Riverside County / Environmental

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PETRA

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Engineers, Geologists
Environmental Scientists

September 28, 2012
J.N. 291-12

Mr. Jonathan Weldy
MERIDIAN LAND DEVELOPMENT
19153 Town Center Drive, 106
Apple Valley, California 92308

Subject: **Results for Field Infiltration Tests, *Casa Blanca Ranch Project*, North of Oak Glen Road, City of Yucaipa, San Bernardino County, California**

Dear Mr. Weldy:

This letter provides a summary of the field infiltration tests conducted by Petra for the proposed Casa Blanca Ranch residential development in the City of Yucaipa, California. The purpose of the testing was to determine the absorption rate of the in-situ older alluvial material that constitutes the mesas.

A total of four tests were performed in the native soils, typically classified as silty sand with clay, within the four quadrants constituting the site. The surface of the areas had been tilled, so a backhoe was used to excavate the disturbed surface soils, exposing relatively undisturbed formational materials deemed suitable for testing. The test pits were dug to depths of 1-1/2 to 2-1/2 feet below existing grade. The locations of the infiltration tests, designated DRI-1 through DRI-4, are identified on the attached Infiltration Test Location Plan, Figure 1.

The infiltration tests were conducted using a dual-ring-infiltrometer test apparatus in general accordance with ASTM D3385-09, results of which are attached. The test results, expressed as the absorption rate in inches per hour, are summarized in the following table.

Test No.	Location	Absorption Rate
DRI-1	Southwest Quadrant	3.0 in/hr
DRI-2	Northeast Quadrant	3.2 in/hr
DRI-3	Southeast Quadrant	4.6 in/hr
DRI-4	Northwest Quadrant	1.2 in/hr

We trust this information meets with your needs at this time. Should you have any questions, please do not hesitate to call.

Respectfully submitted,

PETRA GEOTECHNICAL, INC.

For

Grayson R. Walker, GE
Principal Engineer
GE 871

REGISTERED PROFESSIONAL ENGINEER
GRAYSON R. WALKER
GE 871
GEOTECHNICAL
STATE OF CALIFORNIA

Attachments: Infiltration Test Location Plan, Figure 1
Infiltration Test Results, Test Nos. DRI-1 through DRI-4

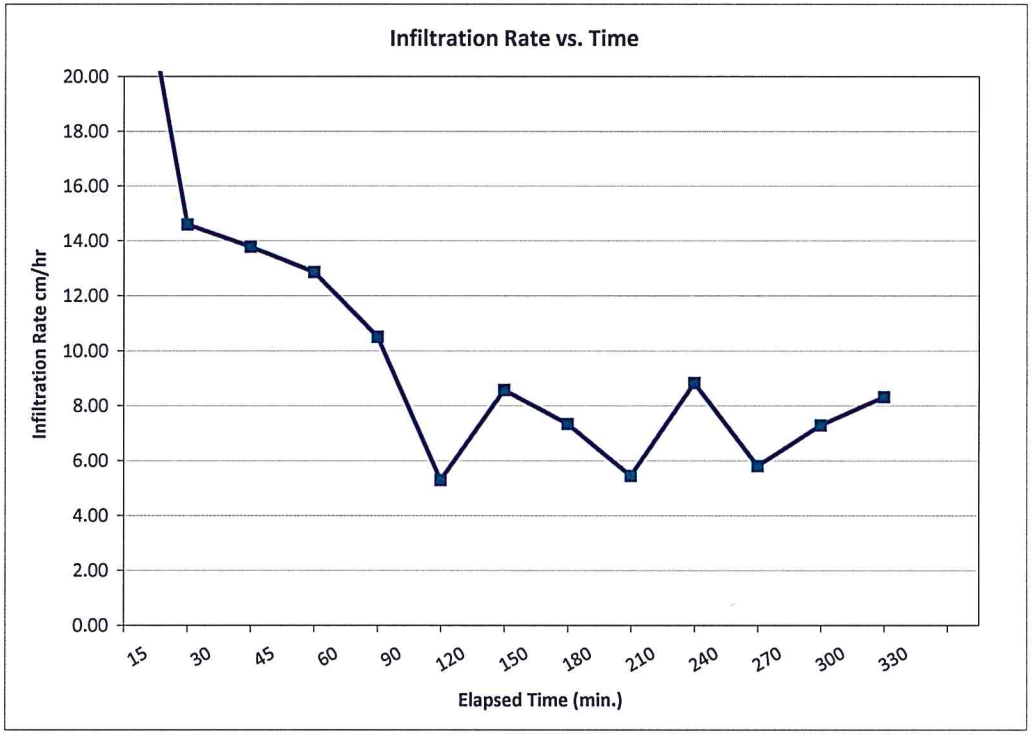
Distribution: (3) Addressee (electronic and hard copy)
(1) AEI-CASC (electronic, only)
Attention: David Cooke

