:</b>	ENFORCEMENT
<b>Date:</b>	2013-03-07 00:00:00
<b>Action:</b>	Technical Correspondence / Assistance / Other
--	--
<b>Contact Information</b>	--
--	--
<b>Contact Type:</b>	Regional Board Caseworker
<b>Contact Name:</b>	JOANNE LEE
<b>Organization Name:</b>	SANTA ANA RWQCB (REGION 8)
<b>Address:</b>	3737 MAIN STREET, SUITE 500
<b>City:</b>	RIVERSIDE
<b>Email:</b>	jplee@waterboards.ca.gov
<b>Phone Number:</b>	
--	--

**Site:** **ELEMENTARY SCHOOL NO. 10**  
**BEELER ROAD/PATTON AVENUE WINCHESTER CA 92596**

ENVIROSTOR

<b>Estor/EPA ID:</b>	60000105
<b>Site Code:</b>	404639
<b>Cleanup Status:</b>	NO FURTHER ACTION AS OF 6/1/2006
<b>Site Type:</b>	SCHOOL
<b>Potential Media Affected:</b>	NO MEDIA AFFECTED
<b>Past Uses Caused Contam:</b>	AGRICULTURAL - ROW CROPS
<b>APN:</b>	461-18-0036
<b>National Priorities List:</b>	NO
<b>Cleab up Oversight Agenci:</b>	DTSC - SITE CLEANUP PROGRAM - LEAD
<b>Special Program:</b>	VOLUNTARY CLEANUP PROGRAM
<b>Funding:</b>	SCHOOL DISTRICT
<b>Acres:</b>	12 ACRES
<b>School District:</b>	HEMET UNIFIED SCHOOL DISTRICT
<b>Assembly District:</b>	67
<b>Senate District:</b>	28
<b>Zip:</b>	92596

**POTENTIAL CONTAMI:**

METALS: Arsenic, Lead, Total Chromium (1:6 ratio Cr VI:Cr III)  
 ORGANOCHLORINE PESTICIDES (8081 OCPs): Chlordane, DDD, DDE, DDT, Dieldrin, Endrin

## **SITE HISTORY:**

The approximately 12-acre Site is surrounded by vacant land, slated for residential housing. The Site has been historically utilized for agricultural activities, indicating potential chemicals of concern.

### **Facility Information**

--	--
<b>Program Type:</b>	SCHOOL EVALUATION
<b>Status:</b>	NO FURTHER ACTION
<b>Summary Link:</b>	<a href="http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000105">http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000105</a>
--	--
<b>Completed Activities</b>	
--	--
<b>Doc Link:</b>	<a href="http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60000105&amp;doc_id=6008879">http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60000105&amp;doc_id=6008879</a>
<b>Area Name:</b>	
<b>Sub Area:</b>	
<b>Document Type:</b>	Preliminary Endangerment Assessment Report
<b>Date Completed:</b>	1/18/2006
<b>Comments:</b>	NFA
<b>Activity Type:</b>	Completed Activities
--	--
<b>Doc Link:</b>	
<b>Area Name:</b>	
<b>Sub Area:</b>	
<b>Document Type:</b>	Preliminary Endangerment Assessment Workplan
<b>Date Completed:</b>	10/19/2005
<b>Comments:</b>	Tech Memo Approved
<b>Activity Type:</b>	Completed Activities
--	--
<b>Doc Link:</b>	<a href="http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60000105&amp;enforcement_id=6007449">http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60000105&amp;enforcement_id=6007449</a>
<b>Area Name:</b>	
<b>Sub Area:</b>	
<b>Document Type:</b>	Environmental Oversight Agreement
<b>Date Completed:</b>	7/15/2005
<b>Comments:</b>	
<b>Activity Type:</b>	Completed Activities
--	--

**Site:** **PROPOSED ELEMENTARY SCHOOL NO. 10-A**  
**NORTHEAST CORNER ELLIOTT ROAD AND PAT ROAD WINCHESTER CA 92596**

[ENVIROSTOR](#)

<b>Estor/EPA ID:</b>	60001559
<b>Site Code:</b>	404867
<b>Cleanup Status:</b>	NO FURTHER ACTION AS OF 1/19/2012
<b>Site Type:</b>	SCHOOL
<b>Potential Media Affected:</b>	NO MEDIA AFFECTED
<b>Past Uses Caused Contam:</b>	NONE, WAREHOUSING
<b>APN:</b>	480-030-025, 480-030-026
<b>National Priorities List:</b>	NO
<b>Cleab up Oversight Agenci:</b>	DTSC - SITE CLEANUP PROGRAM - LEAD
<b>Special Program:</b>	
<b>Funding:</b>	RESPONSIBLE PARTY
<b>Acres:</b>	17.42 ACRES
<b>School District:</b>	MENIFEE UNION SCHOOL DISTRICT
<b>Assembly District:</b>	67
<b>Senate District:</b>	28
<b>Zip:</b>	92596

### **POTENTIAL CONTAMI:**

LEAD



#### **SITE HISTORY:**

The Site is currently vacant undeveloped land. Dry land grain farming was conducted on the Site in the late 1970s, early 1980s. Two residential dwellings were located on the Site between about 1986 and 2006, as well as what appears to be a barn and horse stables. Since about 2006, the Site has been vacant.

#### **Facility Information**

-- --  
**Program Type:** SCHOOL EVALUATION  
**Status:** NO FURTHER ACTION  
**Summary Link:** [http://www.envirostor.dtsc.ca.gov/public/profile\\_report.asp?global\\_id=60001559](http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60001559)  
-- --  
**Completed Activities**  
-- --  
**Doc Link:** [http://www.envirostor.dtsc.ca.gov/public/final\\_documents2.asp?global\\_id=60001559&doc\\_id=60280911](http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60001559&doc_id=60280911)  
**Area Name:**  
**Sub Area:**  
**Document Type:** Phase 1  
**Date Completed:** 11/15/2011  
**Comments:** The Report was considered to be a Phase I Addendum due to the inclusion of sampling results for lead from lead-based paint and OCPs from termiticides. DTSC approved the Phase I Addendum with a No Further Action determination  
**Activity Type:** Completed Activities  
-- --

**Site:** **ALIVE POLARITY-FLEETMAINT SH**  
**29480 MURRIETA HOT SPRINGS RD WINCHESTER RD MURRIETA CA 92362**

HHSS

**County:**  
**Pdf File Url:** <http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001f88d.pdf>

**Site:** **LAWRENCE T LASAGNA**  
**30885 NICOLAS RD WINCHESTER RD MURRIETA CA 92362**

HHSS

**County:**  
**Pdf File Url:** <http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0001f7ab.pdf>

**Site:** **DOUBLE BUTTE LANDFILL (CLOSED)**  
**GRAND AVE; 600 FT W WINCHESTER WINCHESTER CA**

LDS

**Facility ID:** L10004864228  
**Site Facility Type:** LAND DISPOSAL SITE  
**Cleanup Status:** OPEN - CLOSED/WITH MONITORING  
**Cleanup Status Detail:** OPEN - CLOSED/WITH MONITORING AS OF 1/1/1965  
**Cleanup History Link:** [http://geotracker.waterboards.ca.gov/profile\\_report\\_include.asp?global\\_id=L10004864228&tabname=regulatoryhistory](http://geotracker.waterboards.ca.gov/profile_report_include.asp?global_id=L10004864228&tabname=regulatoryhistory)  
**Report Link:** [http://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=L10004864228](http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=L10004864228)  
**File Location:**  
**County:** RIVERSIDE  
**DWR Grndwtr Sub Basin:**  
**RB Watershed:** San Jacinto Valley - Perris - Winchester (802.13)  
**Future LU Reptd at Closure:**  
**Potential Contaminants:** NONE SPECIFIED  
**Beneficial Use:** NONE SPECIFIED  
**Post Closure Site Mgmt R:**

#### **SITE HISTORY:**

The Double Butte Sanitary Landfill is owned and was operated by the

Riverside County Waste Management Department. The site is located in Section 20, T5S, R2W, Riverside County, California. It was operated as a Class III non-hazardous municipal solid waste landfill from 1973 to 1995.

The landfill covers about 580 acres, of which 112 acres were filled with wastes. The landfill site lies in the San Jacinto Ground Water Basin near Winchester and west of Hemet, California. It is divided into four fill areas along the eastern margin of the main valley and one other small fill area in the southwest corner. The types of waste received consisted of 42 percent residential, 42 percent commercial, 11 percent demolition, and 5 percent special. The site underwent closure from November 1995 through May 1997.

The Riverside County Waste Management Dept. is currently conducting a Corrective Action Program for groundwater monitoring at the site.

#### **Cleanup History**

-- --  
**Date:**  
**Status:** NO STATUS HISTORY HAS BEEN ENTERED FOR THIS SITE  
--

#### **Regulatory Activities**

-- --  
**Action Type:** ENFORCEMENT/ORDERS  
**Action:** Staff Letter  
**Action Date:** 12/29/2006  
**Received Issue Date:** 12/29/2006  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6117145](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6117145)  
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**Action Type:** ENFORCEMENT/ORDERS  
**Action:** Clean-up and Abatement Order  
**Action Date:** 10/10/2002  
**Received Issue Date:** 10/10/2002  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6259547](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6259547)  
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**Action Type:** OTHER REGULATORY ACTIONS  
**Action:** Technical Correspondence / Assistance / Other  
**Action Date:** 12/19/2012  
**Received Issue Date:** 12/19/2012  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6145595](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6145595)  
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**Action Type:** ENFORCEMENT/ORDERS  
**Action:** Staff Letter  
**Action Date:** 2/16/2011  
**Received Issue Date:** 2/16/2011  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6128958](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6128958)  
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**Action Type:** ENFORCEMENT/ORDERS  
**Action:** Staff Letter  
**Action Date:** 2/8/2002  
**Received Issue Date:** 2/8/2002  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6119413](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6119413)  
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**Action Type:** ENFORCEMENT/ORDERS  
**Action:** Staff Letter  
**Action Date:** 6/7/2000  
**Received Issue Date:** 6/7/2000  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6118924](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6118924)  
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**Action Type:** ENFORCEMENT/ORDERS  
**Action:** Staff Letter  
**Action Date:** 2/11/1999  
**Received Issue Date:** 2/11/1999  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6116256](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6116256)  
 --

**Action Type:** RESPONSE REQUESTED - OTHER  
**Action:** Other Report / Document  
**Action Date:**  
**Received Issue Date:** 12/10/2010  
**Doc Link:**  
 --

**Action Type:** OTHER REGULATORY ACTIONS  
**Action:** Technical Correspondence / Assistance / Other  
**Action Date:** 3/7/2013  
**Received Issue Date:** 3/7/2013  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6158974](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6158974)  
 --

**Action Type:** RESPONSE REQUESTED - REPORTS  
**Action:** Monitoring Report - Annually  
**Action Date:** 12/31/2011  
**Received Issue Date:** 1/3/2012  
**Doc Link:**  
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**Action Type:** RESPONSE REQUESTED - REPORTS  
**Action:** Monitoring Report - Semi-Annually  
**Action Date:** 10/31/2010  
**Received Issue Date:** 10/31/2010  
**Doc Link:**  
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**Action Type:** ENFORCEMENT/ORDERS  
**Action:** Staff Letter  
**Action Date:** 7/29/2009  
**Received Issue Date:** 7/29/2009  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6116889](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6116889)  
 --

**Action Type:** RESPONSE REQUESTED - REPORTS  
**Action:** Monitoring Report - Semi-Annually  
**Action Date:** 4/30/2011  
**Received Issue Date:** 4/30/2011  
**Doc Link:**  
 --

**Action Type:** ENFORCEMENT/ORDERS  
**Action:** Waste Discharge Requirements  
**Action Date:** 12/7/1998  
**Received Issue Date:** 12/7/1998  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6030938](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6030938)  
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**Action Type:** ENFORCEMENT/ORDERS  
**Action:** Waste Discharge Requirements  
**Action Date:** 11/20/1998  
**Received Issue Date:** 11/20/1998  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6030937](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6030937)  
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**Action Type:** OTHER REGULATORY ACTIONS  
**Action:** Technical Correspondence / Assistance / Other  
**Action Date:** 10/16/2012  
**Received Issue Date:** 10/16/2012  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6030937](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6030937)

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<b>Action Type:</b>	ENFORCEMENT/ORDERS
<b>Action:</b>	Staff Letter
<b>Action Date:</b>	7/3/2012
<b>Received Issue Date:</b>	7/3/2012
<b>Doc Link:</b>	<a href="http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6128451">http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6128451</a>
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<b>Action Type:</b>	RESPONSE REQUESTED - REPORTS
<b>Action:</b>	Monitoring Report - Semi-Annually
<b>Action Date:</b>	10/31/2011
<b>Received Issue Date:</b>	10/31/2011
<b>Doc Link:</b>	
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<b>Action Type:</b>	ENFORCEMENT/ORDERS
<b>Action:</b>	13267 Requirement
<b>Action Date:</b>	10/1/2002
<b>Received Issue Date:</b>	10/1/2002
<b>Doc Link:</b>	<a href="http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6259548">http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6259548</a>
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<b>Action Type:</b>	ENFORCEMENT/ORDERS
<b>Action:</b>	Staff Letter
<b>Action Date:</b>	3/16/2000
<b>Received Issue Date:</b>	3/16/2000
<b>Doc Link:</b>	<a href="http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6118899">http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6118899</a>
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<b>Action Type:</b>	ENFORCEMENT/ORDERS
<b>Action:</b>	Staff Letter
<b>Action Date:</b>	6/7/1999
<b>Received Issue Date:</b>	6/7/1999
<b>Doc Link:</b>	<a href="http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6116708">http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6116708</a>
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<b>Action Type:</b>	ENFORCEMENT/ORDERS
<b>Action:</b>	Staff Letter
<b>Action Date:</b>	8/30/2004
<b>Received Issue Date:</b>	8/30/2004
<b>Doc Link:</b>	<a href="http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6117561">http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6117561</a>
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<b>Action Type:</b>	ENFORCEMENT/ORDERS
<b>Action:</b>	Waste Discharge Requirements
<b>Action Date:</b>	4/22/1994
<b>Received Issue Date:</b>	4/22/1994
<b>Doc Link:</b>	<a href="http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6030933">http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6030933</a>
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<b>Action Type:</b>	RESPONSE REQUESTED - REPORTS
<b>Action:</b>	Monitoring Report - Annually
<b>Action Date:</b>	4/30/2011
<b>Received Issue Date:</b>	4/30/2011
<b>Doc Link:</b>	
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<b>Action Type:</b>	ENFORCEMENT/ORDERS
<b>Action:</b>	Staff Letter
<b>Action Date:</b>	10/11/2000
<b>Received Issue Date:</b>	10/11/2000
<b>Doc Link:</b>	<a href="http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6118968">http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&amp;enforcement_id=6118968</a>
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<b>Action Type:</b>	ENFORCEMENT/ORDERS

**Action:** Waste Discharge Requirements  
**Action Date:** 11/20/1998  
**Received Issue Date:** 11/20/1998  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6030935](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6030935)  
 --  
**Action Type:** RESPONSE REQUESTED - REPORTS  
**Action:** Site Assessment Report  
**Action Date:** 1/19/1988  
**Received Issue Date:** 1/19/1988  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents\\_all.asp?global\\_id=L10004864228&doc\\_id=5725994](http://geotracker.waterboards.ca.gov/view_documents_all.asp?global_id=L10004864228&doc_id=5725994)  
 --  
**Action Type:** ENFORCEMENT/ORDERS  
**Action:** Staff Letter  
**Action Date:** 9/19/2003  
**Received Issue Date:** 9/19/2003  
**Doc Link:** [http://geotracker.waterboards.ca.gov/view\\_documents.asp?global\\_id=L10004864228&enforcement\\_id=6118511](http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=L10004864228&enforcement_id=6118511)  
 --

**Site:** NORTH ORANGE COAST PAINTING  
 WINCHESTER RD 1 MILE E OF HWY HUNTER POINT HOUSING COMPLEX FRENCH  
 VALLEY CA 92563

RCRA SQG

**EPA Handler ID:** CAR000120980  
**Current Site Name:** NORTH ORANGE COAST PAINTING  
**Generator Status Universe:** Small Quantity Generator  
**Land Type:** Private  
**Activity Location:** CA  
**TSD Activity:** N  
**Mixed Waste Generator:** N  
**Importer Activity:** N  
**Transporter Activity:** N  
**Transfer Facility:** N  
**Recycler Activity:** N  
**Onsite Burner Exemption:** N  
**Furnace Exemption:** N  
**Underground Inject Activity:** N  
**Rece Waste From Off Site:** N  
**Used Oil Transporter:**  
**Used Oil Transfer Facility:**  
**Used Oil Processor:**  
**Used Oil Refiner:**  
**Used Oil Burner:**  
**Used Oil Market Burner:**  
**Used Oil Spec Marketer:**  
**Mailing Address:** P O BOX 520, , NORCO, CA, 91720,  
**Contact Name:** JOHN FOTION  
**Contact Address:** P O BOX 520, , NORCO, CA, 928600520, US  
**Contact Email:**  
**Location Street 2:** HUNTER POINT HOUSING COMPLEX  
 --

#### Owner/Operator Information

**Owner/Operator Indicator:** CO  
**Owner/Operator Name:** NORTH ORANGE COAST PAINTING  
**Owner/Operator Address:** P O BOX 520 NORCO CA 928600520  
**Owner/Operator Phone:** 9092792694  
**Owner/Operator Type:** P  
**Date Became Current:**  
**Date Ended Current:**

--	--
<b>NAICS Information</b>	
--	--
<b>Handler Information</b>	
--	--
<b>Date Received:</b>	20020516
<b>Facility Name:</b>	NORTH ORANGE COAST PAINTING
<b>Classification:</b>	Small Quantity Generator
--	--
<b>Hazardous Waste Information</b>	
--	--
<b>Waste Code:</b>	D001
<b>Waste:</b>	IGNITABLE WASTE
--	--
<b>Violation/Evaluation Information</b>	
--	--

**Site:** **Sprint Cell Site RV54XC505**  
**36625 Pourroy Rd Winchester CA 92596**

RIVERSIDE HZH

**Site:** **T-Mobile West Corp(IE25829A)**  
**36627 Pourroy Rd Murrieta CA 92563**

RIVERSIDE HZH

**Site:** **EMWD Pourroy Lift Station**  
**Pourroy Rd Murrieta CA 92563**

RIVERSIDE HZH

**Site:** **PROPOSED ELEMENTARY SCHOOL NO. 10-A**  
**NORTHEAST CORNER ELLIOTT ROAD AND PAT ROAD WINCHESTER CA 92596**

SCH

<b>ESTOR/EPA ID:</b>	60001559
<b>Site Code:</b>	404867
<b>Status:</b>	NO FURTHER ACTION
<b>Cleanup Status:</b>	NO FURTHER ACTION AS OF 1/19/2012
<b>Program Type:</b>	SCHOOL EVALUATION
<b>Site Type:</b>	SCHOOL
<b>National Priorities List:</b>	NO
<b>CI Up Oversight Agencies:</b>	DTSC - SITE CLEANUP PROGRAM - LEAD
<b>Special Program:</b>	
<b>County:</b>	RIVERSIDE
<b>Funding:</b>	RESPONSIBLE PARTY
<b>APN:</b>	480-030-025, 480-030-026
<b>Past Use Caused Contam:</b>	NONE, WAREHOUSING
<b>Potential Contam of Cncrn:</b>	LEAD
<b>Potential Media Affected:</b>	NO MEDIA AFFECTED
<b>Acres:</b>	17.42 ACRES
<b>School District:</b>	MENIFEE UNION SCHOOL DISTRICT
<b>Summary Link:</b>	<a href="http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60001559">http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60001559</a>
<b>Assembly District:</b>	67
<b>Senate District:</b>	28
<b>Latitude:</b>	33.6207
<b>Longitude:</b>	-117.1089

**SITE HISTORY:**

The Site is currently vacant undeveloped land. Dry land grain farming was conducted on the Site in the late 1970s, early 1980s. Two



residential dwellings were located on the Site between about 1986 and 2006, as well as what appears to be a barn and horse stables. Since about 2006, the Site has been vacant.

