Appendix D

PTS Laboratory Result

PTS Laboratories, Inc.

8100 Secura Way • Santa Fe Springs, CA 90670
Telephone (562) 347-2500 • Fax (562) 907-3610

May 12, 2014

Mohsen Mehran
Rubicon Engineering Corp.
12821 Newport Ave.
Tustin, CA 92780

Re: PTS File No: 44202
Physical Properties Data
Green Acres; 1073.01

Dear Mr. Mehran:

Please find enclosed report for Physical Properties analyses conducted upon samples received from your Green Acres; 1073.01 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. An electronic version of the report has previously been sent to your attention via the internet. The samples are currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories Inc. appreciates the opportunity to be of service. If you have any questions or require additional information, please contact Morgan Richards at (562) 347-2509.

Sincerely,
PTS Laboratories, Inc.

Michael Mark Brady, P.G.
District Manager

Encl.

PTS Laboratories

Project Name: Green Acres
Project Number: 1073.01

PTS File No: 44202
Client: Rubicon Engineering Corp.

TEST PROGRAM - 20140404

CORE ID	Depth ft.	Core Recovery ft.	Soil Properties Pkg.	Hydraulic Conductivity Pkg.					Comments
		Plugs:	Vert. 1"	Vert. 1"					
Date Received: 20140404									
RM-2-20	**20**	**1.00**	**x**						
RM-2-50	**50**	**0.50**	**x**						
RM-2-95	**95**	**1.00**							HOLD - per COC
RM-2-110	**110**	**0.50**		**x**					
RM-3-20	**20**	**1.00**	**x**						
RM-3-50	**50**	**0.50**	**x**						
RM-1-20	**20**	**1.00**	**x**						
RM-1-50	**50**	**0.50**	**x**						
TOTALS:	**12 cores**	**6.00**	**6**	**1**					**12**

Laboratory Test Program Notes

Contaminant identification: _____

Standard TAT for basic analysis is 10 business days.

Soil Properties Package: Native state permeability to air, total porosity, air-filled porosity, grain and bulk density, moisture content, total pore fluid saturation (water only).

Hydraulic Conductivity Package – Saturated Zone: Native-state permeability to water, total and air-filled porosity, grain and bulk density, moisture content, total pore fluid (water only) saturation.

Please contact laboratory if you would like the "HOLD" samples retained longer than 30 days.

PTS Laboratories

PTS File No: 44202
Client: Rubicon Engineering Corp.
Report Date: 05/12/14

PHYSICAL PROPERTIES DATA - SOIL PROPERTIES PACKAGE (VADOSE ZONE)

Project Name: Green Acres
Project No: 1073.01

		METHODS:	API RP 40 / ASTM D2216	API RP 40		API RP 40		API RP 40	API RP 40 25 PSI CONFINING STRESS
SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	MOISTURE CONTENT, % weight	DENSITY DRY BULK, g/cc	DENSITY GRAIN, g/cc	POROSITY, %Vb (2) TOTAL	POROSITY, %Vb (2) AIR-FILLED	TOTAL PORE FLUID SATURATIONS (3), % Pv	EFFECTIVE PERMEABILITY TO AIR (4), millidarcy
RM-2-20	N/A	V	5.7	1.52	2.64	42.3	33.6	20.5	2920
RM-2-50	N/A	V	16.3	1.33	2.53	47.3	25.6	45.8	5270
RM-3-20	N/A	V	9.1	1.67	2.65	36.8	21.6	41.3	2030
RM-3-50	N/A	V	6.5	1.51	2.66	43.0	33.2	22.8	4580
RM-1-20	N/A	V	21.3	1.51	2.66	43.4	11.2	74.1	69.9
RM-1-50	N/A	V	6.2	1.62	2.67	39.5	29.5	25.4	876

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.

(3) Fluid density used to calculate pore fluid saturations: Water = 0.9996 g/cc.

(4) Effective (Native) = With as-received pore fluids in place.

Vb = Bulk Volume, cc; Pv = Pore Volume, cc; Air = Nitrogen gas.

PTS Laboratories

PTS File No: 44202
Client: Rubicon Engineering Corp.
Report Date: 05/12/14

PHYSICAL PROPERTIES DATA - HYDRAULIC CONDUCTIVITY PACKAGE

Project Name: Green Acres
Project No: 1073.01

		METHODS:	API RP 40 / ASTM D2216	API RP 40		API RP 40		API RP 40	API RP 40; EPA 9100	
									25 PSI CONFINING STRESS	
SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	MOISTURE CONTENT, % weight	DENSITY		POROSITY, %Vb (2)		TOTAL PORE FLUID SATURATIONS (3), % Pv	EFFECTIVE (4,5) PERMEABILITY TO WATER, millidarcy	HYDRAULIC CONDUCTIVITY (4,5), cm/s
				DRY BULK, g/cc	GRAIN, g/cc	TOTAL	AIR-FILLED			
RM-2-110	N/A	V	15.9	1.67	2.30	27.6	1.0	96.3	6.14	6.28E-06

(1) Sample Orientation: H = horizontal; V = vertical; R = remold
(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.
(3) Fluid density used to calculate pore fluid saturations: Water = 0.9996 g/cc.
(4) Effective (Native) = With as-received pore fluids in place.
(5) Permeability to water and hydraulic conductivity measured at saturated conditions.
Vb = Bulk Volume, cc; Pv = Pore Volume, cc; ND = Not Detected
Water = filtered Laboratory Fresh (tap) or Site water.