Casa Blanca Ranch Site
JN 291-12
Tested by L. Holmes, September 18,2012

Infiltration Test DRI-1

Double-Ring Infiltrometer Test, ASTM D3385-09

Time (m)	Δ Time (m)	Elapsed Time (m)	Inner Ring (cm)	Volume Inner (cm^3)	Rate Inner (cm/h)
10:24	15		57.4	4771.3	27.55
10:39		15	30.4		
10:39	15		58.4	2527.0	14.59
10:54		30	44.1		
10:54	15		58.2	2385.6	13.77
11:09		45	44.7		
11:09	15		57.3	2226.6	12.86
11:24		60	44.7		
11:24	30		58.3	3640.3	10.51
11:54		90	37.7		
11:54	30		58.4	1837.8	5.31
12:24		120	48.0		
12:24	30		57.8	2968.8	8.57
12:54		150	41.0		
12:54	30		59.3	2544.7	7.35
1:24		180	44.9		
1:24	30		58.4	1890.8	5.46
1:54		210	47.7		
1:54	30		59.3	3057.2	8.83
2:24		240	42.0		
2:24	30		57.0	2014.5	5.82
2:54		270	45.6		
2:54	30		58.6	2527.0	7.30
3:24		300	44.3		
3:24	30		58.8	2880.4	8.32
3:54		330	42.5		



Area of Inner Ring (cm^2)
692.8

Area of Annular Space (cm^2)
2120.5

Infiltration Rate	**7.5**	**cm/hr**
	2.1E-03	**cm/sec**
	3.0	**in/hr**
	44	**gal/day/ft^2**