#### **Completed Activities**

-- --  
**Date Completed:** 11/15/2011  
**Doc Link:** [http://www.envirostor.dtsc.ca.gov/public/final\\_documents2.asp?global\\_id=60001559&doc\\_id=60280911](http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60001559&doc_id=60280911)  
**Area Name:**  
**Sub Area:**  
**Document Type:** Phase 1  
**Comments:** The Report was considered to be a Phase I Addendum due to the inclusion of sampling results for lead from lead-based paint and OCPs from termiticides. DTSC approved the Phase I Addendum with a No Further Action determination  
-- --

**Site:** **ELEMENTARY SCHOOL NO. 10**  
**BEELER ROAD/PATTON AVENUE WINCHESTER CA 92596**

SCH

**ESTOR/EPA ID:** 60000105  
**Site Code:** 404639  
**Status:** NO FURTHER ACTION  
**Cleanup Status:** NO FURTHER ACTION AS OF 6/1/2006  
**Program Type:** SCHOOL EVALUATION  
**Site Type:** SCHOOL  
**National Priorities List:** NO  
**CI Up Oversight Agencies:** DTSC - SITE CLEANUP PROGRAM - LEAD  
**Special Program:** VOLUNTARY CLEANUP PROGRAM  
**County:** RIVERSIDE  
**Funding:** SCHOOL DISTRICT  
**APN:** 461-18-0036  
**Past Use Caused Contam:** AGRICULTURAL - ROW CROPS  
**Potential Contam of Cncrn:** METALS: Arsenic, Lead, Total Chromium (1:6 ratio Cr VI:Cr III)  
ORGANOCHLORINE PESTICIDES (8081 OCPS): Chlordane, DDD, DDE, DDT, Dieldrin, Endrin  
**Potential Media Affected:** NO MEDIA AFFECTED  
**Acres:** 12 ACRES  
**School District:** HEMET UNIFIED SCHOOL DISTRICT  
**Summary Link:** [http://www.envirostor.dtsc.ca.gov/public/profile\\_report.asp?global\\_id=60000105](http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000105)  
**Assembly District:** 67  
**Senate District:** 28  
**Latitude:** 33.6943  
**Longitude:** -117.1044

#### **SITE HISTORY:**

The approximately 12-acre Site is surrounded by vacant land, slated for residential housing. The Site has been historically utilized for agricultural activities, indicating potential chemicals of concern.

#### **Completed Activities**

-- --  
**Date Completed:** 1/18/2006  
**Doc Link:** [http://www.envirostor.dtsc.ca.gov/public/final\\_documents2.asp?global\\_id=60000105&doc\\_id=6008879](http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60000105&doc_id=6008879)  
**Area Name:**  
**Sub Area:**  
**Document Type:** Preliminary Endangerment Assessment Report  
**Comments:** NFA  
-- --  
**Date Completed:** 10/19/2005  
**Doc Link:**  
**Area Name:**  
**Sub Area:**  
**Document Type:** Preliminary Endangerment Assessment Workplan  
**Comments:** Tech Memo Approved

--  
**Date Completed:** 7/15/2005  
**Doc Link:** [http://www.envirostor.dtsc.ca.gov/public/final\\_documents2.asp?global\\_id=60000105&enforcement\\_id=6007449](http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=60000105&enforcement_id=6007449)  
**Area Name:**  
**Sub Area:**  
**Document Type:** Environmental Oversight Agreement  
**Comments:**  
--

**Site:** **RIVERSIDE COUNTY-DOUBLE BUTTE LANDFILL**  
**GRAND AVE 600 FT. W. WINCHESTER RD. WINCHESTER, CA 92396 CA**

SWAT

**Rank:** 1  
**SWIS Number:** 33-AA-0008  
**Report Status Code:** R  
**Report Status:** RETURNED FOR REVISION  
**Transcribe Source:** Solid Waste Assessment Test (SWAT) Program Report to the Legislature 1989-1990  
**Site Classification Code:**  
**Site Classification:**  
**Activity Status Code:**  
**Activity Description:**  
**Character of Site Code:**  
**Character of Site:**  
**Size of Site Code:**  
**Size of Site:**  
**Proposal Status:**  
**Site Leak:**  
**Site Leak Desc:**  
**Type of Leak:**  
**Enforce Action:**  
**Enforce Action Desc:**  
**Waste Management Unit:**  
**Waste Discharger Sys NO:** 8 330305012  
**Initial Notif Date:**  
**Proposal Due Date:**  
**Report Due Date:** 07/01/87  
**Anticipated Rprt Submit Dt:** 01/19/88  
**Report Received Date:** 01/27/88  
**Report Target Review Date:** 02/01/91  
**Report Resubmitted Due Date:** 01/01/91  
**Report Resubmitted Rcvd Dt:** 08/19/88  
**Report Approval Date:**  
**Anticip Proposal Submit Dt:**  
**Proposal Received Date:**  
**Proposal Target Review Date:**  
**Proposal Status Code:**  
**Proposal Resubmitted Due Dt:**  
**Proposal Resubmitted**  
**Received Due Date:**  
**Proposal Accepted Date:**  
**Exemption Questionnaire**  
**Approved Date:**  
**Waiver Approved Date:**  
**Type of Leak Code:**  
**DHS & CWMB Notif Date:**  
**Report Summ Sent Date:**  
**Monitor Program Revise Date:**  
**Revise WDR Target Date:**  
**Hazardous Waste Surface:**  
**Above Reg Level Surface:**  
**Below Reg Level Surface:**  
**Hazardous Waste Ground:**

**Above Reg Level Ground:**  
**Below Reg Level Ground:**  
**Hazardous Waste Vadose:**  
**Above Reg Level Vadose:**  
**Below Reg Level Vadose:**  
**Surface:**  
**Ground:**  
**Vadose:**  
**Operator Name:** REIVERSIDE COUNTY  
**Agency Name:**  
**County Number:**  
**County Name:** RIVERSIDE  
**Regional Board Contact:**  
**Region:** SANTA ANA REGION 8  
**Remarks:** Requested follow up quarterly ground water monitoring necessary to complete the SWAT was received by March 1990. County has been requested to conduct Subchapter 15 water level/water quality monitoring, and advised that failure to do so will result in enforcement action. Target date for final report review is Feb.1, 1991. Time schedule for completion of work on remaining SWAT deficiencies has been requested by September 21, 1990. ACL is likely.

**Site:** **Double Butte Disposal Site**  
**Grand Ave; 600 Ft W Winchester Winchester CA**

SWF/LF

<b>SWIS NO:</b>	33-AA-0008	<b>Operator Phone:</b>	9514863200
<b>Permit Status:</b>	Permitted	<b>Operator Addr 1:</b>	
<b>Permit Date:</b>	12/1/1992	<b>Operator Addr 2:</b>	14310 Frederick Street
<b>Landuse Name:</b>		<b>Operator City:</b>	Moreno Valley
<b>County:</b>	Riverside	<b>Operator State:</b>	CA
<b>Latitude:</b>	33.71862	<b>Operator Zip:</b>	92553
<b>Longitude:</b>	-117.10652	<b>Operator:</b>	County Of Riverside Waste Mgmt Dept
<b>GIS Source:</b>	Map		

**Owner**

--  
**Owner:** County Of Riverside Waste Mgmt Dept  
**Phone:** 9514863200  
**Address1:**  
**Address2:** 14310 Frederick Street  
**City:** Moreno Valley  
**State:** CA  
**Zip:** 92553

**Unit**

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**Category:** Disposal  
**Unit No.:** 01  
**Activity:** Solid Waste Disposal Site  
**Regulatory Status:** Permitted  
**Operational Status:** Closed  
**Inspection Frequency:** Quarterly  
**Accepted Waste:** Contaminated soil,Mixed municipal  
**Program Type:** Financial Assurance Responsibilities  
**Closure Date:** 9/17/1994  
**Closure Type:** Actual  
**Thorough Put:** 500  
**Thorough Put Units:** Tons/day  
**Capacity:**  
**Acreage:** \$580.00  
**Disposal Acreage:** \$93.00  
**Remaining Capacity:** 312000  
**WDRNO:** II

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## Appendix: Database Descriptions

*Ecolog Environmental Risk Information Services Ltd (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:*

*"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."*

### **Standard Environmental Record Sources**

#### **Federal**

##### **National Priority List:**

[NPL](#)

National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.

**Government Publication Date: Feb 11, 2016**

##### **National Priority List - Proposed:**

[PROPOSED NPL](#)

Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

**Government Publication Date: Feb 11, 2016**

##### **Deleted NPL:**

[DELETED NPL](#)

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.

**Government Publication Date: Feb 11, 2016**

##### **SEMS List 8R Active Site Inventory:**

[SEMS](#)

The Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted.

**Government Publication Date: Mar 07, 2016**

##### **SEMS List 8R Archive Sites:**

[SEMS ARCHIVE](#)

The Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

**Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS:**

[CERCLIS](#)

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

**CERCLIS - No Further Remedial Action Planned:**

[CERCLIS NFRAP](#)

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means 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 this site on the National Priorities List (NPL). This 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 a potential NPL site.

Government Publication Date: Oct 25, 2013

**CERCLIS Liens:**

[CERCLIS LIENS](#)

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: Jan 30, 2014

**RCRA CORRACTS-Corrective Action:**

[RCRA CORRACTS](#)

RCRA Info 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. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Mar 14, 2016

**RCRA non-CORRACTS TSD Facilities:**

[RCRA TSD](#)

RCRA Info 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. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Government Publication Date: Mar 14, 2016

**RCRA Generator List:**

[RCRA LQG](#)

RCRA Info 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. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

Government Publication Date: Mar 14, 2016

**RCRA Small Quantity Generators List:**[RCRA SQG](#)

RCRA Info is the 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. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

*Government Publication Date: Mar 14, 2016*

**RCRA Conditionally Exempt Small Quantity Generators List:**[RCRA CESQG](#)

RCRA Info is the 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. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Conditionally Exempt Small Quantity Generators (CESQG) generate 100 kilograms or less per month of hazardous waste or one kilogram or less per month of acutely hazardous waste.

*Government Publication Date: Mar 14, 2016*

**RCRA Non-Generators:**[RCRA NON GEN](#)

RCRA Info 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. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

*Government Publication Date: Mar 14, 2016*

**Federal Engineering Controls-ECs:**[FED ENG](#)

Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).

*Government Publication Date: Jul 30, 2014*

**Federal Institutional Controls- ICs:**[FED INST](#)

Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.

*Government Publication Date: Jul 30, 2014*

**Emergency Response Notification System:**[ERNS 1982 TO 1986](#)

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

*Government Publication Date: 1982-1986*

**Emergency Response Notification System:**[ERNS 1987 TO 1989](#)

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

*Government Publication Date: 1987-1989*



**Emergency Response Notification System:**

ERNS

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories. This database is made available by the United States Environmental Protection Agency (EPA).

*Government Publication Date: Oct 7, 2015*

**The Assessment, Cleanup and Redevelopment Exchange System (ACRES)**

FED BROWNFIELDS

**Brownfield Database:**

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 protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).

*Government Publication Date: Apr 05, 2016*

**Material Licensing Tracking System (MLTS):**

MLTS

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC.

*Government Publication Date: Oct 7, 2014*

**State****State Response Sites:**

RESPONSE

A list of identified confirmed release sites where the Department of Toxic Substances Control (DTSC) is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk. This database is state equivalent NPL.

*Government Publication Date: Feb 03, 2016*

**EnviroStor Database:**

ENVIROSTOR

The EnviroStor Data Management System is made available by the Department of Toxic Substances Control (DTSC). Includes Corrective Action sites, Tiered Permit sites, Historical Sites and Evaluation/Investigation sites. This database is state equivalent CERCLIS.

*Government Publication Date: Dec 31, 2015*

**Solid Waste Information System (SWIS):**

SWF/LF

The Solid Waste Information System (SWIS) database made available by the Department of Resources Recycling and Recovery (CalRecycle) contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites.

*Government Publication Date: Apr 28, 2016*

**EnviroStor Hazardous Waste Facilities:**

HWP

A list of hazardous waste facilities including permitted, post-closure and historical facilities found in the Department of Toxic Substances Control (DTSC) EnviroStor database.

*Government Publication Date: Apr 21, 2016*

**Land Disposal Sites:**

LDS

Land Disposal Sites in GeoTracker, the State Water Resources Control Board (SWRCB)'s data management system. The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units. Waste management units include waste piles, surface impoundments, and landfills.

*Government Publication Date: Apr 25, 2016*

**Leaking Underground Fuel Tank Reports:**

LUST

List of Leaking Underground Storage Tanks within the Cleanup Sites data in GeoTracker database. GeoTracker is the State Water Resources Control Board's (SWRCB) data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense and Site Cleanup Program) as well as permitted facilities such as operating Underground Storage Tanks. The Leak Prevention Program that overlooks LUST sites is the SWRCB in California's Environmental Protection Agency.

*Government Publication Date: Mar 21, 2016*

**Delisted Leaking Storage Tanks:**

DLST

This database contains a list of leaking storage tank sites that were removed from the GeoTracker is the State Water Resources Control Board's (SWRCB) data management system.

*Government Publication Date: Aug 31, 2015*

**Permitted Underground Storage Tank (UST) in GeoTracker:**

UST

List of Permitted Underground Storage Tank (UST) sites made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency (EPA).

*Government Publication Date: Mar 28, 2016*

**Aboveground Storage Tanks:**

AST

A statewide list from 2009 of aboveground storage tanks (ASTs) made available by the Cal FIRE Office of the State Fire Marshal (OSFM). This list is no longer maintained or updated by the Cal FIRE OSFM.

*Government Publication Date: Aug 31, 2009*

**Delisted Storage Tanks:**

DELISTED TNK

This database contains a list of storage tank sites that were removed by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency (EPA) and the Cal FIRE Office of State Fire Marshal (OSFM).

*Government Publication Date: Mar 28, 2016*

**Proposed Closure of Underground Storage Tank Cases:**

UST CLOSURE

List of UST cases that are being considered for closure by either the California Environmental Protection Agency, State Water Resources Control Board or the Executive Director that have been posted for a 60-day public comment period.

*Government Publication Date: Feb 26, 2016*

**Historical Hazardous Substance Storage Information Database:**

HHSS

The Historical Hazardous Substance Storage database contains information collected in the 1980s from facilities that stored hazardous substances. The information was originally collected on paper forms, was later transferred to microfiche, and recently indexed as a searchable database. When using this database, please be aware that it is based upon self-reported information submitted by facilities which has not been independently verified. It is unlikely that every facility responded to the survey and the database should not be expected to be a complete inventory of all facilities that were operating at that time. This database is maintained by the California State Water Resources Control Board's (SWRCB) Geotracker.

*Government Publication Date: Aug 27, 2015*

**Site Mitigation and Brownfields Reuse Program Facility Sites with Land Use Restrictions:**

LUR

The Department of Toxic Substances Control (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 land use restrictions that are active. Some sites have multiple land use restrictions.

*Government Publication Date: Mar 4, 2016*

## **Hazardous Waste Management Program Facility Sites with Deed / Land Use**

HLUR

### **Restrictions:**

The Department of Toxic Substances Control (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.