PTS Laboratories, Inc.

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

COMPANY	Rubicon Engineering Corp.
ADDRESS	12821 Newport Ave.
CITY	Tustin, CA
ZIP CODE	92780
PROJECT MANAGER	Mohsen Mehran
email	mmehran@Rubiconeng.com
PROJECT NAME	Green Acres
PHONE NUMBER	(714) 573-0081
PROJECT NUMBER	1073.01
FAX NUMBER	(714) 573-0082
SITE LOCATION	4000 Malibu Canyon Rd. Malibu, CA
SAMPLER SIGNATURE	Peter Lee

PO#

TURNAROUND TIME
24 HOURS ☐ 5 DAYS ☐
72 HOURS ☐ NORMAL ☑

OTHER: _____

SAMPLE INTEGRITY (CHECK):
INTACT ✓ TEMP(F) 50

PTS QUOTE NO.

PTS FILE: 44202

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	DEPTH, FT	NUMBER OF SAMPLES	SOIL PROPERTIES PACKAGE	HYDRAULIC CONDUCTIVITY PACKAGE	PORE FLUID SATURATIONS PACKAGE	TCEQ/TNRCC PROPERTIES PACKAGE	CAPILLARITY PACKAGE	FLUID PROPERTIES PACKAGE	PHOTOLOG: CORE PHOTOGRAPHY	VAPOR TRANSPORT PACKAGE	POROSITY: TOTAL, AIR FILLED, WATER FILLED	POROSITY: EFFECTIVE, ASTM D425M	SPECIFIC GRAVITY, ASTM D854	BULK DENSITY (DRY), API RP40 or ASTM D2937	AIR PERMEABILITY, API RP40	HYDRAULIC CONDUCTIVITY, EPA9100/API RP40 or D5084	GRAIN SIZE DISTRIBUTION, ASTM D422 or 4464M	TOC: WALKLEY-BLACK	ATTERBERG LIMITS, ASTM D4318	VAPOR INTRUSION PACKAGE	FREE PRODUCT MOBILITY PACKAGE	COMMENTS
RM-2-20	3/31/14	0900	20	2	✓																			
RM-2-50	3/31/14	1000	50	1	✓																			
RM-2-95	3/31/14	1240	95	2																				HOLD
RM-2-110	3/31/14	1450	110	1		✓																		
RM-3-20	4/1/14	0930	20	2	✓																			
RM-3-50	4/1/14	1050	50	1	✓																			
RM-1-20	4/3/14	1115	20	2	✓																			
RM-1-50	4/3/14	1245	50	1	✓																			

1. RELINQUISHED BY	2. RECEIVED BY	3. RELINQUISHED BY	4. RECEIVED BY
Peter Lee			
COMPANY: Rubicon	COMPANY: PTS LABS	COMPANY	COMPANY
DATE: 4/4/14 TIME: 1150	DATE: 4/4/14 TIME: 11:50	DATE TIME	DATE TIME

PTS Laboratories, Inc.

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Telephone (562) 347-2500 • Fax (562) 907-3610

May 12, 2014

Mohsen Mehran
Rubicon Engineering Corp.
12821 Newport Ave.
Tustin, CA 92780

Re: PTS File No: 44216
Physical Properties Data
Green Acres; 1073.01

Dear Mr. Mehran:

Please find enclosed report for Physical Properties analyses conducted upon samples received from your Green Acres; 1073.01 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. An electronic version of the report has previously been sent to your attention via the internet. The samples are currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

PTS Laboratories Inc. appreciates the opportunity to be of service. If you have any questions or require additional information, please contact Morgan Richards at (562) 347-2509.

Sincerely,
PTS Laboratories, Inc.

Michael Mark Brady, P.G.
District Manager

Encl.

PTS Laboratories

Project Name: Green Acres
Project Number: 1073.01

PTS File No: 44216
Client: Rubicon Engineering Corp.

