

APPENDIX E2
PERCOLATION TEST



Sladden Engineering

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January 14, 2022

Project No. 444-21106
22-01-005

CEG Construction, Inc.
7901 Crossway Drive
Pico Rivera, California 90660-4449

Project: Proposed Allen Industrial Facility
309 West Allen Avenue
San Dimas, California

Subject: Percolation/Infiltration Testing for On-Site Storm Water Management

Ref: Geotechnical Investigation report prepared by Sladden Engineering dated January 14, 2022; Project No. 444-21106, Report No. 22-01-001.

In accordance with your request, we have performed percolation/infiltration testing on the subject site to evaluate the infiltration potential of the near surface soil to assist in storm water management system design. It is our understanding that on-site storm water retention/infiltration is proposed for the project.

Percolation testing was performed on December 8, 2021 within two (2) shallow test bores excavated on the site. Testing was performed at depths of approximately 5 & 10 feet below existing grade for Test Hole BH-2/P-1 and Test Hole BH-3/P-2, respectively. The approximate locations of the tests are indicated on the attached Borehole Location Photograph (Figure 3). Testing was performed by placing water within the test bores and recording the drop in the water surface with time. Testing was performed in general accordance with the *United States Bureau of Reclamation (BOR) Procedure 7300-89 (1999)*. Test results are summarized in the following table.

PERCOLATION/INFILTRATION TEST RESULTS

Test Number No.	Depth (ft)	Preadjusted Percolation Rate (in/hr)	Design Infiltration Rate (in/hr)
BH-2/P-1	5.00	120.00	34.29
BH-3/P-2	10.00	120.00	34.29

The preadjusted percolation rates determined represent the ultimate field rates that do not include a safety factor. The design infiltration rate utilizes a reduction factor that was determined in accordance with Los Angeles County guidelines for storm water management.

January 14, 2022

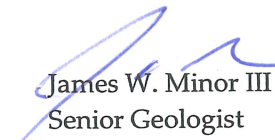
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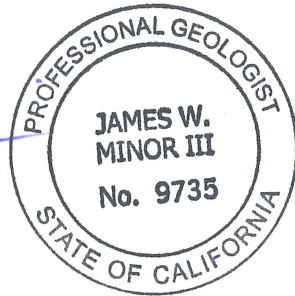
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Groundwater was not encountered within our exploratory boreholes conducted during our exploratory investigation to the maximum explored depth of 17.0 feet bgs. Groundwater levels should not be a factor in the design of the storm water retention/infiltration system(s).

If you have any questions regarding this memo, please contact the undersigned.

Respectfully submitted,
SLADDEN ENGINEERING


James W. Minor III
Senior Geologist



Brett L. Anderson
Principal Engineer

Copies: 2 / Addressee

FIGURES

SITE LOCATION MAP
REGIONAL GEOLOGIC MAP
BOREHOLE LOCATION PHOTOGRAPH
SITE PLAN



Source: USGS (2012)

SITE LOCATION MAP

FIGURE

1



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Project Number:

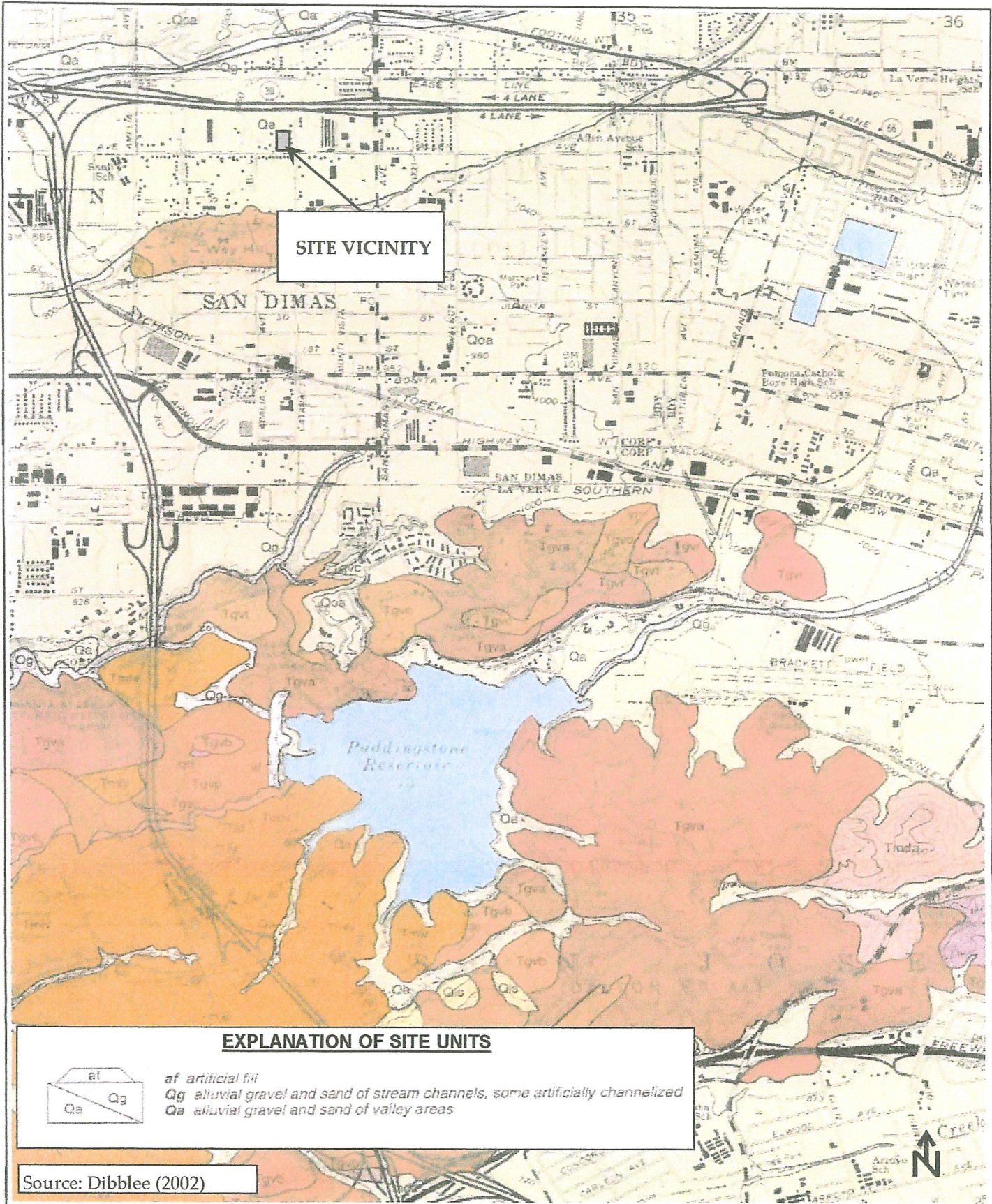
444-21106

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22-01-005

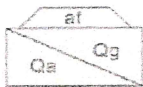
Date:

January 14, 2022



SITE VICINITY

EXPLANATION OF SITE UNITS



af artificial fill
Qg alluvial gravel and sand of stream channels, some artificially channelized
Qa alluvial gravel and sand of valley areas

Source: Dibblee (2002)



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REGIONAL GEOLOGIC MAP

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FIGURE

2



BH-6/ P-2

Approximate Borehole Location/ Approximate Percolation Test Location



Source: Google Earth (2022)



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BOREHOLE LOCATION PHOTOGRAPH

Project Number:	444-21106
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FIGURE

3

APPENDIX A

BORING LOGS

LOS ANGELES COUNTY PERCOLATION TEST DATA SHEETS



BORE LOG

Drill Rig: Mobil B-61 Date Drilled: 12/1/2021

Elevation: 965 Ft (MSL) Boring No: BH-1

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description
X	8/9/25						2		Silty Sand (SM); yellowish brown, dry, fine-to-coarse grained with gravel and cobbles (Fill).
							4		Gravelly Sand (SW); yellowish brown, dry, medium dense, fine-to-coarse grained with cobbles (Qa).
							6		Practical Auger Refusal at ~ 4.0 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.
							8		
							10		
							12		
							14		
							16		
							18		
							20		
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED ALLEN INDUSTRIAL FACILITY
309 WEST ALLEN AVENUE, SAN DIMAS

Project No: 444-21106

Report No: 22-01-005

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BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	12/1/2021
Elevation:	965 Ft (MSL)	Boring No:	BH-2/P-1