**Government Publication Date: Mar 29, 2016**

### **Deed Restrictions and Land Use Restrictions:**

DEED

List of Deed Restrictions, Land Use Restrictions and Covenants in GeoTracker made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency. A deed restriction (land use covenant) may be required to facilitate the remediation of past environmental contamination and to protect human health and the environment by reducing the risk of exposure to residual hazardous materials.

**Government Publication Date: Mar 29, 2016**

### **Voluntary Cleanup Program:**

VCP

List of sites in the Voluntary Cleanup Program made available by the Department of Toxic Substances and Control (DTSC). The Voluntary Cleanup Program was designed to respond to lower priority sites. Under the Voluntary Cleanup Program, DTSC enters site-specific agreements with project proponents for DTSC oversight of site assessment, investigation, and/or removal or remediation activities, and the project proponents agree to pay DTSC's reasonable costs for those services.

**Government Publication Date: Apr 7, 2016**

### **GeoTracker Cleanup Sites Data:**

CLEANUP SITES

A list of cleanup sites in the state of California made available by The State Water Resources Control Board (SWRCB) of the California Environmental Protection Agency (EPA). SWRCB tracks leaking underground storage tank cleanups as well as other water board cleanups.

**Government Publication Date: Mar 21, 2016**

### **Well Investigation Program Case List:**

WIP

The Well Investigation Program (WIP) was developed by the State Water Resources Control Board (SWRCB) to locate, assess and remediate sources of solvent contamination impacting drinking water wells. This list contains WIP cases (active and historical) for the San Gabriel and San Fernando Valley area and was provided by the Los Angeles Regional Water Quality Control Board.

**Government Publication Date: Nov 13, 2015**

## **Tribal**

### **Leaking Underground Storage Tanks (LUSTs) on Indian Lands:**

INDIAN LUST

LUSTs on Tribal/Indian Lands in Region 9, which includes California.

**Government Publication Date: Aug 28, 2014**

### **Underground Storage Tanks (USTs) on Indian Lands:**

INDIAN UST

USTs on Tribal/Indian Lands in Region 9, which includes California.

**Government Publication Date: Aug 28, 2014**

### **Delisted Tribal Leaking Storage Tanks:**

DELISTED ILST

Underground Storage Tank facilities which have been removed from the Regional Tribal UST lists made available by the EPA.

**Government Publication Date: Jan 31, 2016**

**Delisted Tribal Underground Storage Tanks:****DELISTED IUST**

Underground Storage Tank facilities which have been removed from the Regional Tribal UST lists made available by the EPA.

*Government Publication Date: Jan 31, 2016*

**County****Alameda County LOP Sites List:****ALAMEDA LOP**

A list of Leaking Underground Storage Tanks (LUST) facilities in Alameda County. This list is made available by Alameda County Department of Environmental Health (ACEH). ACEH implements a Local Oversight Program (LOP) under contract with the State Water Resources Control Board to provide regulatory oversight of the investigation and cleanup of soil and groundwater contamination from leaking petroleum USTs.

*Government Publication Date: Apr 6, 2016*

**Alameda County UST List:****ALAMEDA UST**

A list of all registered Underground Storage Tanks (USTs) in the County of Alameda. The list is made available by Alameda County Department of Environmental Health.

*Government Publication Date: Apr 6, 2016*

**Amador County CUPA List:****AMADOR CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Amador County. This list is made available by Amador County Environmental Health Department which is the CUPA for Amador County and administers a consolidated hazardous materials program.

*Government Publication Date: Mar 21, 2016*

**Butte County CUPA List:****BUTTE CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Butte County. This list is made available by Butte County Public Health Department, Environmental Health Division which was certified by the California Environmental Protection Agency as the CUPA for Butte County.

*Government Publication Date: Mar 22, 2016*

**Calaveras County CUPA Facilities List:****CALAVERAS CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Calaveras. This list is made available by Calaveras County Environmental Health Department which has been certified by CalEPA to implement the Unified program as a CUPA.

*Government Publication Date: Mar 15, 2016*

**Calaveras County Landfills List:****CALAVERAS LF**

A list of landfills in Calaveras County. This list is made available by Calaveras County Environmental Health Department which has been designated as the CUPA for the County.

*Government Publication Date: Mar 15, 2016*

**Calaveras County UST Remediation Sites:****CALAVERAS LUST**

A list of Leaking Underground Storage Tank (LUST) facilities in Calaveras County. This list is made available by Calaveras County Environmental Health Department. Local Implementing Agency (LIA) provides oversight of site remediation with soil contamination while CalEPA - California Regional Water Quality Control Board - Central Valley Region oversees remediation of sites with groundwater contamination.

*Government Publication Date: Mar 15, 2016*

**Colusa County CUPA List:****COLUSA CUPA**

A list of facilities associated with Business Plan and Hazardous Generator programs in the County of Colusa. This list is made available by Colusa County Environmental Health which was certified by the California Environmental Protection Agency as Certified Unified Program Agency for Colusa County.

**Contra Costa County CUPA List:**

[CONTRACO CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Contra Costa. This list is made available by Contra Costa County which has been certified by CalEPA to implement the Unified program as a CUPA.

Government Publication Date: Apr 27, 2016

**Del Norte County CUPA Facility List:**

[DELNORTE CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Del Norte County. This list is made available by Del Norte County Environmental Health Division which is the designated CUPA for the county.

Government Publication Date: Jan 22, 2016

**El Dorado County CUPA Facility List:**

[ELDORADO CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in El Dorado County. This list is made available by El Dorado County Department of Environmental Management - Hazardous Waste Division which is approved by CalEPA as CUPA for El Dorado County.

Government Publication Date: Dec 28, 2015

**Fresno County CUPA/Solid Waste Programs Resource List:**

[FRESNO CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Fresno County. This list is made available by Fresno County Department of Environmental Health Division which is approved by Cal-EPA as CUPA for the County.

Government Publication Date: Jan 05, 2016

**Humboldt County CUPA Facility List:**

[HUMBOLDT CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Humboldt County. This list is made available by Humboldt County Division of Environmental Health which is approved by the State Secretary for Environmental Protection as CUPA for the County.

Government Publication Date: Feb 9, 2016

**Imperial County CUPA Facility List:**

[IMPERIAL CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Imperial County. This list is made available by the California Department of Toxic Substances Control (DTSC) which is appointed as CUPA for Imperial County.

Government Publication Date: Apr 28, 2016

**Inyo County CUPA Facility List:**

[INYO CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Inyo. This list is made available by the Inyo County Environmental Health Services Department which has been certified by CalEPA to implement the Unified program as a CUPA.

Government Publication Date: Jul 16, 2014

**Kern County CUPA List:**

[KERN CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Kern. This list is made available by Kern County Environmental Health Services Department which has been certified by CalEPA to implement the Unified program as a CUPA for Kern County.

Government Publication Date: May 19, 2015

**Kern County UST List:**

[KERN UST](#)

A list of all registered and inactive Underground Storage Tanks in the County of Kern. The list is made available by Kern County Environmental Health Division.

Government Publication Date: May 19, 2015



**Kings County CUPA Facility List:****KINGS CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Kings County. This list is made available by Kings County Department of Public Health which is appointed as CUPA for the county.

*Government Publication Date: Jan 31, 2016*

**Lake County CUPA Facility List:****LAKE CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Lake County. This list is made available by Lake County Division of Environmental Health which is CUPA for the entire county.

*Government Publication Date: Apr 28, 2016*

**Los Angeles County - El Segundo City Underground Storage Tanks List:****ELSEGUNDO UST**

A list of all registered Underground Storage Tanks (USTs) in the City of El Segundo of Los Angeles County. The list is made available by El Segundo City Fire Department.

*Government Publication Date: Mar 11, 2016*

**Los Angeles County - Torrance City Underground Storage Tanks:****TORRANCE UST**

A list of registered Underground Storage Tank (UST) sites in Torrance City of Los Angeles County. This list is made available by Torrance City Office of Clerk.

*Government Publication Date: Mar 29, 2016*

**Los Angeles County HMS List:****LA HMS**

This list contains sites that have or had permits for Industrial Waste, Underground Storage Tanks, or Storm water in the County of Los Angeles. This list is made available by the County of Los Angeles Department of Public Works.

*Government Publication Date: Feb 9, 2016*

**Los Angeles County Long Beach UST List:****LA LONGB UST**

A list of all registered active Underground Storage Tanks in the City of Long Beach of Los Angeles County. The list is made available by Long Beach Certified Unified Program Agency.

*Government Publication Date: Jan 6, 2016*

**Los Angeles County Solid Waste Sites:****LA SWF**

List of permitted solid waste facilities, closed landfills, historical dumpsites and other solid waste sites in Los Angeles County, made available by the Department of Public Works in Los Angeles County.

*Government Publication Date: Apr 20, 2016*

**Madera County CUPA Facility List:****MADERA CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Madera County. This list is made available by Madera County Environmental Health Department which is CUPA for the entire county.

*Government Publication Date: Sep 16, 2015*

**Marin County CUPA List:****MARIN CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Marin. This list is made available by Marin County which has been certified by CalEPA to implement the Unified program as a CUPA.

*Government Publication Date: Jan 19, 2016*

**Merced County CUPA Facilities List:****MERCED CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Merced. This list is made available by Merced County which has been certified by CalEPA to implement the Unified program as a CUPA for the entire county.

*Government Publication Date: Jan 15, 2016*

**Mono County CUPA Facility List:****MONO CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Mono County. This list is made available by Mono County Environmental Health Department which has been certified by CalEPA to implement the Unified program as a CUPA for the entire county.

*Government Publication Date: Apr 7, 2016*



**Monterey County CUPA Facility List:****MONTEREY CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Monterey County. This list is made available by Monterey County Hazardous Materials Management Services which is designated as the CUPA in Monterey County.

**Government Publication Date: Feb 25m 2016**

**Napa County UST List:****NAPA UST**

A list of all registered active Underground Storage Tanks (USTs) in the County of Napa. This list is made available by Napa County Environmental Health Division.

**Government Publication Date: Mar 09, 2016**

**Nevada County CUPA Facility List:****NEVADA CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Nevada County. This list is made available by Nevada County Department of Environmental Health which is the CUPA for all cities and unincorporated areas within Nevada County.

**Government Publication Date: Apr 18, 2016**

**Orange County Aboveground Petroleum Storage Tank Listing:****ORANGE AST**

A list of Aboveground Petroleum Storage Tank (APST) facilities inspected by Orange County Certified Unified Program Agency (CUPA) Under the Aboveground Petroleum Storage Act (APSA). This list is made available by the Environmental Health Division of Orange County Health Care Agency.

**Government Publication Date: Apr 01, 2016**

**Orange County Underground Storage Tanks Listing:****ORANGE UST**

A list of registered Underground Storage Tank (UST) sites in Orange County. This list is made available by Orange County Health Care Agency (OCHCA), Environmental Health Division which oversees the underground storage tank inspection program in most of the cities of Orange County, with the exception of Anaheim, Fullerton, and Orange.

**Government Publication Date: Apr 01, 2016**

**Placer County CUPA Facilities List:****PLACER CUPA**

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Placer County. This list is made available by Placer County Environmental Health which is designated CUPA for all areas of the county except for the City of Roseville.

**Government Publication Date: Apr 19, 2016**

**Riverside County Local Oversight Program List:****RIVERSIDE LOP**

A list of Leaking Underground Storage Tank (LUST) facilities in Riverside County. This list is made available by Riverside County Department of Environmental Health. Environmental Cleanup Program provides oversight of assessments and cleanups at properties that have been, or may have been, contaminated with hazardous substances from LUSTs or releases associated with other commercial/industrial use.

**Government Publication Date: Feb 17, 2016**

**Riverside County Underground Storage Tanks List:****RIVERSIDE UST**

A list of registered Underground Storage Tank (UST) sites in Riverside County. This list is made available by Riverside County Department of Environmental Health. The Hazardous Materials Management Branch (HMMB) regulates and oversees the inspections of constructions, repairs, upgrades, system operation and removal of UST systems.

**Government Publication Date: Feb 17, 2016**

**Sacramento County Master Hazardous Materials Facility List:****SACRAMENTO HAZ**

A list of Hazardous Materials Facilities in Sacramento County. This list is made available by Sacramento County Environmental Management Department which has been designated as the Certified Unified Program Agency (CUPA) for the County.

**Government Publication Date: Nov 2, 2015**

**Sacramento Toxic Site Cleanup List:**[SACRAMENTO TOX](#)

Sacramento County Environmental Management Department (EMD)'s Toxic Site Cleanup List includes sites where unauthorized releases of potentially hazardous materials have occurred. The EMD's Site Assessment & Mitigation Program, also referred to as Toxic Site Cleanup Program, provides mandated regulatory oversight of the assessment and remediation of properties on which there has been a release of hazardous materials to soil and/or groundwater.

**Government Publication Date:** May 2, 2016

**San Bernardino County CUPA List:**[SANBERN CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Bernardino County. This list is made available by San Bernardino County Fire Department which is the CUPA for all areas of the County except the city of Victorville.

**Government Publication Date:** Apr 13, 2016

**San Diego County Hazardous Materials Management Division Database:**[SANDIEGO HAZ](#)

A list of facilities with Unified Program Facility Permit in San Diego County. This list has been made available by County of San Diego Environmental Health.

**Government Publication Date:** Apr 20, 2016

**San Diego County Site Assessment and Mitigation Investigation Sites:**[SANDIEGO SAM](#)

List of sites which have undergone a Site Assessment and Mitigation investigation. This list is made available by the County of San Diego Department of Environmental Health.

**Government Publication Date:** Apr 20, 2016

**San Diego County Solid Waste Facility List:**[SANDIEGO SWF](#)

A list of open and closed Solid Waste Facilities in the County of San Diego. The list is made available by San Diego County Department of Environmental Health.

**Government Publication Date:** Feb 10, 2016

**San Francisco County Aboveground Storage Tanks List:**[SANFRAN AST](#)

A list of Aboveground Storage Tanks (ASTs) facilities inspected by San Francisco Department of Public Health's (SFPDH) Hazardous Materials and Waste Program. Aboveground storage containers or tanks include oil-filled equipment (such as hydraulic systems/reservoirs and heat transfer systems) which have a petroleum storage capacity of 55 gallons or greater.

**Government Publication Date:** Mar 12, 2016

**San Francisco County CUPA Facilities List:**[SANFRAN CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Francisco County. This list is made available by San Francisco County Hazardous Materials and Waste Program which is the CUPA for all areas of the County.

**Government Publication Date:** Mar 12, 2016

**San Francisco County LOP Sites:**[SANFRAN LOP](#)

A list of Underground Storage Tank (UST) release sites in the County of San Francisco. This list is made available by San Francisco County Department of Public Health Environmental Health Protection Branch.

**Government Publication Date:** Oct 6, 2015

**San Francisco County UST List:**[SANFRAN UST](#)

A list of all registered Underground Storage Tanks (USTs) in the County of San Francisco. This list is made available by San Francisco County Environmental Health Division. The Hazardous Materials and Waste Program provides regulatory oversight for the construction, operation, repair and removal of USTs in San Francisco.

**Government Publication Date:** Mar 12, 2016

**San Joaquin County Aboveground Tank List:**[SANJOAQUIN AST](#)

A list of Aboveground Storage Tanks (ASTs) inspected by San Joaquin County Environmental Health Department (SJCEHD) under Aboveground Petroleum Storage Act (APSA).

**Government Publication Date:** Jan 29, 2016

**San Joaquin County UST List:**[SANJOAQUIN UST](#)

A list of all registered Underground Storage Tanks in the County of San Joaquin. The list is made available by San Joaquin County Environmental Health Division.

*Government Publication Date: Jan 29, 2016*

**San Joaquin Hazardous Waste Facilities:**[SANJOAQUIN HW](#)

A list of Hazardous Waste Facilities in San Joaquin County. This list is made available by San Joaquin County Environmental Health Department which has been designated as the CUPA for the County.

*Government Publication Date: Jan 29, 2016*

**San Mateo County CUPA Facilities List:**[SANMATEO CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Mateo County. This list is made available by San Mateo County Environmental Health Department which has been designated as the CUPA for the County.

*Government Publication Date: May 2, 2016*

**San Mateo County LOP List:**[SANMATEO LOP](#)

A list of Leaking Underground Storage Tank (LUST) facilities in San Mateo County. This list is made available by San Mateo County Environmental Health Services Division.

*Government Publication Date: Jan 27, 2016*

**Santa Clara County CUPA Facilities List:**[SANTA CLARA CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Santa Clara County. This list is made available by Santa Clara County Department of Environmental Health (DEH). DEH's Hazardous Materials Compliance Division (HMCD) is CUPA for the county with jurisdiction within the Cities of Los Altos Hills, Monte Sereno, and Saratoga; and in all unincorporated areas of Santa Clara County, including Moffett Field, San Martin, and Stanford.

*Government Publication Date: Mar 3, 2016*

**Santa Clara Local Oversight Program Listing:**[SANTA CLARA LO](#)

A list of Leaking Underground Storage Tanks (LUST) facilities in Santa Clara County Provided by Santa Clara Department of Environmental Health (DEH). Since July 1, 2004 the DEH has served as the oversight agency for investigations and clean-up of petroleum releases from underground storage tanks through implementation of the Local Oversight Program (LOP) contract with the State Water Resources Control Board.

*Government Publication Date: Apr 20, 2016*

**Santa Cruz County CUPA Facility List:**[SANTACRUZ CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Santa Cruz County. This list is made available by Santa Cruz County Environmental Health Services (EHS) Division which has been designated as the CUPA for the County.

*Government Publication Date: Apr 20, 2016*

**Shasta County CUPA Facility List:**[SHASTA CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Shasta County. This list is made available by Shasta County Environmental Health Division which has been designated as the CUPA for Shasta County by CalEPA.