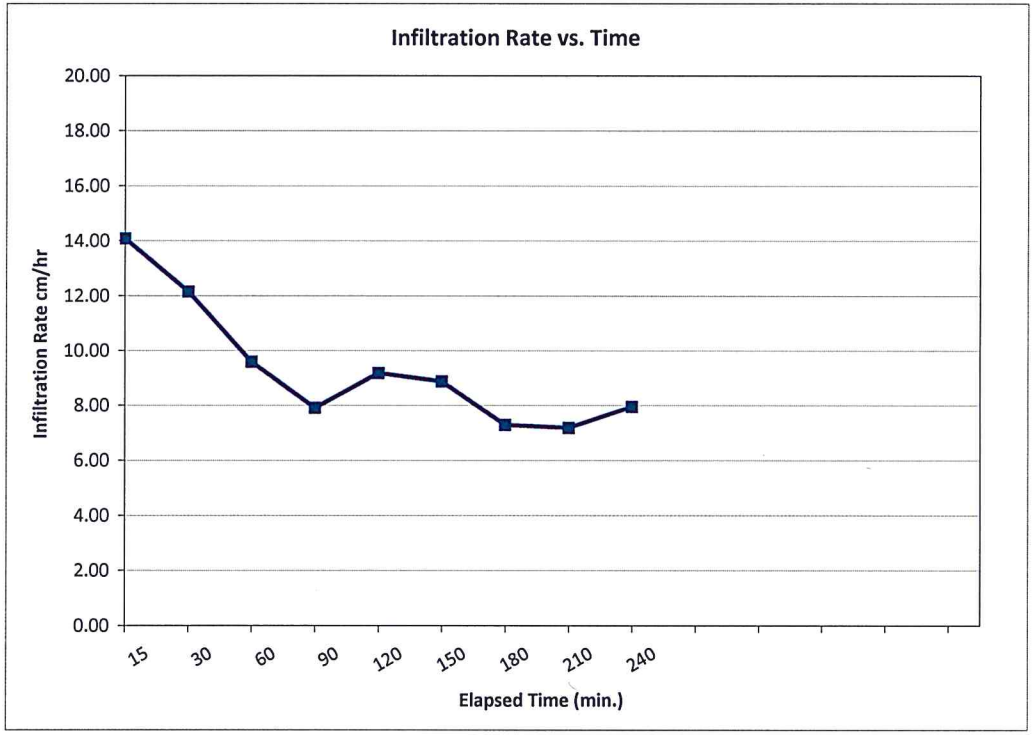
PETRA GEOTECHNICAL, INC.

Casa Blanca Ranch Site
JN 291-12
Tested by L. Holmes, September 19,2012

Infiltration Test DRI-2

Double-Ring Infiltrometer Test, ASTM D3385-09

Time (m)	Δ Time (m)	Elapsed Time (m)	Inner Ring (cm)	Volume Inner (cm^3)	Rate Inner (cm/h)
9:20	15		58.6	2438.7	14.08
9:35		15	44.8		
9:35	15		57.7	2102.9	12.14
9:50		30	45.8		
9:50	30		58.5	3322.2	9.59
10:20		60	39.7		
10:20	30		57.7	2739.1	7.91
10:50		90	42.2		
10:50	30		58.0	3180.9	9.18
11:20		120	40.0		
11:20	30		57.8	3074.8	8.88
11:50		150	40.4		
11:50	30		58.3	2527.0	7.30
12:20		180	44.0		
12:20	30		58.8	2491.7	7.19
12:50		210	44.7		
12:50	30		58.2	2756.7	7.96
1:20		240	42.6		



Area of Inner Ring (cm^2)
692.8

Area of Annular Space (cm^2)
2120.5

Infiltration Rate	**8.1**	**cm/hr**
	2.3E-03	**cm/sec**
	3.2	**in/hr**
	48	**gal/day/ft^2**