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description
	25/17/16			7.6	1.4		2		Silty Sand (SM); yellowish brown, dry, fine-to-coarse grained with gravel and cobbles (Fill).
						4		Gravelly Sand (SW); yellowish brown, dry, medium dense, fine-to-coarse grained with cobbles (Qa).	
						6		Terminated at ~ 5.0 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered. Borehole Cased with Perforated Pipe for Percolation Testing.	
							8		
							10		
							12		
							14		
							16		
							18		
							20		
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		



BORE LOG

Drill Rig: Mobil B-61 Date Drilled: 12/1/2021

Elevation: 965 Ft (MSL) Boring No: BH-3/P-2

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description
							2		Silty Sand (SM); yellowish brown, dry, fine-to-coarse grained with gravel and cobbles (Fill).
	9/14/15			4.7	1.4	118.7	4		Gravelly Sand (SW); yellowish brown, dry, medium dense, fine-to-coarse grained with cobbles (Qa).
	18/19/22			8.1	1.7	127.7	6		Gravelly Sand (SW); yellowish brown, dry, medium dense, fine-to-coarse grained with cobbles (Qa).
	14/16/17			8.3	1.4		10		Gravelly Sand (SW); yellowish brown, dry, dense, fine-to-coarse grained with cobbles (Qa).
							12		Practical Auger Refusal at ~ 10.0 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered. Borehole Cased with Perforated Pipe for Percolation Testing.
							14		
							16		
							18		
							20		
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED ALLEN INDUSTRIAL FACILITY
309 WEST ALLEN AVENUE, SAN DIMAS



BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	12/1/2021
Elevation:	965 Ft (MSL)	Boring No:	BH-4

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description
							2		Silty Sand (SM); yellowish brown, dry, fine-to-coarse grained with gravel and cobbles (Fill).
	12/12/12			4.0	2.2	123.1	4		Gravelly Sand (SW); yellowish brown, dry, fine-to-coarse grained with cobbles (Qa).
							6		Gravelly Sand (SW); yellowish brown, dry, medium dense, fine-to-coarse grained with cobbles (Qa).
							8		
	12/25/21			4.7	2.9		10		Gravelly Sand (SW); yellowish brown, dry, dense, fine-to-coarse grained with cobbles (Qa).
							12		
							14		Practical Auger Refusal at ~ 13.0 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.
							16		
							18		
							20		
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:



BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	12/1/2021
Elevation:	965 Ft (MSL)	Boring No:	BH-5

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description
	8/9/9			3.8	1.1		2		Silty Sand (SM); yellowish brown, dry, fine-to-coarse grained with gravel and cobbles (Fill).
							4		Gravelly Sand (SW); yellowish brown, dry, fine-to-coarse grained with cobbles (Qa).
							6		Gravelly Sand (SW); yellowish brown, dry, medium dense, fine-to-coarse grained with cobbles (Qa).
	50-6"			3.7	1.2		8		Gravelly Sand (SW); yellowish brown, dry, very dense, fine-to-coarse grained with cobbles (Qa).
							10		Gravelly Sand (SW); yellowish brown, dry, very dense, fine-to-coarse grained with cobbles (Qa).
							12		
							14		
							16		Practical Auger Refusal at ~ 14.0 Feet bgs.
							18		No Bedrock Encountered.
							20		No Groundwater or Seepage Encountered.
							22		
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED ALLEN INDUSTRIAL FACILITY
309 WEST ALLEN AVENUE, SAN DIMAS

Project No: 444-21106
Report No: 22-01-005



BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	12/1/2021
Elevation:	965 Ft (MSL)	Boring No:	BH-6

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density	Depth (Feet)	Graphic Lithology	Description
	13/13/17	1	1	22.4	3.8	105.9	2		Silty Sand (SM); yellowish brown, dry, fine-to-coarse grained with gravel and cobbles (Fill).
	17/35/27			5.8	2.1	127.9	4		Gravelly Sand (SW); yellowish brown, dry, medium dense, fine-to-coarse grained with cobbles (Qa).
	12/18/20			8.4	2.3		6		Gravelly Sand (SW); yellowish brown, dry, dense, fine-to-coarse grained with cobbles (Qa).
	16/17/23			4.4	2.1	123.1	8		Gravelly Sand (SW); yellowish brown, dry, dense, fine-to-coarse grained with cobbles (Qa).
							10		Practical Auger Refusal at ~ 17.0 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.
							12		
							14		
							16		
							18		
							20		
							22		
							24		
							26		
							28		
							30		
							32		
							34		
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							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED ALLEN INDUSTRIAL FACILITY
309 WEST ALLEN AVENUE, SAN DIMAS