*Government Publication Date: Feb 16, 2016*

**San Luis Obispo County CUPA Facilities List:**[SAN LUIS OBIPO CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in San Luis Obispo County. This list is made available by County of San Luis Obispo Environmental Health Services Division which has been designated as the CUPA for the County.

*Government Publication Date: Apr 21, 2016*

**Solano County CUPA List:**[SOLANO CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the County of Solano. This list is made available by Solano County Environmental Health Division which has been certified by CalEPA to implement the Unified program as a CUPA.

*Government Publication Date: Apr 28, 2016*

**Solano County Local Oversight Program List:**[SOLANO LOP](#)

A list of Leaking Underground Storage Tank (LUST) facilities in the Solano County. This list is made available by the Solano County Environmental Health Services. Since April 1993, the State Water Resources Control Board has contracted with the County of Solano to provide regulatory oversight for the cleanup of LUSTs under Local Oversight Program (LOP) contract.

*Government Publication Date: Apr 28, 2016*

**Solano County Underground Storage Tanks List:**[SOLANO UST](#)

A list of all registered Underground Storage Tanks (USTs) in the County of Solano. The list is made available by Solano County Environmental Health Services Division. There are an estimated 190 facilities throughout the county that are subject to the regulatory requirements of the UST program.

*Government Publication Date: Apr 28, 2016*

**Sonoma County CUPA Facilities List:**[SONOMA CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Sonoma County. This list is made available by Sonoma County Hazardous Materials (HazMat) Division which has been designated as the CUPA for the County.

*Government Publication Date: Jan 11, 2016*

**Sonoma County LOP Site List:**[SONOMA LOP](#)

A list of Leaking Underground Storage Tank (LUST) facilities in Sonoma County. This list is made available by Sonoma County Department of Health Services. Sonoma County Local Oversight Program (LOP) oversees the investigation and cleanup of fuel releases from underground storage tanks in all areas of the County with the exception of the Cities of Santa Rosa and Healdsburg.

*Government Publication Date: Apr 01, 2016*

**Sonoma County Petaluma City CUPA Facilities:**[SONOMA PETAL](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Petaluma City. This list is made available by Petaluma Fire Prevention Bureau which is the CUPA for Petaluma City in Sonoma County.

*Government Publication Date: May 21, 2015*

**Sutter County CUPA List:**[SUTTER CUPA](#)

A list of facilities associated with Aboveground Petroleum Storage Tank (APSA) regulation, Hazardous Materials Business Plan (HMBP) Program and Underground Storage Tank (UST) regulation of Certified Unified Program Agency (CUPA) programs in Sutter County. This list is made available by Sutter County Environmental Health Division which has been designated as the CUPA for the County.

*Government Publication Date: Dec 8, 2015*

**Tuolumne County CUPA Facility List:**[TUOLUMNE CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Tuolumne County. This list is made available by Tuolumne County Environmental Health which is the CUPA for all areas of the County.

*Government Publication Date: May 2, 2016*

**Ventura County CUPA Facilities List:**[VENTURA CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Ventura County. This list is made available by Ventura County Environmental health Division.

*Government Publication Date: Mar 28, 2016*

**Ventura County City of Oxnard CUPA Facility List:**

[OXNARD CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Oxnard City. This list is made available by Oxnard City Fire Department which is the CUPA for Oxnard City in Ventura County.

**Government Publication Date: May 04, 2016**

**Ventura County Inactive Underground Storage Tanks Sites:**

[VENTURA INUST](#)

A list of inactive Underground Storage Tank (UST) sites in Ventura County. This list is made available by Ventura County Environmental Health Division.

**Government Publication Date: Apr 20, 2016**

**Ventura County Leaking Underground Fuel Tanks - Historic:**

[VENTURA HLUFT](#)

A historical list of cleanup oversight of the Leaking Underground Fuel Tank (LUFT) program provided by Ventura County Environmental Health Division. All new and existing underground fuel storage tank releases are now referred to the Los Angeles Regional Water Quality Control Board.

**Government Publication Date: May 31, 2008**

**Yolo County UST List:**

[YOLO UST](#)

A list of registered Underground Storage Tank (UST) sites in Yolo County. This list is made available by Yolo County Environmental Health Department which regulates the construction, operation, repair and removal of USTs throughout Yolo County.

**Government Publication Date: Apr 20, 2016**

**Yuba County CUPA Facilities List:**

[YUBA CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in Yuba County. This list is made available by Yuba County Environmental Health Division which is the CUPA for all areas of the County.

**Government Publication Date: Jan 29, 2016**

**City of Bakersfield CUPA List:**

[BKRSFIELD CUPA](#)

A list of facilities associated with various Certified Unified Program Agency (CUPA) programs in the City of Bakersfield. This list is made available by the City of Bakersfield Fire Department.

**Government Publication Date: Mar 07, 2016**

**Gilroy City CUPA Facilities List:**

[SANTA CLARA GIL](#)

The Gilroy City Fire Marshal's office maintains a list of CUPA Facilities located in Gilroy City.

**Government Publication Date: Jan 19, 2016**

**Alpine County CUPA List:**

[ALPINE CUPA](#)

The Alpine County Health Department has been certified by Cal / EPA to implement the Unified program and maintains a list of Certified Unified Program Agency (CUPA) facilities.

**Government Publication Date: Feb 24, 2015**

**Glenn County CUPA List:**

[GLENN CUPA](#)

The Glenn County Air Pollution Control District is the Administering Agency and the Certified Unified Program Agency (CUPA) for Glenn County with responsibility for regulating hazardous materials handlers, hazardous waste generators, underground storage tank facilities, above ground storage tanks, and stationary sources handling regulated substances.

**Government Publication Date: May 02, 2016**

**Lassen County CUPA List:**

[LASSEN CUPA](#)

The Environmental Health Program of Lassen County tracks Certified Unified Program Agencies (CUPA) facilities.

**Government Publication Date: May 9, 2016**

**Mariposa County CUPA List:**

[MARIPOSA CUPA](#)

Mariposa County Health Department, Environmental Health Services, is certified by Cal-EPA as the Certified Unified Program Agency (CUPA) that administers specific hazardous materials/hazardous waste programs.

**Government Publication Date: Apr 8, 2016**



**Siskiyou County CUPA List:**[SISKIYOU CUPA](#)

The Hazardous Materials Management Group of Siskiyou County's Environmental Health Division Certified Unified Program Agency (CUPA) regulates underground tanks, hazardous materials (including but not limited to: hazardous substances, hazardous waste, and any material which a handler or the CUPA has reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

**Government Publication Date:** Oct 14, 2015

**Stanislaus County CUPA List:**[STANISLAUS CUPA](#)

The Environmental Resources Department of Stanislaus County maintains a list of Certified Unified Program Agency (CUPA) facilities.

**Government Publication Date:** Jan 25, 2016

**Trinity County CUPA List:**[TRINITY CUPA](#)

On January 1, 2005, the Department of Toxic Substances Control (DTSC) was authorized by the California Environmental Protection Agency (Cal/EPA) as the Trinity County Certified Unified Program Agency (CUPA). This CUPA list was made available by the DTSC.

**Government Publication Date:** Apr 15, 2016

**Tulare County CUPA List:**[TULARE CUPA](#)

The Certified Unified Program Agency (CUPA) unifies and consolidates under one roof the various requirements for businesses handling hazardous materials, generating or treating hazardous wastes, or operating aboveground or underground storage tanks. CUPA thereby enhances consistency, reduces duplication, and simplifies compliance for the regulated public. The Tulare County Environmental Health Division was certified as a CUPA in December, 1996.

**Government Publication Date:** Dec 3, 2015

**Additional Environmental Record Sources****Federal****Facility Registry Service/Facility Index:**[FINDS/FRS](#)

The US Environmental Protection Agency (EPA)'s Facility Registry System (FRS) is a centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, data collected from EPA's Central Data Exchange registrations and data management personnel.

**Government Publication Date:** Sep 24, 2015

**Toxics Release Inventory (TRI) Program:**[TRIS](#)

The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

**Government Publication Date:** Dec 31, 2014

**Hazardous Materials Information Reporting System:**[HMIRS](#)

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

**Government Publication Date:** Dec 8, 2015



**National Clandestine Drug Labs:**[NCDL](#)

The U.S. Department of Justice ("the Department") provides this data 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.

**Government Publication Date: Sep 5, 2015**

**Inventory of Open Dumps, June 1985:**[ODI](#)

The Resource Conservation and Recovery Act (RCRA of the Act) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

**Government Publication Date: Jun 1985**

**EPA Report on the Status of Open Dumps on Indian Lands:**[IODI](#)

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

**Government Publication Date: Dec 31, 1998**

**Toxic Substances Control Act:**[TSCA](#)

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

**Government Publication Date: Jun 30, 2014**

**Hist TSCA:**[HIST TSCA](#)

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

**Government Publication Date: 2006**

**FTTS Administrative Case Listing:**[FTTS ADMIN](#)

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

**Government Publication Date: Jan 19, 2007**

**FTTS Inspection Case Listing:**[FTTS INSP](#)

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

**Government Publication Date: Jan 19, 2007**

**Potentially Responsible Parties List:**

PRP

Early in the cleanup process, the Environmental Protection Agency (EPA) conducts a search to find the potentially responsible parties (PRPs). EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site.

*Government Publication Date: Nov 12, 2013*

**State Coalition for Remediation of Drycleaners Listing:**

SCRD DRYCLEANER

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. It is comprised of states with established drycleaner remediation programs. Coalition members are states with mandated programs and funding for drycleaner site remediation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

*Government Publication Date: Jan 1, 2016*

**Integrated Compliance Information System (ICIS):**

ICIS

The Integrated Compliance Information System (ICIS) is a system that provides information for the Federal Enforcement and Compliance (FE&C) and the National Pollutant Discharge Elimination System (NPDES) programs. The FE&C component supports the Environmental Protection Agency's (EPA) Civil Enforcement and Compliance program activities. These activities include Compliance Assistance, Compliance Monitoring and Enforcement. The NPDES program supports tracking of NPDES permits, limits, discharge monitoring data and other program reports.

*Government Publication Date: Dec 17, 2015*

**Drycleaner Facilities:**

FED DRYCLEANERS

A list of drycleaner facilities from the Integrated Compliance Information System (ICIS). The Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

*Government Publication Date: Feb 11, 2016*

**State****Drycleaner Facilities:**

DRYCLEANERS

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial, linen supply, commercial laundry, dry cleaning and pressing machines - Coin Operated Laundry and Dry Cleaning. This is provided by the Department of Toxic Substance Control.

*Government Publication Date: Feb 22, 2016*

**EnviroStor Inspection, Compliance, and Enforcement:**

INSP COMP ENF

A list of permitted facilities with inspections and enforcements tracked in the Department of Toxic Substance Control (DTSC) EnviroStor.

*Government Publication Date: Mar 14, 2016*

**Clandestine Drug Lab Sites:**

CDL

The Department of Toxic Substances Control (DTSC) maintains a listing of drug lab sites. DTSC is responsible for removal and disposal of hazardous substances discovered by law enforcement officials while investigating illegal/ clandestine drug laboratories.

*Government Publication Date: Dec 31, 2015*

**School Property Evaluation Program Sites:**

SCH

A list of sites registered with The Department of Toxic Substances Control (DTSC) School Property Evaluation and Cleanup (SPEC) Division. SPEC is responsible for assessing, investigating and cleaning up proposed school sites. The Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy the new school.

*Government Publication Date: Dec 7, 2015*

**California Hazardous Material Incident Report System (CHMIRS):**

[CHMIRS](#)

A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS). This list has been made available by the California Office of Emergency Services (OES).

**Government Publication Date:** Mar 08, 2016

**Sites Listed in the Solid Waste Assessment Test (SWAT) Program Report:**

[SWAT](#)

In a 1993 Memorandum of Understanding, the State Water Resources Control Board (SWRCB) agreed to submit a comprehensive report on the Solid Waste Assessment Test (SWAT) Program to the California Integrated Waste Management Board (CIWMB). This report summarizes the work completed to date on the SWAT Program, and addresses both the impacts that leakage from solid waste disposal sites (SWDS) may have upon waters of the State and the actions taken to address such leakage.

**Government Publication Date:** Dec 31, 1995

**Hazardous Waste Manifest Data:**

[HAZNET](#)

A list of hazardous waste manifests received each year by Department of Toxic Substances Control (DTSC). The volume of manifests is typically 900,000 - 1,000,000 annually, representing approximately 450,000 - 500,000 shipments.

**Government Publication Date:** Oct 2, 2015

**Cease and Desist Orders and Cleanup and Abatement Orders:**

[CDO/CAO](#)

The California Environment Protection Agency "Cortese List" of active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO). This list contains many CDOs and CAOs that do NOT concern the discharge of wastes that are hazardous materials. Many of the listed orders concern, as examples, discharges of domestic sewage, food processing wastes, or sediment that do not contain hazardous materials, but the Water Boards' database does not distinguish between these types of orders.

**Government Publication Date:** Feb 28, 2012

**Historical California Hazardous Material Incident Report System (CHMIRS):**

[HIST CHMIRS](#)

A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS) prior to 1993. This list has been made available by the California Office of Emergency Services (OES).

**Government Publication Date:** Jan 1, 1993

**Historical Hazardous Waste Manifest Data:**

[HIST MANIFEST](#)

A list of historic hazardous waste manifests received by the Department of Toxic Substances Control (DTSC) from year the 1980 to 1992. The volume of manifests is typically 900,000 - 1,000,000 annually, representing approximately 450,000 - 500,000 shipments.

**Government Publication Date:** Dec 31, 1992

**Tribal**

**No Tribal additional environmental record sources available for this State.**

**County**

**Los Angeles County Site Mitigation List:**

[LA SML](#)

A Site Mitigation List in the County of Los Angeles. The list is made available by Los Angeles County Fire Department. Site mitigation is handled by the Site Mitigation Unit (SMU) which facilitates completion of site clean-up projects of contaminated sites in an expeditious manner in all cities of the Los Angeles County except El Segundo, Glendale, Long Beach, Santa Fe Springs, and Vernon.

**Government Publication Date:** Jun 23, 2015

**Riverside County Disclosure Facility List:**

[RIVERSIDE HZH](#)

A list of facilities disclosed to Riverside County Department of Environmental Health (DEH). This list is made available by Riverside County DEH which has been designated as the CUPA for the County. A business is required to establish and submit a Business Plan if the facility handles hazardous material equal to or greater than 55 gallons, 500 pounds or 200 cubic feet at any time during the year.

**Government Publication Date: Feb 17, 2016**

**Riverside County Hazardous Waste Generator Sites List:**

[RIVERSIDE HWG](#)

A list of Hazardous Waste Generator Sites in the County of Riverside. This list is made available by Riverside County Department of Environmental Health which has been designated as the CUPA for the County.

**Government Publication Date: Feb 17, 2016**

**San Joaquin County Hazardous Materials Facilities List:**

[SANJOAQUIN HM](#)

A list of Hazardous Materials Facilities in San Joaquin County. This list is made available by San Joaquin County Environmental Health Department which has been designated as the CUPA for the County.

**Government Publication Date: Jan 29, 2016**

**Ventura County Hazardous Material Release (Prop 65) Sites:**

[VENTURA HAZR](#)

A historic list of hazardous material releases from the Hazardous Material Release Report collected by the Environmental Health Division of Ventura County. As per the department this report contains records from 1987 to 2014.

**Government Publication Date: 1987 - 2014**

**Ventura County Inactive Hazardous Waste Sites:**

[HW INACTIVE](#)

A list of Inactive Hazardous Waste Sites in Ventura County collected by Ventura County's Environmental Health Division.

**Government Publication Date: Jun 26, 2015**

**Delisted County Records:**

[DELISTED COUNTY](#)

Records removed from county or CUPA databases. Records may be removed from the county lists made available by the respective county departments because they are inactive, or because they have been deemed to be below reportable thresholds.

**Government Publication Date: May 9, 2016**

# Definitions

**Database Descriptions:** This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

**Detail Report:** This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

**Distance:** The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries". All values are an approximation.

**Direction:** The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

**Elevation:** The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

**Executive Summary:** This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

**Map Key:** The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

**Unplottables:** These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and were included as reference.

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**APPENDIX I:**  
**KEY PERSONNEL RESUMES**

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## Kelly Hoover

### SENIOR ENVIRONMENTAL CONSULTANT

#### Education

Bachelor of Science, Biology, University of Glasgow,  
Scotland, United Kingdom, 2002

#### Project Experience

**Industrial Development; Deland, FL** – Ms. Hoover performed a Phase I Environmental Site Assessment of this 47.70 acre industrial facility that was constructed in phases between 1971 and 2002. Previous occupants had included an aluminum fence manufacturing company, and a defense related manufacturing facility, which developed ultra-lightweight camouflage nets, chemical and biological warfare alarms and detectors, carbon fiber resin reinforced aircraft components, and equipment/ordnance components.

**Former Airport Property; Opa Locka, FL** – Ms. Hoover performed a Phase I Environmental Site Assessment of this 176 acre airport property that had been developed to include an automobile dealership, a 150,000 square foot multiple tenant industrial building, a 500,000 square foot mail sorting and distribution center, and a gasoline station.

**Marina Property; Fort Myers, FL** – Ms. Hoover performed a Phase I Environmental Site Assessment of this 30 acre property that had been developed as a full-service marina since the early 1950s. Based upon findings of the assessment, a Phase II Subsurface Investigation was conducted, which revealed contaminants of concern above reportable levels. The report was critical in assisting the client make the appropriate business decision regarding the site.