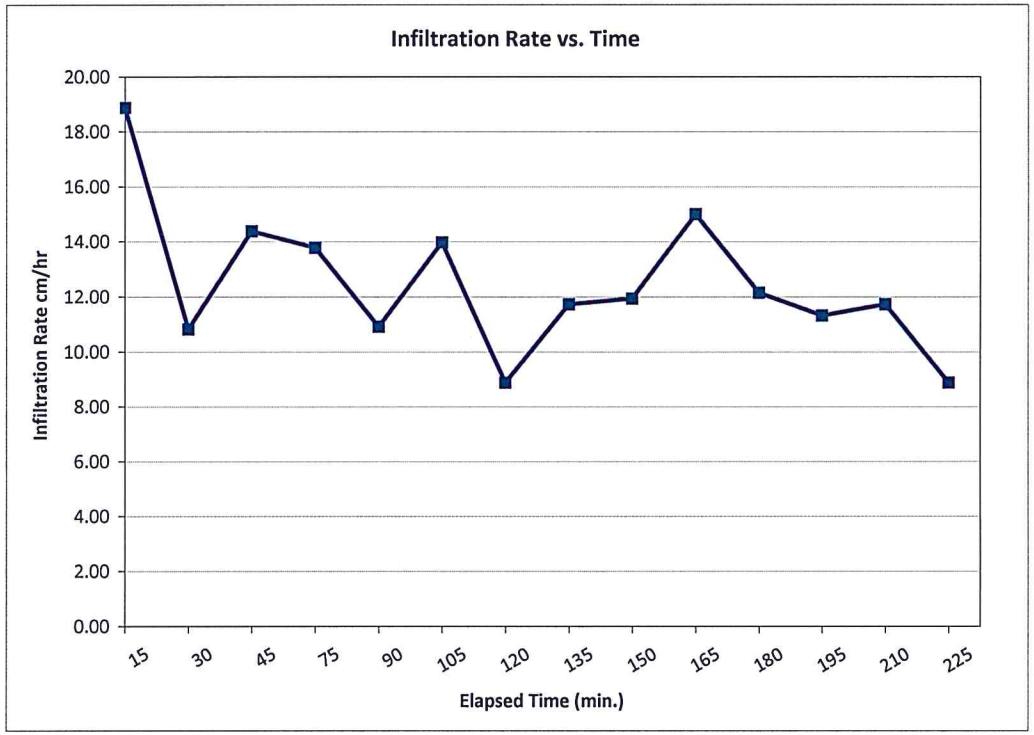
PETRA GEOTECHNICAL, INC.

Casa Blanca Ranch Site
JN 291-12
Tested by L. Holmes, September 20,2012

Infiltration Test DRI-3

Double-Ring Infiltrometer Test, ASTM D3385-09

Time (m)	Δ Time (m)	Elapsed Time (m)	Inner Ring (cm)	Volume Inner (cm^3)	Rate Inner (cm/h)
8:31	15		58.0	3269.2	18.88
8:46		15	39.5		
8:46	15		58.9	1873.2	10.82
9:01		30	48.3		
9:01	15		59.2	2491.7	14.39
9:16		45	45.1		
9:16	30		59.4	4771.3	13.77
9:46		75	32.4		
9:46	15		58.0	1890.8	10.92
10:01		90	47.3		
10:01	15		59.3	2421.0	13.98
10:16		105	45.6		
10:16	15		58.4	1537.4	8.88
10:31		120	49.7		
10:31	15		58.9	2032.2	11.73
10:46		135	47.4		
10:46	15		59.2	2067.6	11.94
11:01		150	47.5		
11:01	15		58.2	2597.7	15.00
11:16		**165**	43.5		
11:38	15		59.3	2102.9	12.14
11:53		180	47.4		
11:53	15		59.3	1961.5	11.33
12:08		195	48.2		
12:08	15		59.3	2032.2	11.73
12:23		210	47.8		
12:23			57.9	1537.4	8.88
12:38	15	225	49.2		
12:38			58.9	1484.4	8.57
12:53	15	240	50.5		



Area of Inner Ring (cm^2)
692.8

Area of Annular Space (cm^2)
2120.5

Infiltration Rate	**11.7**	**cm/hr**
	3.3E-03	**cm/sec**
	4.6	**in/hr**
	69	**gal/day/ft^2**