Project No:	444-21106
Report No:	22-01-005

LOS ANGELES COUNTY - BOREHOLE PERCOLATION TEST DATA SHEET

Project: 309 W. Allen Ave., San Dimas
 Job No. : 444-21106
 Date: 12/8/2021
 Test Hole: BH-2/P-1
 Depth of Test H 5.0 feet
 Tested by: R.F.

READING*	TIME	TIME INTERVAL	DEPTH (ft)	INITIAL W (in)	FINAL W (in)	ΔW (in)
A	TIMER	30	5	20	0.00	20.00
B	TIMER	30	5	20	0.00	20.00
C	TIMER	30	5	20	0.00	20.00

*Readings A and B (Determine if Presoak is required); >12 inches water

If all water seeps away in 30 mins, **no presoak**; proceed to "C"

If water remains, presoak for 4 hours.

*Reading C (Determine Test Interval); >12 inches water

if all water seeps in 30 min, fill to a minimum of 12 inches but less than presoak water level; 8 (10 min) readings or until stabilized rate is obtained.

if water remains in 30 min, fill to a minimum of 12 inches but less than presoak water level; 8 (30 min) readings or until stabilized rate is obtained

READING*	TIME	TIME INTERVAL	DEPTH (ft)	INITIAL W (in)	FINAL W (in)	ΔW (in)
1	TIMER	10	5	20.00	0.00	20.00
2	TIMER	10	5	20.00	0.00	20.00
3	TIMER	10	5	20.00	0.00	20.00
4	TIMER	10	5	20.00	0.00	20.00
5	TIMER	10	5	20.00	0.00	20.00
6	TIMER	10	5	20.00	0.00	20.00
7	TIMER	10	5	20.00	0.00	20.00
8	TIMER	10	5	20.00	0.00	20.00

Preadjusted Percolation Rate: 120.00 in/hr
 Reduction Factor (R_f): 3.50 in/hr
 Corrected Infiltration Rate: 34.29 in/hr

LOS ANGELES COUNTY - BOREHOLE PERCOLATION TEST DATA SHEET

Project: 309 W. Allen Ave., San Dimas
 Job No. : 444-21106
 Date: 12/8/2021
 Test Hole: BH-3/ P-2
 Depth of Test 10 feet
 Tested by: R.F.

READING*	TIME	TIME INTERVAL	DEPTH (ft)	INITIAL W (in)	FINAL W (in)	ΔW (in)
A	TIMER	30	10	20.00	0.00	20.00
B	TIMER	30	10	20.00	0.00	20.00
C	TIMER	30	10	20.00	0.00	20.00

*Readings A and B (Determine if Presoak is required); >12 inches water

If all water seeps away in 30 mins, **no presoak**; proceed to "C"

If water remains, presoak for 4 hours.

*Reading C (Determine Test Interval); >12 inches water

if all water seeps in 30 min, fill to a minimum of 12 inches but less than presoak water level; 8 (10 min) readings or until stabilized rate is obtained.

if water remains in 30 min, fill to a minimum of 12 inches but less than presoak water level; 8 (30 min) readings or until stabilized rate is obtained

READING*	TIME	TIME INTERVAL	DEPTH (ft)	INITIAL W (in)	FINAL W (in)	ΔW (in)
1	TIMER	10	10	20.00	0.00	20.00
2	TIMER	10	10	20.00	0.00	20.00
3	TIMER	10	10	20.00	0.00	20.00
4	TIMER	10	10	20.00	0.00	20.00
5	TIMER	10	10	20.00	0.00	20.00
6	TIMER	10	10	20.00	0.00	20.00
7	TIMER	10	10	20.00	0.00	20.00
8	TIMER	10	10	20.00	0.00	20.00

Preadjusted Percolation Rate: 120.00 in/hr

Reduction Factor (R_f): 3.50

Corrected Infiltration Rate: 34.29 in/hr