#### INDUSTRY TENURE

Environmental: 2002

EMG: 2014

#### RELATED EXPERIENCE

- Phase I Environmental Site Assessment
- Transaction Screen Reports
- Asbestos Surveys
- Asbestos Management Plans
- Asbestos Project Design
- Indoor Air Quality (IAQ) Assessment
- Mold Assessment
- LEED IAQ Testing
- Industrial Hygiene Surveys
- Financial Portfolios
- Retail Portfolios

#### INDUSTRY EXPERIENCE

- Government
- Office
- Industrial
- Housing/Multi-family
- Higher Education
- Hospitality
- Petroleum
- Financial
- Healthcare
- Retail/Wholesale

#### ACTIVE LICENSES/REGISTRATIONS

- Florida Mold Assessor
- Florida Asbestos Inspector
- Florida Asbestos Contractor Supervisor
- Florida Asbestos Management Planner
- Florida Asbestos Project Designer

#### REGIONAL LOCATION

Tampa, FL

**Project Experience Cont.**

**Marina Property; Key West, FL** – Ms. Hoover performed a Phase I Environmental Site Assessment of a former marina in Key West, Florida as part of the refinance of the property. During review of regulatory files, Ms. Hoover identified that the Project was listed as a Leaking Underground Storage Tank (LUST) site; however, through file review determined that the LUST case had been attributed to the wrong property in error. Ms. Hoover was able to resolve the discrepancy with the regulators, which led to the release being rescinded and the case was closed prior to foreclosure.

## Kate Downey

### PROJECT MANAGER

### Education

Bachelor of Science, Biological Sciences, California Polytechnic State University, San Luis Obispo, 2010

### Project Experience

**Auto Repair Center; Los Angeles, California** – Ms. Downey conducted a Phase I Environmental Site Assessment for a large auto repair center. She reviewed previous investigations and on-site waste disposal records to create a thorough report with specific recommendations for the client. Her work helped EMG complete this project on schedule and within budget.

**Retail Shopping Complex, Fresno, California; Fresno, California** – Ms. Downey served as Project Manager for the Phase I ESA for a 13-acre multi-tenant retail shopping center and identified two recognized environmental conditions in connection with the Project, through her review of monitoring reports and interviews with case managers. The client found her observations critical to their final business decision.

**Fitness Center Portfolio; Multiple Cities, Missouri** – Ms. Downey completed 17 consecutive on-site investigations for a multi-state fitness center portfolio, collecting data and contributing to the findings of the reports. Her on-site investigations helped EMG's staff write the ESA reports quickly and precisely.

**Property Condition Assessment for Professional Office Tower; Los Angeles, California** – Ms. Downey performed a PCA for a professional office tower with a complex HVAC central system, and multiple costs for a 12 year reserve term. Her detailed findings included ADA costs, HVAC and mechanical replacement costs and life/safety deficiencies. These findings were instrumental in the client's budgeting decisions.

### INDUSTRY TENURE

Environmental: 2013

EMG: 2013

### RELATED EXPERIENCE

- A/E Project Manager since 2014

### INDUSTRY EXPERIENCE

- Hospitality
- Multifamily
- Automotive repair
- Industrial warehouses
- Assisted living
- Dry cleaners
- Vacant land
- Office
- Retail

### ACTIVE LICENSES/REGISTRATIONS

- AHERA – Certified Building Inspector

### REGIONAL LOCATION

Los Angeles, CA

## Appendix

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Appendix

## Appendix G Noise and Vibration Background and Modeling Data

# Noise Background and Modeling Data

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## NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.”

### Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20  $\mu\text{Pa}$ ).
- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second ( $1 \times 10^{-6}$  in/sec).
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level ( $L_{eq}$ ); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the  $L_{eq}$  metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Statistical Sound Level ( $L_n$ ).** The sound level that is exceeded “n” percent of time during a given sample period. For example, the  $L_{50}$  level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the “median sound level.” The  $L_{10}$  level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the “intrusive sound level.” The  $L_{90}$  is the sound level exceeded 90 percent of the time and is often considered the “effective background level” or “residual noise level.”



- **Day-Night Sound Level ( $L_{dn}$  or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and  $L_{dn}$  values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the  $L_{dn}$  value). As a matter of practice,  $L_{dn}$  and CNEL values are interchangeable and are treated as equivalent in this assessment.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

## Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

### *Amplitude*

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

**Table 1** Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies, David A. and Colin H. Hansen. 2009. *Engineering Noise Control: Theory and Practice*. 4th ed. New York: Spon Press.

## *Frequency*

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are “felt” more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people’s judgments of the “noisiness” of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

## *Duration*

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called  $L_{eq}$ ), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the  $L_{50}$  noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the  $L_2$ ,  $L_8$  and  $L_{25}$  values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These “n” values are typically used to demonstrate compliance for stationary noise sources with many cities’ noise ordinances. Other values typically noted during a noise survey are the  $L_{min}$  and  $L_{max}$ . These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level ( $L_{dn}$ ). The CNEL descriptor requires that an artificial increment (or “penalty”) of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The  $L_{dn}$  descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or  $L_{dn}$  metrics are commonly applied to the assessment of roadway and airport-related noise sources.

## **Sound Propagation**

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as “spreading loss.” For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance

from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective (“hard site”) surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

## Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, though generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, [Table 2](#) shows typical noise levels from familiar sources.

**Table 2** Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2009, November. Technical Noise Supplement ("TeNS"). Prepared by ICF International.

## Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the square

root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

The units for PPV and RMS velocity are normally inches per second (in/sec). However, vibration is often presented and discussed in dB units in order to compress the range of numbers. In this analysis, PPV and RMS velocities are in in/sec, and vibration levels are in dB relative to 1 micro-inch per second (abbreviated as VdB). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration, therefore, man-made vibration problems are usually confined to relatively short distances from the source (500 to 600 feet or less).

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. **Table 3** displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

**Table 3** Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of “architectural” (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to “architectural” damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2004, June. Transportation- and Construction-Induced Vibration Guidance Manual. Prepared by ICF International.

Construction operations can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to the construction site. **Table 4** lists vibration levels for typical construction equipment (not all of which is expected to be used at the proposed project site).

**Table 4** Vibration Levels for Typical Construction Equipment

Equipment	Approximate Velocity Level at 25 Feet (VdB)	Approximate RMS <sup>1</sup> Velocity at 25 Feet (in/sec)
Pile Driver (impact) Upper Range	112	1.518
Pile Driver (impact) Lower Range	104	0.644
Pile Driver (sonic) Upper Range	105	0.734

**Table 4** Vibration Levels for Typical Construction Equipment

Equipment		Approximate Velocity Level at 25 Feet (VdB)	Approximate RMS <sup>1</sup> Velocity at 25 Feet (in/sec)
Pile Driver (sonic) Lower Range		93	0.170
Large Bulldozer		87	0.089
Caisson Drilling		87	0.089
Jackhammer		79	0.035
Small Bulldozer		58	0.003
Loaded Trucks		86	0.076
Criteria	FTA – Human Annoyance (Residential Daytime)	78	—
	FTA – Human Annoyance (Residential Nighttime)	72	
	FTA – Human Annoyance (Office)	84	
	FTA – Structural Damage (Residential)	—	0.20
	FTA – Structural Damage (Office)	—	0.30

Source: FTA 2006

<sup>1</sup> RMS velocity calculated from vibration level (VdB) using the reference of 1 microinch/second.

As shown in **Table 4**, vibration generated by certain, vibration-intensive construction equipment has the potential to be substantial (should those particular items be employed at any given construction site), since these items have the potential to exceed the FTA criteria for structural damage of 0.20 in/sec.

## Construction Equipment Noise Levels

### Construction Equipment

Each stage of construction involves the use of different kinds of construction equipment and therefore has its own distinct noise characteristics. Noise levels from construction activities are dominated by the loudest piece of equipment and generally occur during the site preparation and grading phase, when bulldozers, backhoes, and graders are used. **Table 5** shows the average noise levels from individual pieces of construction equipment. **Table 6** shows the maximum operational noise levels of heavy construction equipment.

**Table 5** Average Construction Equipment Noise Levels

Type of Equipment	Average Measured Sound Levels (dBA at 50 feet)
Pile Driver, Impact	101
Pile Driver, Sonic	96
Ballast Tamper	83
Compactor	82
Concrete Mixer	85
Crane, Mobile	83
Crane, Derrick	88
Loader, Large	85
Loader, Front-End	79
Paver	89
Scraper	89
Jack Hammers	88
Pneumatic Tools	85
Pumps	76
Dozer, Small	80



**Table 5** Average Construction Equipment Noise Levels

Type of Equipment	Average Measured Sound Levels (dBA at 50 feet)
Dozer, Large	86
Hydraulic Backhoe	85
Hydraulic Excavators	82
Graders	85
Air Compressors	81
Trucks	91

Source: Bolt, Beranek and Newman, 1971; FTA, 2006.<sup>1</sup>

**Table 6** Maximum Heavy Construction Equipment Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 ft.)	Suggested Maximum Sound Levels for Analysis (dBA at 50 ft.)
Jack Hammers	75–88	82
Pneumatic Tools	78–88	85
Pumps	74–84	80
Dozers	77–90	85
Pile Driver, Impact	95–110	105
Pile Driver, Sonic	90–105	100
Scrapers	83–91	87
Haul Trucks	83–94	88
Cranes	79–86	82
Portable Generators	71–87	80
Rollers	75–82	80
Tractors	77–82	80
Front-End Loaders	77–90	86
Hydraulic Backhoe	81–90	86
Hydraulic Excavators	81–90	86
Graders	79–89	86
Air Compressors	76–89	86
Trucks	81–87	86

Source: Bolt, Beranek & Newman; Noise Control for Buildings and Manufacturing Plants, 1987.

Construction equipment typically moves around on the project site and under variable power levels. Noise from construction equipment decreases by 6 to 7.5 dB with each doubling of distance between the source and receptor.<sup>2</sup> For example, the noise levels from a bulldozer that generates 85 dBA at 50 feet would measure 79 dBA at 100 feet, 73 dBA at 200 feet, 67 dBA at 400 feet, and 61 dBA at 800 feet (conservatively using a 6 dB

<sup>1</sup> Bolt, Beranek & Newman (BBN); Noise Control for Buildings and Manufacturing Plants, 1987; Federal Transit Administration (FTA). 2006, May. Transit Noise and Vibration Impact Assessment. U.S. Department of Transportation (DoT). FTA-VA-90-1003-06.

<sup>2</sup> As sound energy travels outward from the source, spreading loss accounts for a 6 dB decrease in noise level. Soft ground and atmospheric absorption effects can add another decrement of 1.5 dB (for a total of 7.5 dB per distance doubling).

per doubling of distance attenuation factor). Also, noise levels are typically reduced from this value due to usage factors<sup>3</sup> as well as the barrier effects provided by the physical structures once erected.

## Existing Setting

The proposed buildout of the Temecula Valley Charter School is to be located in the census-designated-place (CDP) of French Valley; in unincorporated Riverside County. The proposed project site is located on the west side of Winchester Road (State Road 79) between Keller Road and Pourroy Road. The site encompasses approximately 15 acres and is mostly undeveloped except for residential uses in the westerly part of the project site. This residential area consists of two single-family residences, one garage, and two above-ground water tanks. The garage in the south-central part of the site, the mobile home, and the garage are to be demolished at commencement of the project, while the vacant single-family residence in the northwestern part of the site would be left as is.

The major existing noise source on the proposed project site is traffic noise from vehicles along Winchester Road (State Road 79). Other noise sources include aircraft noise from nearby airports/heliports and operational noise from residences in the vicinity of the project; including people talking and general property maintenance.

The project site is surrounded by rural residences to the west and north, vacant land to the south, and a mix of vacant and agricultural land to the east (beyond Winchester Road). The nearest residence to the project site (not including the vacant single family residence in the northwestern part of the site) is a single-family home just north of the western part of the site. There are also multiple single-family residences between 200 and 500 feet north of the proposed project site, and approximately 350 feet west of the proposed project site. This residential land surrounding the project site is considered rural residential, as there are less than 20 residences within a 1,000-foot radius around the project site.

## REGULATORY FRAMEWORK

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

### Federal Regulations

#### *Federal Highway Administration*

The FHWA values are the maximum desirable values by land use type and area based on a “trade-off” of what is desirable and what is reasonably feasible. These values recognize that in many cases lower noise exposures would result in greater community benefits. The FHWA design noise levels are included in [Table 4](#).

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<sup>3</sup> Usage factor is the percentage of time during the workday that the equipment is operating at full power (on which the reference noise ratings for typical average and typical maximum noise emissions are based).

**Table 4** FHWA Design Noise Levels

Activity Category	Design Noise Levels <sup>1</sup>		Description of Activity Category
	L <sub>eq</sub> (dBA)	L <sub>10</sub> (dBA)	
A	57 (exterior)	60 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	70 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	75 (exterior)	Developed lands, properties, or activities not included in Categories A or B, above
D	–	–	Undeveloped lands.
E	52 (interior)	55 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: FHWA

<sup>1</sup> Either L<sub>eq</sub> or L<sub>10</sub> (but not both) design noise levels may be used on a project.

### *U.S. Environmental Protection Agency*

In addition to FHWA standards, the United States Environmental Protection Agency (EPA) has identified the relationship between noise levels and human response. The EPA has determined that over a 24-hour period, a L<sub>eq</sub> of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at an L<sub>eq</sub> of 55 dBA and interior levels at or below 45 dBA. While these levels are relevant for planning and design and useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community.

The EPA also set 55 dBA L<sub>dn</sub> as the basic goal for exterior residential noise intrusion. However, other federal agencies, in consideration of their own program requirements and goals, as well as difficulty of actually achieving a goal of 55 dBA L<sub>dn</sub>, have settled on the 65 dBA L<sub>dn</sub> level as their standard. At 65 dBA L<sub>dn</sub>, activity interference is kept to a minimum, and annoyance levels are still low. It is also a level that can realistically be achieved.

### *Occupational Health and Safety Administration*

The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the EPA. Such limitations would apply to the operation of construction equipment and could also apply to any proposed industrial land uses. Noise exposure of this type is dependent on work conditions and is addressed through a facility's Health and Safety Plan, as required under OSHA, and is therefore not addressed further in this analysis.

### **California State Regulations**

The State regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise insulation standards and provides guidance for local land use compatibility.













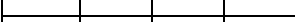













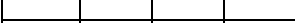












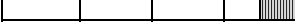





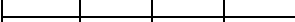




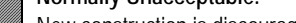
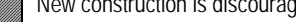
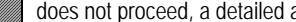

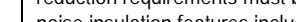
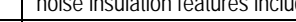
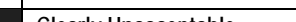
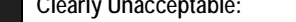

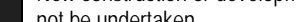
The California Building Code (CBC), Title 24, Part 2, Volume 1, Chapter 12, *Interior Environment*, Section 1207.11.2, *Allowable Interior Noise Levels*, requires that interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric is evaluated as either the day-night average sound level (L<sub>dn</sub>) or the community noise equivalent level (CNEL), consistent with the noise element of the local general plan.

The California Green Building Standards Code (CALGreen), Chapter 5, Division, 5.5 has additional requirements for insulation that affect exterior-interior noise transmission for non-residential structures: Pursuant to section 5.507.4.1, *Exterior Noise Transmission, Prescriptive Method*, Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite sound transmission class (STC) rating of at least 50  $L_{dn}$  or CNEL or a composite outdoor-indoor transmission class (OITC) rating of no less than 40  $L_{dn}$  or CNEL with exterior windows of a minimum STC of 40 or OITC of 30 within a 65 dBA CNEL noise contour of an airport or within a 65 dBA CNEL or  $L_{dn}$  noise contour of a freeway, expressway, railroad, industrial source, or fixed-guideway source as determined by the noise element of the general plan. Where noise contours are not readily available, buildings exposed to a noise level of 65 dBA  $L_{eq}$  1-hour during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45  $L_{dn}$  or CNEL (or OITC 35), with exterior windows of a minimum of STC 40 (or OITC 30).

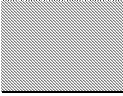

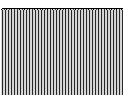

Residential structures located within the noise contours identified above require an acoustical analysis showing that the structure has been designed to limit intruding noise in the prescribed allowable levels. To comply with these regulations, applicants for new the residential projects are required to submit an acoustical analysis report. The report is required to show topographical relationship of noise sources and dwelling site, identification of noise sources and their characteristics, predicted noise spectra at the exterior of the proposed dwelling structure considering present and future land usage, basis for the prediction (measured or obtained from published data), noise attenuation measures to be applied, and an analysis of the noise insulation effectiveness of the proposed construction showing that the prescribed interior noise level requirements are met. If interior allowable noise levels are met by requiring that windows be unopenable or closed, the design for the structure must also specify the means that will be employed to provide ventilation and cooling, if necessary, to provide a habitable interior environment.

Table 5, presents a land use compatibility chart for community noise prepared by the California Office of Noise Control. This table provides urban planners with a tool to gauge the compatibility of land uses relative to existing and future noise levels. Table 5 identifies ‘normally acceptable’, ‘conditionally acceptable’, ‘normally unacceptable’, and ‘clearly unacceptable’ noise levels for various land uses. The ‘conditionally acceptable’ and ‘normally unacceptable’ designations indicate that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated into the design. By comparison, a ‘normally acceptable’ designation indicates that standard construction can occur with no special noise reduction requirements.