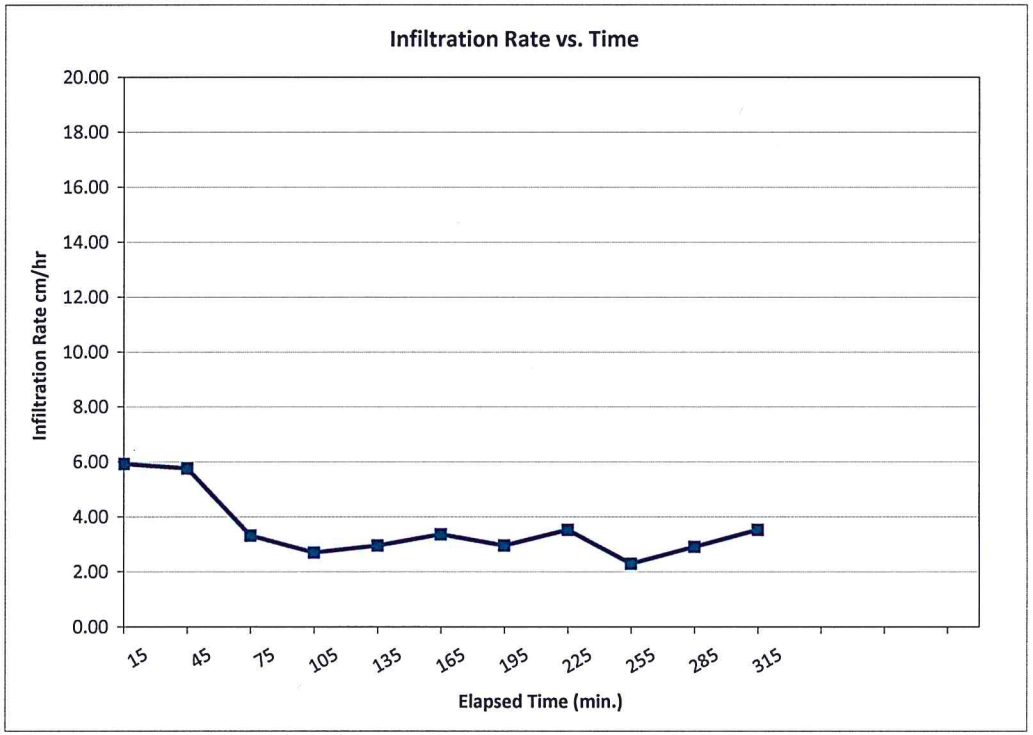
PETRA GEOTECHNICAL, INC.

Casa Blanca Ranch Site
JN 291-12
Tested by L. Holmes, September 21,2012

Infiltration Test DRI-4

Double-Ring Infiltrometer Test, ASTM D3385-09

Time (m)	Δ Time (m)	Elapsed Time (m)	Inner Ring (cm)	Volume Inner (cm^3)	Rate Inner (cm/h)
9:00	15		59.3	1024.9	5.92
9:15		15	53.5		
9:15	30		58.8	1996.9	5.76
9:45		45	47.5		
9:45	30		59.2	1148.6	3.32
10:15		75	52.7		
10:15	30		58.5	936.6	2.70
10:45		105	53.2		
10:45	30		58.9	1024.9	2.96
11:15		135	53.1		
11:15	30		58.9	1166.3	3.37
11:45		165	52.3		
11:45	30		59.0	1024.9	2.96
12:15		195	53.2		
12:15	30		59.3	1219.3	3.52
12:45		225	52.4		
12:45	30		58.9	795.2	2.30
1:15		255	54.4		
1:15	30		59.3	1007.3	2.91
1:45		**285**	53.6		
1:45	30		58.5	1219.3	3.52
2:15		315	51.6		