**Table 5** Community Noise and Land Use Compatibility

Land Uses	CNEL (dBA)					
	55	60	65	70	75	80
Residential-Low Density Single Family, Duplex, Mobile Homes						
Residential- Multiple Family						
Transient Lodging: Hotels and Motels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concert Halls, Amphitheaters						
Sports Arena, Outdoor Spectator Sports						
Playground, Neighborhood Parks						
Golf Courses, Riding Stables, Water Recreation, Cemeteries						
Office Buildings, Businesses, Commercial and Professional						
Industrial, Manufacturing, Utilities, Agricultural						

**Explanatory Notes**

	<b>Normally Acceptable:</b> With no special noise reduction requirements assuming standard construction.		<b>Normally Unacceptable:</b> New construction is discouraged. If new construction does not proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	<b>Conditionally Acceptable:</b> New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design.		<b>Clearly Unacceptable:</b> New construction or development should generally not be undertaken.

Source: California Office of Noise Control. *Guidelines for the Preparation and Content of Noise Elements of the General Plan*. February 1976. Adapted from the US EPA Office of Noise Abatement Control, Washington D.C. Community Noise. Prepared by Wyle Laboratories. December 1971.

# County of Riverside Municipal Code

## Chapter 9.52 - NOISE REGULATION

Sections: **9.52.010 - Intent.**

At certain levels, sound becomes noise and may jeopardize the health, safety or general welfare of Riverside County residents and degrade their quality of life. Pursuant to its police power, the board of supervisors declares that noise shall be regulated in the manner described in this chapter. This chapter is intended to establish county-wide standards regulating noise. This chapter is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are established.

(Ord. 847 § 1, 2006)

### **15.04.020 - General regulations**

F.

Construction noise.

1.

Whenever a construction site is within one-quarter of a mile of an occupied residence or residences, no construction activities shall be undertaken between the hours of six p.m. and six a.m. during the months of June through September and between the hours of six p.m. and six a.m. during the months of October through May. Exceptions to these standards shall be allowed only with the written consent of the building official.

2.

The generation of construction noise other than as permitted in subsection (F)(1) of this section, shall be a violation of this title, and the building official or his or her designee shall have the authority to undertake enforcement actions in accordance with the procedures, remedies and penalties for violations as provided for in Riverside County Ordinance No. 725 (Chapter 1.16 of this code), which is incorporated into this chapter by reference.

## County of Riverside Noise Element

*(appended below)*

### Methodology

The analysis of noise impacts considers project construction and operations noise as defined by the County of Riverside (for noise compatibility, construction noise impacts, and stationary noise impacts) and the Federal Transit Administration (FTA) methodology (for construction vibration impacts). The proposed project would have a significant adverse noise impact if the project results in any of the following:



### *Traffic Noise Levels*

The traffic noise thresholds are based on human tolerance to noise and are widely used for assessing traffic noise impacts. The threshold for increase in traffic noise levels is based on the potential for traffic noise to become considerably louder than the ambient noise level. In general, noise levels must increase by 10 dB in order to double ambient noise levels. An increase of 5 dB is readily perceptible to the public, and a 3 dB increase is barely perceptible to the average healthy human ear (Caltrans 2009). An audible noise level increase in project-related traffic noise of 3 dB or more is to be considered substantial and will be treated as a significant impact. Traffic noise analysis was conducted by [traffic org] on the major roadways in the vicinity of the project area. Based on the FHWA-RD77-108 roadway noise calculation method<sup>4</sup>, noise levels **along nearby roadways** were analyzed with respect to both existing traffic conditions and to traffic conditions estimated at full build-out of the project. These values were compared, and a noise level increase of 3 dB or more would signify a potential impact.

### *Stationary-Source Noise*

The stationary noise thresholds are based on a combination of the human tolerance to noise and local criteria for stationary noise sources as established by the County of Riverside for noise control. Nuisance noise criteria is found in the County's Noise Element which established an exterior threshold of 65 dBA  $L_{eq}$  for noise that occurs in daytime (7:00 AM to 10:00 PM) and 45 dBA  $L_{eq}$  for noise that occurs in the nighttime (10:00 PM to 7:00 AM). Any project related operations that are expected to exceed the criteria included in the Riverside County Noise Element and Municipal Code will be treated as a noise impact.

### *Construction*

The potential for construction noise impacts to be objectionable depends on the magnitude of noise generated by the construction equipment, the frequency of noise sources during the construction day, and total duration of construction activities. The County Code regulates the timing of construction activities. The county of Riverside restricts construction activities to the daytime hours of 6:00 AM to 6:00 PM (Section 15.04.020 of the County Code). In order to calculate construction noise as it affects sensitive receptors, the FHWA Roadway Construction Noise Model calculation methodology was used. Using information provided by the County of Riverside, coupled with methodologies and inputs employed in the air quality assessment, the expected construction equipment mix was estimated and categorized by construction activity. FHWA RCNM includes reference noise levels for numerous equipment items, which were combined based on the equipment mix to establish a baseline noise levels per construction phase. Distances from construction activities were measured using aerial maps, and these distances were used to account for spreading loss between the source (construction activities) and receiver (sensitive receptor). Since this calculation does not account for shielding due to intervening buildings and structures, ground effects, or air absorption, the results of these calculations are conservative.

### *Vibration*

Based on the FTA vibration criteria, vibration annoyance impacts are considered significant when average vibration levels produced by construction equipment would produce excessive levels of vibration (78 VdB) during the daytime at offsite vibration-sensitive structures. In addition, the vibration level at which there is a risk of architectural damage is based on the FTA criteria (0.2 in/sec for typical wood-framed buildings or 0.5

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<sup>4</sup> Barry, T.M., and J. Regan. FHWA Traffic Noise Prediction Model. Report No. FHWA-RD-77-108. Washington, DC: Federal Highway Administration, December 1978.

in/sec for reinforced concrete, steel, or timber). The FTA Transit Noise and Vibration Impact Assessment Manual includes reference levels for numerous equipment items. Distances from construction activities were measured using aerial maps, and these distances were used to account for spreading loss between the source (construction equipment) and receiver (sensitive receptor). An impact due to vibration will occur if the measured vibration levels at any sensitive receiver exceeds the vibration criteria for that receiver.

## Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would result in:

- N-1 Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- N-2 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- N-3 A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- N-4 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- N-5 For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.
- N-6 For a project within the vicinity of a private airstrip, expose people residing or working the project area to excessive noise levels.

## Calculations

[insert calculation docs]

## Bibliography

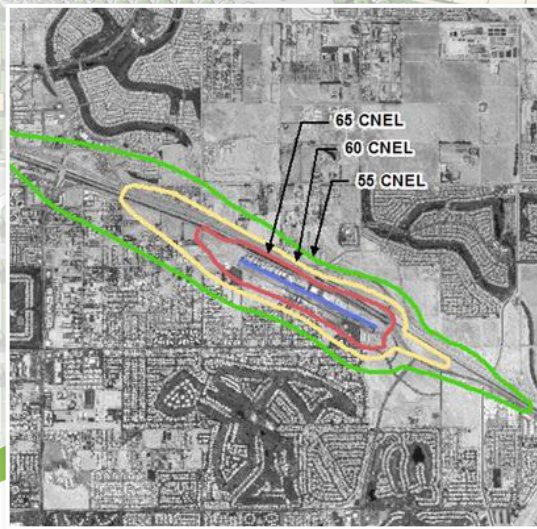
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## Noise Element



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# Chapter 7

## Noise Element

### Definitions



The level of sound that impacts a property varies greatly during the day. As an example, the sound near an airport may be relatively quiet when no airplane is taking off or landing, but will be extremely loud as a plane takes off. In order to deal with these variations, several noise indices have been developed, which measure how loud each sound is, how long it lasts, and how often the sound occurs. The indices express all the sound occurring during the day as a single average level, which if it occurred all day would convey the same sound energy to the site.

Following is a list of commonly used terms and abbreviations that may be found within this element or when discussing the topic of noise. This is an abbreviated glossary to be reviewed prior to reading the element. It is important to become familiar with the definitions listed in order to better understand the importance of the Noise Element within the County of Riverside General Plan. Since the disbanding of the State of California Office of Noise Control in the mid-1990, the State of California Office of Planning and Research General Plan Guidelines can offer further information on other noise-related resources.

**Ambient Noise:** The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

**CNEL (Community Noise Equivalent Level):** The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.

**dB (Decibel):** The unit of measure that denotes the ratio between two quantities that are proportional to power; the number of decibels corresponding to the ratio of the two amounts of power is based on a logarithmic scale.

**dBA (A-weighted decibel):** The A-weighted decibel scale discriminates upper and lower frequencies in a manner approximating the sensitivity of the human ear. The scale is based on a reference pressure level of 20 micropascals.

**Intrusive Noise:** That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency and time of occurrence, and tonal or informational content as well as the prevailing noise level.

**L<sub>10</sub>:** The A-weighted sound level exceeded 10% of the sample time. Similarly, L<sub>50</sub>, L<sub>90</sub>, etc.



**Sound** refers to anything that is or may be perceived by the ear.

**Noise** is defined as “unwanted sound” because of its potential to disrupt sleep, rest, work, communication, and recreation, to interfere with speech communication, to produce physiological or psychological damage, and to damage hearing.

**$L_{eq}$  (Equivalent energy level):** The average acoustic energy content of noise during the time it lasts. The  $L_{eq}$  of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure, no matter what time of day they occur. The County of Riverside uses a 10-minute  $L_{eq}$  measurement.

**$L_{dn}$  (Day-Night Average Level):** The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m. Note: CNEL and  $L_{dn}$  represent daily levels of noise exposure averaged on an annual or daily basis, while  $L_{eq}$  represents the equivalent energy noise exposure for a shorter time period, typically one hour.

**Micropascal:** The international unit for pressure, similar to pounds per square inch. 20 micropascals is the human hearing threshold. The scale ranges from zero for the average least perceptible sound to about 130 for the average pain level

**Noise Contours:** Lines drawn around a noise source indicating equal levels of noise exposure. CNEL and  $L_{dn}$  are the metrics used in this document to describe annoyance due to noise and to establish land use planning criteria for noise.

## Introduction



**Tinnitus:** The perception of ringing, hissing, or other sound in the ears or head when no external sound is present. For some people, tinnitus is just a nuisance. For others, it is a life-altering condition. In the United States, an estimated 12 million people have tinnitus to a distressing degree.

Before the alarm clock sounds, the lawn mower next door begins to roar. Then, while listening to the morning news on the radio, an airplane flies overhead and deadens all sound in the neighborhood. Once outside, the neighbor’s stereo can be heard a block away. And during the morning commute, car horns, rumbling mufflers, and whirring motorcycles serenade motorists on the highway. Even in the most rural areas of Riverside County, the eternal battle between the efficiency of technology, and the noise it can create cannot be avoided.

As modern transportation systems continue to develop and human dependence upon machines continues to increase, the general level of noise in our day to day living environment rises. In Riverside County, residential areas near airports, freeways, and railroads are being adversely affected by annoying or hazardous noise levels. Other activities such as construction, operation of household power tools and appliances, and industry, also contribute to increasing background noise.

## Addressing Noise Issues

The Noise Element is a mandatory component of the General Plan pursuant to the California Planning and Zoning Law, Section 65302(f). The element must recognize the guidelines adopted by the Office of Planning and

Research pursuant to Section 46050.1 of the Health and Safety Code. It also can be utilized as a tool for compliance with the State of California's noise insulation standards.

The General Plan Noise Element provides a systematic approach to identifying and appraising noise problems in the community; quantifying existing and projected noise levels; addressing excessive noise exposure; and community planning for the regulation of noise. This element includes policies, standards, criteria, programs, diagrams, a reference to action items, and maps related to protecting public health and welfare from noise.

### Setting

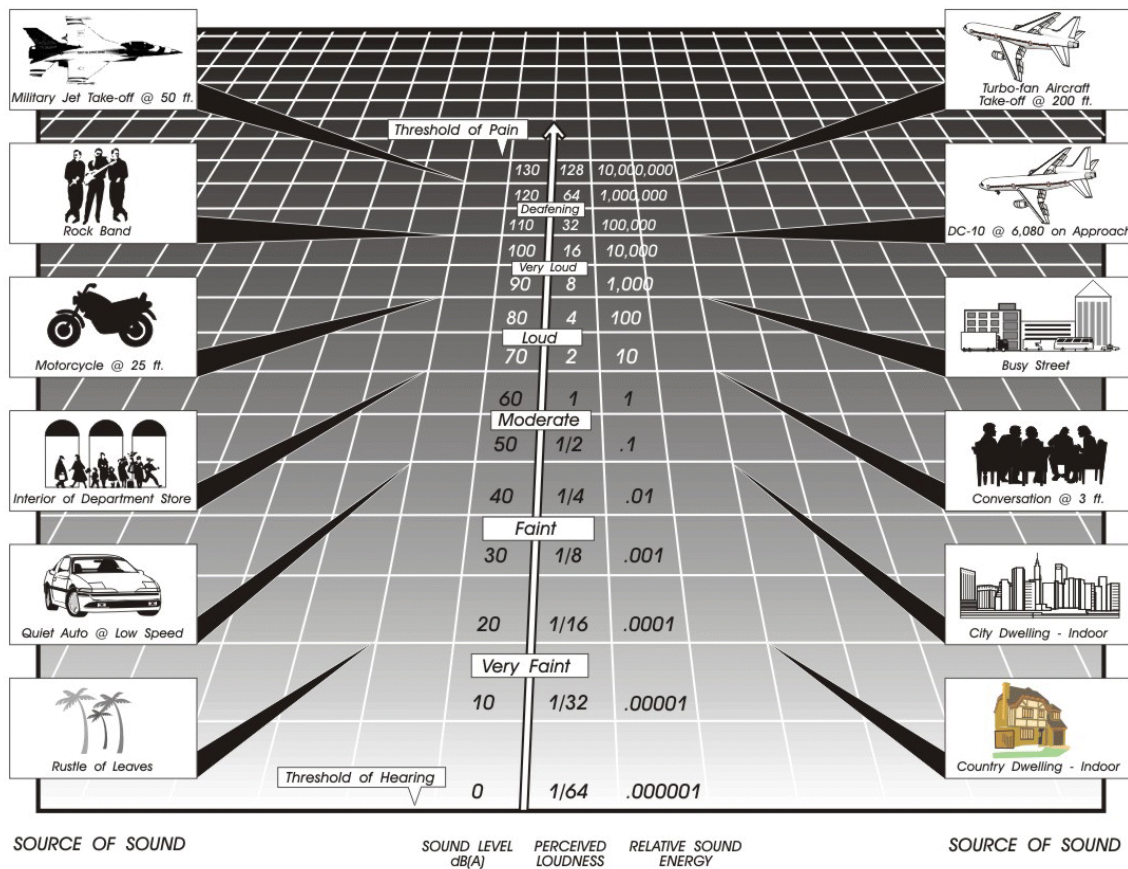
Riverside County is a continuously evolving group of communities that relies heavily upon the modern technological conveniences of American society to thrive and succeed as a pleasant and desirable place to live and work. Without such necessities as air-conditioning, heating, generators, and cars, living in an urban, suburban, rural, desert, or mountainous environment becomes difficult, if not impossible. Fortunately, these amenities are available to the residents of Riverside County and are used every day, often all day long. Unfortunately, these technological advances can come at a high price to residents' and visitors' ears.

The philosophical view commonly held by Riverside County staff and residents is that noise, which may be perceived by some to be annoying, may not be noticed at all by others. It is also important to note that people who move into an area where a noise source already exists (such as near an existing highway) are often more tolerant of that noise source than when a new noise generator locates itself in an established area that may be noise-sensitive (such as a stadium that is constructed near an established community).

Noise within Riverside County is generated by numerous sources found near places where people live and work. These sources are of particular concern when the noise they generate reaches levels above the prevailing background noise. There are many different types of noise, including mobile, stationary, and construction-related, that affect noise-sensitive receptors such as residences, schools, and hospitals. Figure N-1, Common Noise Sources and Noise Levels, illustrates some noise producers that can be found within Riverside County, as well as their corresponding noise measurement. The following sections contain policies that address the issues of noise producers and their effects on noise-sensitive land uses.



Figure N- 1 Common Noise Sources and Noise Levels



## Noise Sensitive Land Uses

A series of land uses have been deemed sensitive by the State of California. These land uses require a serene environment as part of the overall facility or residential experience. Many of these facilities depend on low levels of sound to promote the wellbeing of the occupants. These uses include, but are not necessarily limited to; schools, hospitals, rest homes, long term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas. Activities conducted in proximity to these facilities must consider the noise output, and ensure that they don't create unacceptable noise levels that may unduly affect the noise-sensitive uses. The following policies address issues related to noise-sensitive land uses.

## Noise Compatibility

The Noise Element of the General Plan is closely related to the Land Use Element because of the effects that noise has on sensitive land uses. Noise-producing land uses must be compatible with adjacent land uses in order for the Land Use Plan to be successful. Land uses that emit noise are measured in A-weighted decibels (dBA) or Community Noise Equivalent Level (CNEL). If existing land uses emit noise above a certain level, they are not

compatible with one another, and therefore noise attenuation devices must be used to mitigate the noise to acceptable levels indoors and outdoors. In cases of new development, the placement of noise-sensitive land uses is integral to a successful community. Table N-1, Land Use Compatibility for Community Noise Exposure, reveals the noise acceptability levels for different land uses. Areas around airports may have different or more restrictive noise standards than those cited in Table N-1 (See Policy N 1.3 below). The following policies protect noise-sensitive land uses from noise emitted by outside sources, and prevent new projects from generating adverse noise levels on adjacent properties.

### Policies:

- |       |   |
|-------|---|
| N 1.1 | Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise-producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used. (AI 107)  |
| N 1.2 | Guide noise-tolerant land uses into areas irrevocably committed to land uses that are noise-producing, such as transportation corridors or within the projected noise contours of any adjacent airports. (AI 107)   |
| N 1.3 | <p>Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL:</p> <ul style="list-style-type: none"> <li>● Schools.</li> <li>● Hospitals.</li> <li>● Rest Homes.</li> <li>● Long Term Care Facilities.</li> <li>● Mental Care Facilities.</li> <li>● Residential Uses.</li> <li>● Libraries.</li> <li>● Passive Recreation Uses.</li> <li>● Places of Worship.</li> </ul> |

The General Plan policy and implementation item reference system:

**LU 1.3:** Identifies which element contains the Policy, in this case the Land Use Element, and the sequential number.

**AI 1 and AI 4:** Reference to the relevant Action Items contained in the Implementation Program found in Appendix K.



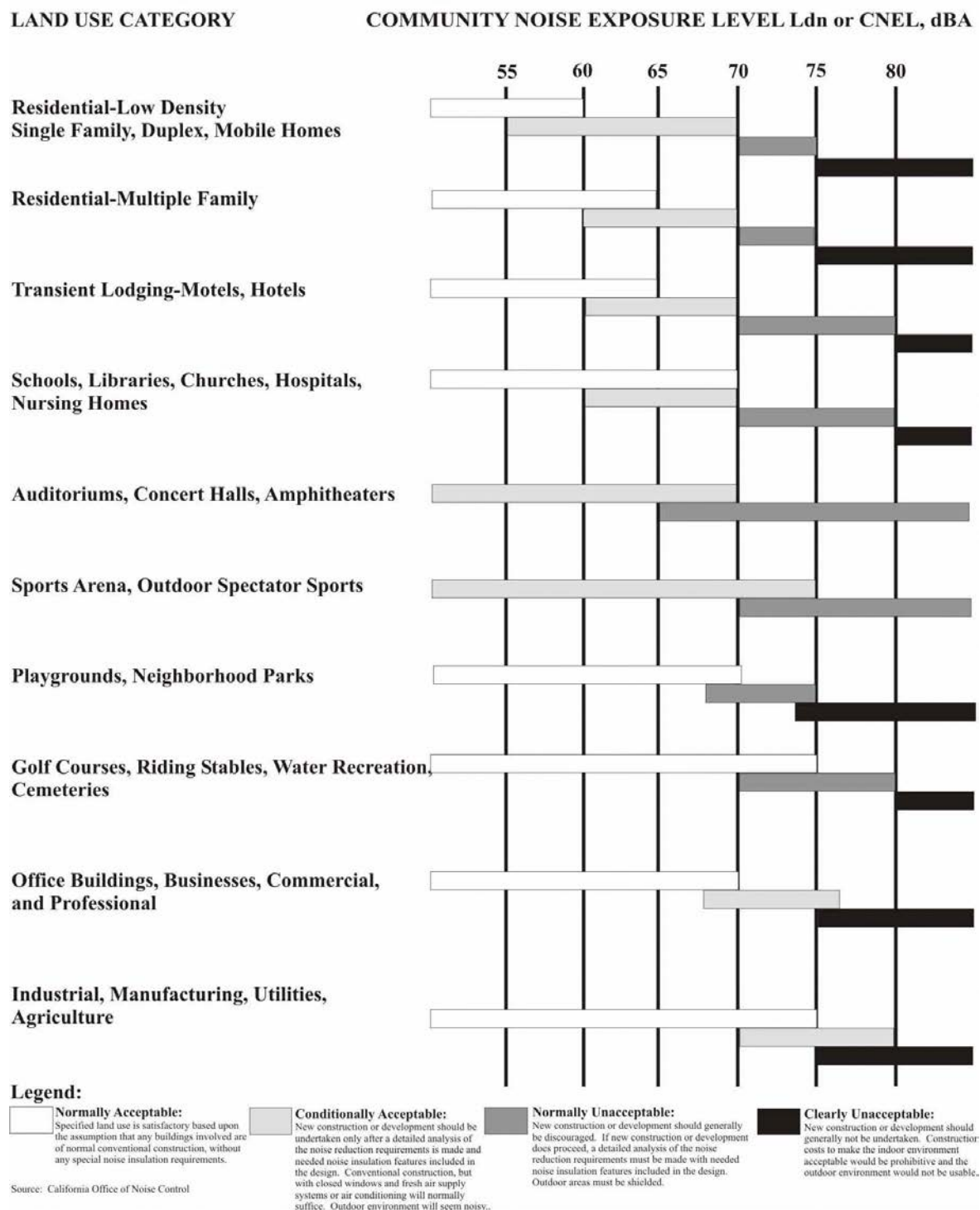
Please contact the Office of Industrial Hygiene for more information on acoustical specialists

According to the State of California Office of Planning and Research General Plan Guidelines, an acoustical study may be required in cases where these noise-sensitive land uses are located in an area of 60 CNEL or greater. Any land use that is exposed to levels higher than 65 CNEL will require noise attenuation measures.

Areas around airports may have different noise standards than those cited above. Each Area Plan affected by a public-use airport includes one or more Airport Influence Areas, one for each airport. The applicable noise compatibility criteria are fully set forth in Appendix L-1 and summarized in the Policy Area section of the affected Area Plan. (AI 105)

- N 1.4 Determine if existing land uses will present noise compatibility issues with proposed projects by undertaking site surveys. (AI 106, 109)
- N 1.5 Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County. (AI 105, 106, 108)
- N 1.6 Minimize noise spillover or encroachment from commercial and industrial land uses into adjoining residential neighborhoods or noise-sensitive uses. (AI 107)
- N 1.7 Require proposed land uses, affected by unacceptably high noise levels, to have an acoustical specialist prepare a study of the noise problems and recommend structural and site design features that will adequately mitigate the noise problem. (AI 106, 107)
- N 1.8 Limit the maximum permitted noise levels that cross property lines and impact adjacent land uses, except when dealing with noise emissions from wind turbines. Please see the Wind Energy Conversion Systems section for more information. (AI 108)

**Table N-1**  
**Land Use Compatibility for Community Noise Exposure**



## Noise Mitigation Strategies

Many land uses emit noise above state-mandated acceptable levels. The noise emitted from a land use must be mitigated to acceptable levels indoors and outdoors in order for other, more noise-sensitive land uses to locate in proximity to these noise producers. There are a number of ways to mitigate noise and the following policies suggest some possible solutions to noise problems.

### Policies:

- N 2.1 Create a County Noise Inventory to identify major noise generators and noise-sensitive land uses, and to establish appropriate noise mitigation strategies. (AI 105)
- N 2.2 Require a qualified acoustical specialist to prepare acoustical studies for proposed noise-sensitive projects within noise impacted areas to mitigate existing noise. (AI 105, 107)
- N 2.3 Mitigate exterior and interior noises to the levels listed in Table N-2 below to the extent feasible, for stationary sources: (AI 105)

**Table N-2:  
Stationary Source Land Use Noise Standards<sup>1</sup>**

Land Use	Interior Standards	Exterior Standards
<i>Residential</i>		
10:00 p.m. to 7:00 a.m.	40 L <sub>eq</sub> (10 minute)	45 L <sub>eq</sub> (10 minute)
7:00 a.m. to 10:00 p.m.	55 L <sub>eq</sub> (10 minute)	65 L <sub>eq</sub> (10 minute)

<sup>1</sup> These are only preferred standards; final decision will be made by the Riverside County Planning Department and Office of Public Health.

## Noise Producers

### Location of Noise Producers

“  
Good neighbors keep  
their noise to themselves.  
”

The communities of Riverside County need a variety of land uses in order to thrive and succeed. These land uses may provide jobs, clean water, ensure safety, ship goods, and ease transportation woes. But they may also emit high levels of noise throughout the day. These noise-producing land uses can complement a community when the noise they emit is properly mitigated. The following policies suggest a series of surveys and analyses to correctly identify the proper noise mitigating procedures in order to promote the continued success of the communities of Riverside County.

### Agriculture

One of the major economic thrusts of Riverside County is the agricultural industry. The Riverside County Right-to-Farm Ordinance conserves, protects, and encourages the development, improvement, and continued viability of agricultural land and industries for the long-term production of food and other agricultural products, and for the economic well-being of Riverside County's residents. The Right-to-Farm Ordinance also attempts to balance the rights of farmers to produce food and other agricultural products with the rights of non-farmers who own,

occupy, or use land within or adjacent to agricultural areas. The Riverside County Right-to-Farm Ordinance also works to reduce the burden of Riverside County's agricultural resources by limiting the circumstances under which agricultural operations may be deemed a nuisance. Policies within this section address the potential noise issues that may be raised in regards to agricultural production.

**Policies:**

- N 3.1 Protect Riverside County's agricultural resources from noise complaints that may result from routine farming practices, through the enforcement of the Riverside County Right-to-Farm Ordinance. (AI 105, 107)
- N 3.2 Require acoustical studies and subsequent approval by the Planning Department and the Office of Industrial Hygiene, to help determine effective noise mitigation strategies in noise-producing areas. (AI 105)
- N 3.3 Ensure compatibility between industrial development and adjacent land uses. To achieve compatibility, industrial development projects may be required to include noise mitigation measures to avoid or minimize project impacts on adjacent uses. (AI 107)
- N 3.4 Identify point-source noise producers such as manufacturing plants, truck transfer stations, and commercial development by conducting a survey of individual sites. (AI 106)
- N 3.5 Require that a noise analysis be conducted by an acoustical specialist for all proposed projects that are noise producers. Include recommendations for design mitigation if the project is to be located either within proximity of a noise-sensitive land use, or land designated for noise-sensitive land uses. (AI 109)
- N 3.6 Discourage projects that are incapable of successfully mitigating excessive noise. (AI 107)
- N 3.7 Encourage noise-tolerant land uses such as commercial or industrial, to locate in areas already committed to land uses that are noise-producing. (AI 107)

## Stationary Noise

A stationary noise producer is any entity in a fixed location that emits noise. Stationary noise producers are common in many noise-sensitive areas. Motors, appliances, air conditioners, lawn and garden equipment, power tools, and generators are often found in residential neighborhoods, as well as on or near the properties of schools, hospitals, and parks. These structures are often a permanent fixture and are required for the particular land use. Industrial and manufacturing facilities are also stationary noise producers that may affect sensitive land uses. Furthermore, while noise generated by the use of motor vehicles over public roads is preempted from local regulation, the County of Riverside considers the use of these vehicles to be a stationary noise source when operated on private property such as at a truck terminal or warehousing facility. The emitted noise from the producer can be mitigated to acceptable levels either at the source or on the adjacent property through the use of proper planning, setbacks, blockwalls, acoustic-rated windows, dense landscaping, or by changing the location of the noise producer. The following policies identify mechanisms to measure and mitigate the noise emitted from stationary noise producers.



## Community Noise Inventory

There are a series of noise producers within Riverside County that bear special recognition. These uses may be important parts of the economic health of Riverside County, but they still emit noise from time to time. Some of the special noise producers within Riverside County include, but are not limited to the Riverside Raceway, surface mining, truck transfer stations in the Mira Loma area, manufacturing facilities, and natural gas transmission pipelines.

Three high pressure natural gas transmission pipelines are located in the community of Cabazon (within the Pass Area Plan), and a series of valve stations are placed along the pipeline throughout the community. The pipelines supply a major portion of the non-transportation energy supply for Southern California. The depressurization of mainline valves at the valve stations for emergency or maintenance reasons can result in noise levels exceeding 140 dB  $L_{eq}$  at a distance of 50 feet from the source for more than an hour at a time. The pipelines are not located in heavily populated areas; however, should higher-intensity uses be approved in the area in the future, possible relocation of one or more pipelines or valves may be necessary.

### Policies:

- N 4.1 Prohibit facility-related noise received by any sensitive use from exceeding the following worst-case noise levels: (AI 105)
- a. 45 dBA-10-minute  $L_{eq}$  between 10:00 p.m. and 7:00 a.m.
  - b. 65 dBA-10-minute  $L_{eq}$  between 7:00 a.m. and 10:00 p.m.
- N 4.2 Develop measures to control non-transportation noise impacts. (AI 105)
- N 4.3 Ensure any use determined to be a potential generator of significant stationary noise impacts be properly analyzed and ensure that the recommended mitigation measures are implemented. (AI 105, 106, 109)
- N 4.4 Require that detailed and independent acoustical studies be conducted for any new or renovated land uses or structures determined to be potential major stationary noise sources. (AI 105)
- N 4.5 Encourage major stationary noise-generating sources throughout the County of Riverside to install additional noise buffering or reduction mechanisms within their facilities to reduce noise generation levels to the lowest extent practicable prior to the renewal of conditional use permits or business licenses or prior to the approval and/or issuance of new conditional use permits for said facilities. (AI 105, 107)
- N 4.6 Establish acceptable standards for residential noise sources such as, but not limited to, leaf blowers, mobile vendors, mobile stereos and stationary noise sources such as home appliances, air conditioners, and swimming pool equipment. (AI 105)



A **pure tone** is a single frequency tone with no harmonic content (e.g. hum).



- N 4.7 Evaluate noise producers for the possibility of pure-tone producing noises. Mitigate any pure tones that may be emitted from a noise source. (AI 106, 107)
- N 4.8 Require that the parking structures, terminals, and loading docks of commercial or industrial land uses be designed to minimize the potential noise impacts of vehicles on the site as well as on adjacent land uses. (AI 106, 107)

### Wind Energy Conversion Systems (WECS)

Wind energy is a unique resource found only in a portion of Riverside County. Wind Energy Conversion Systems (WECS) are used to harness the energy found in strong gusts of wind. In order to fully capitalize on this special commodity, a large number of wind turbines have been placed in a portion of the Coachella Valley and San Geronio Pass within Riverside County. There are some residential areas spread throughout Riverside County that may also capitalize on wind-generated power. Though there is minimal residential development in the immediate areas where these windmills are located, the potential for noise and ground-borne vibration in neighboring developed areas may occur. The Wind Implementation Monitoring Program, designed and implemented by Riverside County, guides the policy direction for this area.

#### Policies:

- N 5.1 Enforce the Wind Implementation Monitoring Program (WIMP).
- N 5.2 Encourage the replacement of outdated technology with more efficient technology with less noise impacts. (AI 105)

### Mobile Noise

Mobile noise sources may be one of the most annoying noise producers in a community because they are louder than background noises and more intense than many acceptable stationary noise sources. Though the noise emitted from mobile sources is temporary, it is often more disturbing because of its abruptness, especially single noise-producing events such as vehicle backfires. Common mobile noise sources include on-road vehicles, aircraft, and trains. The policies in this section identify common mobile noise sources, and suggest mitigation techniques to reduce the annoyance and burden of mobile noise sources on noise-sensitive receptors.



Please see the **Circulation Element** for further policies regarding transportation and noise related issues.

#### Policies:

- N 6.1 Consider noise reduction as a factor in the purchase of County maintenance equipment and their use by County contractors and permittees. (AI 108)
- N 6.2 Investigate the feasibility of retrofitting current County-owned vehicles and mechanical equipment to comply with noise performance standards consistent with the best available noise reduction technology. (AI 108)

- N 6.3 Require commercial or industrial truck delivery hours be limited when adjacent to noise-sensitive land uses unless there is no feasible alternative or there are overriding transportation benefits. (AI 105, 107)
- N 6.4 Restrict the use of motorized trail bikes, mini-bikes, and other off-road vehicles in areas of the county except where designated for that purpose. Enforce strict operating hours for these vehicles in order to minimize noise impacts on sensitive land uses adjacent to public trails and parks. (AI 105, 108)



The following airports are located within or have a direct effect on Riverside County. Please see Appendix L-1 for a map with each airport's noise contours. Also see the area plans and airport land use plans for more specific airport-related policies:

- Banning Municipal Airport
- Bermuda Dunes Airport
- Blythe Airport
- Chino Airport
- Corona Municipal Airport
- Chiriaco Summit Airport
- Jacqueline Cochran Regional Airport
- Flabob Airport
- French Valley Airport
- Hemet-Ryan Airport
- March Joint Air Reserve Base/March Inland Port
- Palm Springs International Airport
- Perris Valley Airport
- Riverside Municipal Airport
- Skylark Airport

## Transportation

The most common mobile noise sources in Riverside County are transportation-related. Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a higher sustained noise level in proximity to areas sensitive to noise exposure. Rail and aircraft operations, though less frequent, may generate extremely high noise levels that can be disruptive to daily activities. Though mass transit has not yet been developed within Riverside County, it is important to consider the noise that may be generated from transit service.

## Airports

With the dynamic growth in aviation, aircraft noise will remain a challenging environmental problem and one that will affect an increasing number of people as air traffic routes and procedures change in the future. Aircraft noise appears to produce the greatest community anti-noise response, although the duration of the noise from a single airplane is much less, for example, than that from a freight train. There is great economic benefit to gain from airports of any size, although living in proximity to an airport will necessarily result in exposure to aircraft noise.

There are fourteen public use or military airports that are located within or have a direct effect on Riverside County. The land under the flight paths of each airport was monitored to determine the amount of noise emitted by common aircraft taking-off and landing at any given airport. Noise contours were created based on the measurements from the monitoring program. The CNEL noise contour(s) for the following airports have been depicted in the applicable Area Plan's Airport Influence Area section:

- Banning Municipal Airport
- Bermuda Dunes Airport
- Blythe Airport
- Chino Airport

- Chiriaco Summit Airport
- Corona Municipal Airport
- Jacqueline Cochran Regional Airport
- Flabob Airport
- French Valley Airport
- Hemet-Ryan Airport
- March Joint Air Reserve Base
- Riverside Municipal Airport

Airport Land Use Compatibility Plans have been created for most airports within Riverside County, and they should be referenced for further information regarding airports. Helicopters and heliports are also potential sources of noise, but due to the relatively low frequency and short duration of their operation in most circumstances, these operations do not significantly affect average noise levels within Riverside County. The following general policies address the noise that comes from airports and the aircraft they service.