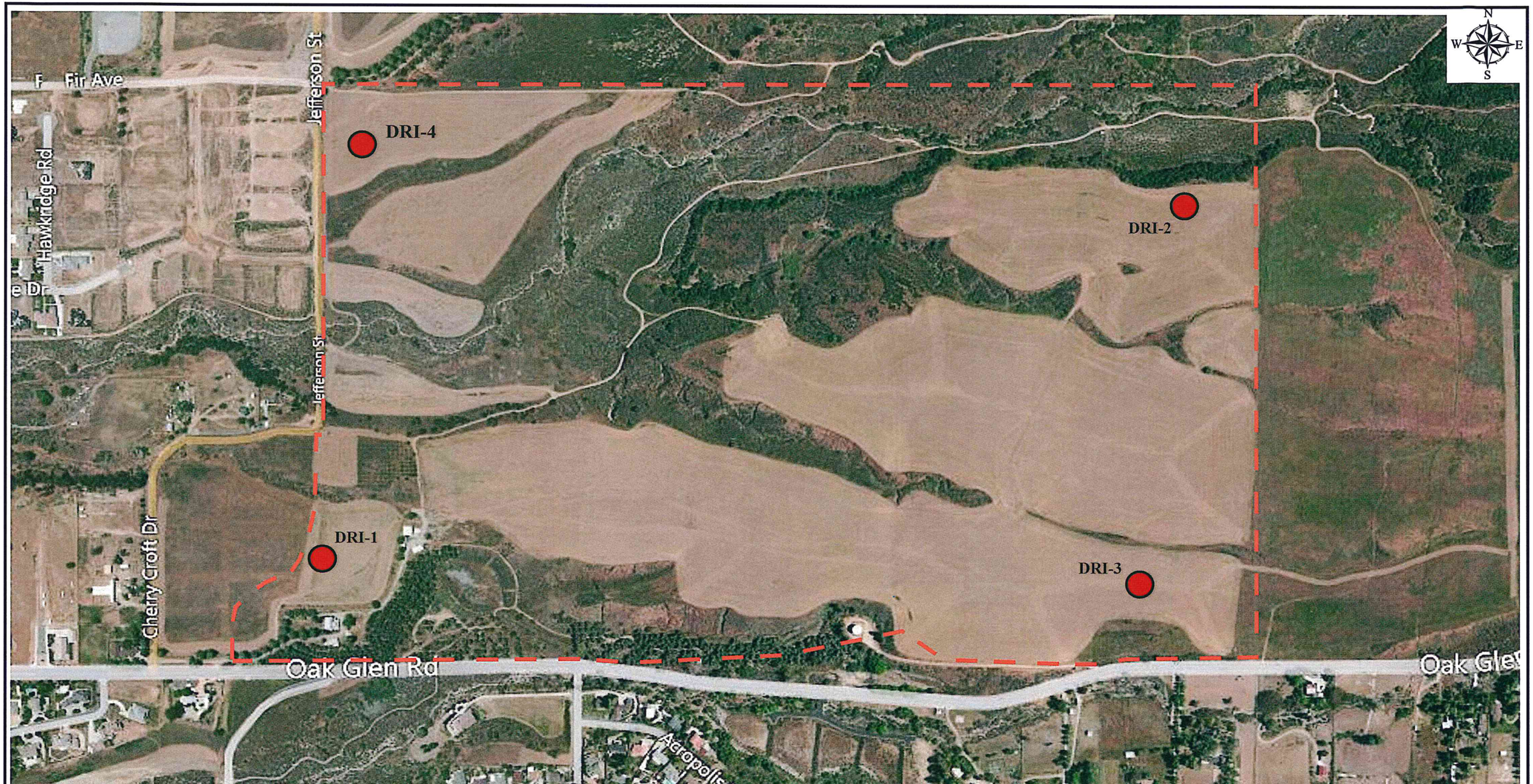


Area of Inner Ring (cm^2)
692.8

Area of Annular Space (cm^2)
2120.5

Infiltration Rate	**3.1**	**cm/hr**
	8.6E-04	**cm/sec**
	1.2	**in/hr**
	18	**gal/day/ft^2**

PETRA GEOTECHNICAL, INC.



EXPLANATION

Approximate Location of Site Boundry

DRI-4 Approximate Location of Double-Ring Infiltrometer Test

Reference: Bing Maps

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Temecula, California 92591
Telephone: (951) 600-9271
COSTA MESA TEMECULA PALM DESERT SAN DIEGO SANTA CLARITA

INFILTRATION TEST LOCATION PLAN

Casa Blanca Ranch Project
Oak Glen Road and Jefferson Street
City of Yucaipa, California

DATE: Sept. 2012	J.N.: 291-12	Figure 1
DWG BY: DLJ	SCALE: N/A	