### **Policies:**

- N 7.1 New land use development within Airport Influence Areas shall comply with airport land use noise compatibility criteria contained in the corresponding airport land use compatibility plan for the area. Each Area Plan affected by a public-use airport includes one or more Airport Influence Areas, one for each airport. The applicable noise compatibility criteria are fully set forth in Appendix I-1 and summarized in the Policy Area section of the affected Area Plan.
- N 7.2 Adhere to applicable noise compatibility criteria when making decisions regarding land uses adjacent to airports. Refer to the Airports section of the Land Use Element (Page LU-32) and the Airport Influence Area sections of the corresponding Area Plans.
- N 7.3 Prohibit new residential land uses, except construction of a single-family dwelling on a legal residential lot of record, within the current 60 dB CNEL contours of any currently operating public-use, or military airports. The applicable noise contours are as defined by the Riverside County Airport Land Use Commission and depicted in Appendix I-1, as well as in the applicable Area Plan's Airport Influence Area section.
- N 7.4 Check each development proposal to determine if it is located within an airport noise impact area as depicted in the applicable Area Plan's Policy Area section regarding Airport Influence Areas. Development proposals within a noise impact area shall comply with applicable airport land use noise compatibility criteria.

### **Chocolate Mountain Aerial Gunnery Range**

A portion of the Chocolate Mountain Aerial Gunnery Range (CMAGR) is located in Riverside County, between the Eastern Coachella Valley Area Plan and East County Desert Areas. The CMAGR has served as a military

aerial bombing and gunnery training range since the 1940s. It is a centerpiece in a much larger training complex, known as the Bob Stump Training Range Complex, that incorporates adjacent and nearby special use airspace and ranges located in southeast California and southwest Arizona. This complex supports full-spectrum combat operations so that Marines can realistically train as they will fight. The CMAGR's desert mountain terrain is ideal for air-to-ground attack and air-to-air combat training. Tactical military exercises involve live explosives and large force-on-force aviation training. Noise emitting from training exercises may extend past the CMAGR boundaries.

## Policies:

- N 8.1 Prohibit residential development, except construction of a single-family dwelling on a legal residential lot of record, within the current 60 dB CNEL contours of the Chocolate Mountain Aerial Gunnery Range.

## Vehicular



Please see the **Circulation Element** for more in-depth information regarding Level of Service Standards, Average Daily Trips, and other information related to vehicular circulation.

Roadway traffic is one of the most pervasive sources of noise within Riverside County. Traffic noise varies in how it affects land uses depending upon the type of roadway, and the distance of the land use from that roadway. Some variables that affect the amount of noise emitted from a road are speed of traffic, flow of traffic, and type of traffic (e.g. tractor trailers versus cars). Another variable affecting the overall measure of noise is a perceived increase in sensitivity to vehicular noise at night. Appendix I-1 contains tables and figures that illustrate existing and forecasted noise from roadways throughout Riverside County. The existing noise measurements were obtained by measuring noise at different points adjacent to the roadway. The future noise contours along freeways and major highways, also located in Appendix I-1, were created from the results of traffic modeling to project the noise of major roadways in the future. The following policies address the issues of roadway traffic noise, and suggest methods to reduce the noise impact of roads on adjacent and nearby land uses.

## Policies:

- N 9.1 Enforce all noise sections of the State Motor Vehicle Code.
- N 9.2 Ensure the inclusion of noise mitigation measures in the design of new roadway projects in the county. (AI 105)
- N 9.3 Require development that generates increased traffic and subsequent increases in the ambient noise level adjacent to noise-sensitive land uses to provide for appropriate mitigation measures. (AI 106)
- N 9.4 Require that the loading and shipping facilities of commercial and industrial land uses, which abut residential parcels be located and designed to minimize the potential noise impacts upon residential parcels. (AI 105)
- N 9.5 Employ noise mitigation practices when designing all future streets and highways, and when improvements occur along existing highway segments. These mitigation measures will

emphasize the establishment of natural buffers or setbacks between the arterial roadways and adjoining noise-sensitive areas. (AI 105)

- N 9.6 Require that all future exterior noise forecasts use Level of Service C, and be based on designed road capacity or 20-year projection of development (whichever is less) for future noise forecasts. (AI 106)
- N 9.7 Require that field noise monitoring be performed prior to siting to any sensitive land uses along arterial roadways. Noise level measurements should be of at least 10 minutes in duration and should include simultaneous vehicle counts so that more accurate vehicle ratios may be used in modeling ambient noise levels. (AI 106)

### Mass Transit

Currently, the County of Riverside does not participate in or provide any rail transit services though public transportation is becoming a more desirable option for many travelers and commuters in Riverside County. Transit can be an alternative to driving a car through congested Riverside County freeways. Currently, the noise generated by public transportation within Riverside County affects only a very small percentage of the total residential population. As years pass, and the need for public transportation increases, there will be a greater number of residents affected by the noise that buses, transit oases shuttles, light rail, and trains will produce. The following policies address the issues of noise related to public transit.

#### Policies:

- N 10.1 Encourage local and regional public transit providers to ensure that the equipment they operate and purchase is state-of-the-art and does not generate excessive noise impacts on the community. (AI 108)
- N 10.2 Encourage the use of quieter electric-powered vehicles. (AI 108)
- N 10.3 Encourage the development and use of alternative transportation modes including bicycle paths and pedestrian walkways to minimize vehicular noise within sensitive receptor areas.
- N 10.4 Actively participate in the development of noise abatement plans for freeways and rapid transit. (AI 108)

“

*Calling noise a nuisance is like calling smog an inconvenience. Noise must be considered a hazard to the health of people everywhere.*

”

*-The Surgeon General*



Please see the **Circulation Element** for additional policies related to transit development and rail systems.



An at-grade railroad crossing is one where the street and the rail line form an intersection, and physically cross one-another.

## Rail

The rail system within Riverside County criss-crosses its way through communities, industrial areas, rural areas, and urban centers. Trains carry passengers, freight, and cargo to local and regional destinations day and night. Rail transportation may become more popular in the future if a mass public transportation system is implemented within Riverside County. Currently, daily train traffic produces noise that may disrupt activities in proximity to railroad tracks. For instance, trains are required to sound their horns at all at-grade crossings, and they may also be required to slow their speed through residential areas. These types of noise disturbances can interfere with activities conducted on noise-sensitive land uses. Exhibits showing existing railroad noise contours can be found in Appendix I-1.

These exhibits provide purely illustrative contours along rail lines throughout Riverside County. The following policies suggest actions that could minimize the impacts of train noise on noise-sensitive land uses.

### Policies:

- N 11.1 Check all proposed projects for possible location within railroad noise contours using typical noise contour diagrams. (AI 106, 109)
- N 11.2 Minimize the noise effect of rail transit (freight and passenger) on residential uses and other sensitive land uses through the land use planning process. (AI 106, 109)
- N 11.3 Locate light rail and fixed rail routes and design rail stations in areas that are accessible to both residential and commercial areas, but also minimize noise impacts on surrounding residential and sensitive land uses. (AI 106, 109)
- N 11.4 Install noise mitigation features where rail operations impact existing adjacent residential or other noise-sensitive uses. (AI 108)
- N 11.5 Restrict the development of new sensitive land uses to beyond the 65 decibel CNEL contour along railroad rights-of-way. (AI 106, 109)

## Building and Design

One of the most effective means of reducing noise in a sensitive area is to construct and design buildings in such a way that the noise is deflected in such a way that it does not affect the occupants. If the building has already been constructed, then landscaping and design techniques can be used to tastefully absorb the noise emitted from mobile or stationary sources. These building and design techniques should serve two purposes; to mitigate noise to acceptable indoor and outdoor levels, and to enhance the community character rather than detract from its surroundings. The following policies have been included in the Noise Element to ensure that the character of each community within Riverside County is preserved while minimizing noise to acceptable levels.

### Natural Barriers and Landscaping

#### Policies:

- N 12.1 Utilize natural barriers such as hills, berms, boulders, and dense vegetation to assist in noise reduction. (AI 108)
- N 12.2 Utilize dense landscaping to effectively reduce noise. However, when there is a long initial period where the immaturity of new landscaping makes this approach only marginally effective, utilize a large number of highly dense species planted in a fairly mature state, at close intervals, in conjunction with earthen berms, setbacks, or block walls. (AI 108)

### Temporary Construction

#### Policies:

- N 13.1 Minimize the impacts of construction noise on adjacent uses within acceptable practices. (AI 105, 108)
- N 13.2 Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas. (AI 105, 108)
- N 13.3 Condition subdivision approval adjacent to developed/occupied noise-sensitive land uses (see policy N 1.3) by requiring the developer to submit a construction-related noise mitigation plan to the County for review and approval prior to issuance of a grading permit. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of this project, through the use of such methods as:
- a. Temporary noise attenuation fences;
  - b. Preferential location of equipment; and
  - c. Use of current noise suppression technology and equipment. (AI 107)
- N 13.4 Require that all construction equipment utilizes noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. (AI 105, 108)

### Building and Design Techniques

#### Policies:

- N 14.1 Enforce the California Building Standards that sets standards for building construction to mitigate interior noise levels to the tolerable 45 CNEL limit. These standards are utilized in conjunction with the Uniform Building Code by the County's Building Department to ensure that noise protection is provided to the public. Some design features may include extra-dense insulation, double-paned windows, and dense construction materials.



- N 14.2 Continue to develop effective strategies and mitigation measures for the abatement of noise hazards reflecting effective site design approaches and state-of-the-art building technologies. (AI 108)
- N 14.3 Incorporate acoustic site planning into the design of new development, particularly large scale, mixed-use, or master-planned development, through measures which may include:
- Separation of noise-sensitive buildings from noise-generating sources.
  - Use of natural topography and intervening structure to shield noise-sensitive land uses.
  - Adequate sound proofing within the receiving structure. (AI 106)
- N 14.4 Consider and, when necessary, to lower noise to acceptable limits, require noise barriers and landscaped berms. (AI 108)
- N 14.5 Consider the issue of adjacent residential land uses when designing and configuring all new, non-residential development. Design and configure on-site ingress and egress points that divert traffic away from nearby noise-sensitive land uses to the greatest degree practicable. (AI 106, 107)
- N 14.6 Prevent the transmission of excessive and unacceptable noise levels between individual tenants and businesses in commercial structures and between individual dwelling units in multi-family residential structures. (AI 105, 108)
- N 14.7 Assist the efforts of local homeowners living in high noise areas to noise attenuate their homes through funding assistance and retrofitting program development, as feasible. (AI 105, 108)
- N 14.8 Review all development applications for consistency with the standards and policies of the Noise Element of the General Plan.
- N 14.9 Mitigate 600 square feet of exterior space to 65 dB CNEL when new development is proposed on residential parcels of 1 acre or greater.



Non-habitable areas within a home include:

- kitchens
- bathrooms
- hallways
- garages
- closets
- utility rooms
- laundry rooms

### Mixed Use

#### Policies:

- N 15.1 Minimize the potential adverse noise impacts associated with the development of mixed-use structures where residential units are located above or adjacent to commercial uses. (AI 106, 107, 108)
- N 15.2 Require that commercial and residential mixed-use structures minimize the transfer or transmission of noise and vibration from the commercial land use to the residential land use. (AI 105)

- N 15.3 Minimize the generation of excessive noise level impacts from entertainment and restaurant/bar establishments into adjacent residential or noise-sensitive uses. (AI 105, 107)

## Vibration

Another community annoyance related to noise is vibration. As with noise, vibration can be described by both its amplitude and frequency. Amplitude may be characterized by displacement, velocity, and/or acceleration. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration.

Vibration can be felt outdoors, but the perceived intensity of vibration impacts are much greater indoors, due to the shaking of the structure. Some of the most common sources of vibration come from trains and/or transit vehicles, construction equipment, airplanes, and large vehicles. Several land uses are especially sensitive to vibration, and therefore have a lower vibration threshold. These uses include, but are not limited to, concert halls, hospitals, libraries, vibration-sensitive research operations, residential areas, schools, and offices.

Table N-3, Human Reaction to Typical Vibration Levels, presents the human reaction to various levels of peak particle velocity. Typical construction vibrations fall in the 10 to 30 Hz range and usually occur around 15 Hz. Traffic vibrations exhibit a similar range of frequencies. However, due to their suspension systems, city buses often generate frequencies around 30 Hz at high vehicle speeds. It is more uncommon, but possible, to measure traffic frequencies above 30 Hz.



**Amplitude**-the distance that a vibrating particle travels from a fixed point.

**Frequency**-the number of wave cycles that occur in 1 second.

**Hertz (Hz)**-the unit by which frequency is measured.

**Displacement**-a measure of the distance that a vibrated particle travels from its original position.

**Velocity**-the rate of speed at which particles move in inches per second or millimeters per second.

**Acceleration**-the rate of change in velocity with respect to time.

**Table N-3:  
Human Reaction to Typical Vibration Levels**

Vibration Level Peak Particle Velocity (inches/second)	Human Reaction
0.0059-0.0188	Threshold of perception, possibility of intrusion
0.0787	Vibrations readily perceptible
0.0984	Continuous vibration begins to annoy people
0.1968	Vibrations annoying to people in buildings
0.3937-0.5905	Vibrations considered unpleasant when continuously subjected and unacceptable by some walking on bridges

Source: Caltrans, 1992

### Policies:

- N 16.1 Restrict the placement of sensitive land uses in proximity to vibration-producing land uses. (AI 105)
- N 16.2 Consider the following land uses sensitive to vibration:

- Hospitals;
- Residential areas;
- Concert halls;
- Libraries;
- Sensitive research operations;
- Schools; and
- Offices

N 16.3 Prohibit exposure of residential dwellings to perceptible ground vibration from passing trains as perceived at the ground or second floor. Perceptible motion shall be presumed to be a motion velocity of 0.01 inches/second over a range of 1 to 100 Hz.

## Noise Information Management

Current and projected noise data and maps for Riverside County require constant updating and review in order for the information to remain correct as well as accurate. Currently, there is no central noise information database available for Riverside County staff or residents to reference when noise inquiries arise. This information is necessary and should be easily accessible when reviewing potential development plans, building a new home, siting an industrial area, evaluating circulation routes, or conducting other advanced planning activities. The following policies guide the County of Riverside to create a database, or central location, where up-to-date information can be accessed by Riverside County Staff or residents.

### Mapping

#### Policies:



Please see **Table N-1** for more information in order to determine a noise threshold necessary for creating a noise database.

- N 17.1 Identify, quantify, and map noise producers and provide noise contour diagrams as is practical. (AI 109)
- N 17.2 Identify and map noise-sensitive land uses throughout the county. (AI 109)
- N 17.3 Identify and map point-source noise producers such as surface mines, wind turbines, manufacturing plants, truck transfer stations, active recreational facilities, and amphitheaters. (AI 109)

### Noise Data Management

#### Policies:

N 18.1 Maintain baseline information, on an ongoing basis, regarding ambient and stationary noise sources. (AI 105)

- N 18.2 Monitor and update available data regarding the community's existing and projected ambient stationary noise levels.
- N 18.3 Assure that areas subject to noise hazards are identified, quantified, and mapped in a form that is available to decision makers. (AI 109)
- N 18.4 Develop and maintain a detailed, comprehensive noise data base. (AI 106)
- N 18.5 Develop and update county noise inventories using the following steps.
- a. Identify noise sources and noise-sensitive land uses
  - b. Continue to identify various agency responsibilities, review noise complaint files, and conduct noise surveys and monitoring, as needed.
- N 18.6 Identify those areas of the county affected by high noise levels. (AI 106, 107, 109)
- N 18.7 Evaluate current land uses to identify potential noise conflict areas. (AI 106, 107, 109)
- N 18.8 Gather activity operations' data of noise sources; prepare analytical noise exposure models to develop existing and projected noise contours around major noise sources down to 50 CNEL. (AI 109)
- N 18.9 Encourage greater involvement of other County departments in the identification, measurement, and reduction of noise hazards throughout the county, including: Building and Safety Department, Aviation Department, and the Department of Public Health-Office of Industrial Hygiene.

### Public Noise Information

#### Policies:

- N 19.1 Provide information to the public regarding the health effects of high noise levels and means of mitigating such levels. (AI 109)
- N 19.2 Cooperate with industry to develop public information programs on noise abatement. (AI 108)
- N 19.3 Condition that prospective purchasers or end users of property be notified of overflight, sight, and sound of routine aircraft operations by all effective means, including:
- a. requiring new residential subdivisions that are located within the 60 CNEL contour or are subject to overflight, sight, and sound of aircraft from any airport, to have such information included in the State of California Final Subdivision Public Report.
  - b. requiring that Declaration and Notification of Aircraft Noise and Environmental Impacts be recorded and made available to prospective purchasers or end users of property located within the 60 CNEL noise contour for any airport or air station or is subject to routine aircraft overflight. (AI 109)

- N 19.4 Promote increased awareness concerning the effects of noise and suggest methods by which the public can be of assistance in reducing noise.
- N 19.5 Require new developments that have the potential to generate significant noise impacts to inform impacted users on the effects of these impacts during the environmental review process. (AI 106, 107)

## Appendix

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## Appendix H Traffic Impact Analysis



April 2017 | Technical Report

# TRAFFIC IMPACT ANALYSIS

Temecula Valley Charter School

*Prepared for:*

**Temecula Valley Charter School**

Contact: Mark Horn, Board President  
35755 Abelia Street  
Winchester, California 92596  
951.294.6780

*Prepared by:*

**PlaceWorks**

Contact: Fernando Sotelo, PE, PTP, Senior Associate  
3 MacArthur Place, Suite 1100  
Santa Ana, California 92707  
714.966.9220  
info@placeworks.com  
www.placeworks.com

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