TEST PROGRAM - 20140411

CORE ID	Depth ft.	Core Recovery ft.	Soil Properties Pkg.	Hydraulic Conductivity Pkg.					Comments
		Plugs:	Vert. 1"	Vert. 1"					
Date Received: 20140411									
RM-1-86	**86**	**1.00**		**X**					
RM-4-20	**20**	**0.50**	**X**						
RM-4-50	**50**	**1.00**	**X**						
RM-4-120	**120**	**1.00**							HOLD - per COC
RM-4-130	**130**	**0.50**							HOLD - per COC
RM-4-140	**140**	**0.50**		**X**					
RM-5-20	**20**	**1.00**	**X**						
RM-5-50	**50**	**0.50**	**X**						
RM-5-140	**140**	**0.50**		**X**					
TOTALS:	**13 cores**	**6.50**	**4**	**3**					**13**

Laboratory Test Program Notes

Contaminant identification: _____

Standard TAT for basic analysis is 10 business days.

Soil Properties Package: Native state permeability to air, total porosity, air-filled porosity, grain and bulk density, moisture content, total pore fluid saturation (water only).

Hydraulic Conductivity Package – Saturated Zone: Native-state permeability to water, total and air-filled porosity, grain and bulk density, moisture content, total pore fluid (water only) saturation.

Please contact laboratory if you would like the "HOLD" samples retained longer than 30 days.

PTS Laboratories

PTS File No: 44216
Client: Rubicon Engineering Corp.
Report Date: 05/12/14

PHYSICAL PROPERTIES DATA - SOIL PROPERTIES PACKAGE (VADOSE ZONE)

Project Name: Green Acres
Project No: 1073.01

		METHODS:	API RP 40 / ASTM D2216	API RP 40		API RP 40		API RP 40	API RP 40 25 PSI CONFINING STRESS
SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	MOISTURE CONTENT, % weight	DENSITY DRY BULK, g/cc	DENSITY GRAIN, g/cc	POROSITY, %Vb (2) TOTAL	POROSITY, %Vb (2) AIR-FILLED	TOTAL PORE FLUID SATURATIONS (3), % Pv	EFFECTIVE PERMEABILITY TO AIR (4), millidarcy
RM-4-20	20	V	5.9	1.52	2.63	42.1	33.1	21.3	1890
RM-4-50	50	V	10.3	1.64	2.63	37.8	21.0	44.5	793
RM-5-20	20	V	8.2	1.56	2.65	41.0	28.2	31.3	792
RM-5-50	50	V	32.0	1.12	2.34	52.0	16.0	69.3	26.1

(1) Sample Orientation: H = horizontal; V = vertical; R = remold

(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.

(3) Fluid density used to calculate pore fluid saturations: Water = 0.9996 g/cc.

(4) Effective (Native) = With as-received pore fluids in place.

Vb = Bulk Volume, cc; Pv = Pore Volume, cc; Air = Nitrogen gas.

PTS Laboratories

PTS File No: 44216
Client: Rubicon Engineering Corp.
Report Date: 05/12/14

PHYSICAL PROPERTIES DATA - HYDRAULIC CONDUCTIVITY PACKAGE

Project Name: Green Acres
Project No: 1073.01

		METHODS:	API RP 40 / ASTM D2216	API RP 40		API RP 40		API RP 40	API RP 40; EPA 9100	
									25 PSI CONFINING STRESS	
SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENTATION (1)	MOISTURE CONTENT, % weight	DENSITY		POROSITY, %Vb (2)		TOTAL PORE FLUID SATURATIONS (3), % Pv	EFFECTIVE (4,5) PERMEABILITY TO WATER, millidarcy	HYDRAULIC CONDUCTIVITY (4,5), cm/s
				DRY BULK, g/cc	GRAIN, g/cc	TOTAL	AIR-FILLED			
RM-1-86	86	V	12.4	1.66	2.68	37.9	17.2	54.5	1.10	1.12E-06
RM-4-140	140	V	18.9	1.42	2.73	48.0	21.1	55.9	3.26	3.30E-06
RM-5-140	140	V	35.1	1.08	2.13	49.4	11.5	76.6	8.75	8.88E-06

(1) Sample Orientation: H = horizontal; V = vertical; R = remold
(2) Total Porosity = all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids.
(3) Fluid density used to calculate pore fluid saturations: Water = 0.9996 g/cc.
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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

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ZIP CODE	92780
PROJECT MANAGER	Mohsen Mehran
email	mmehran@Rubiconeng.com
PROJECT NAME	Green Acres
PHONE NUMBER	714-573-0081
PROJECT NUMBER	1073.01
FAX NUMBER	714-573-0082
SITE LOCATION	4000 Malibu Canyon Rd. Malibu, CA
SAMPLER SIGNATURE	Peter Lu

ANALYSIS REQUEST

PO#

TURNAROUND TIME
24 HOURS ☐ 5 DAYS ☐
72 HOURS ☐ NORMAL ☑

OTHER: _____

SAMPLE INTEGRITY (CHECK):
INTACT X TEMP(F) 49

PTS QUOTE NO.

PTS FILE: 44216

SAMPLE ID	DATE	TIME	DEPTH, FT	NUMBER OF SAMPLES	SOIL PROPERTIES PACKAGE	HYDRAULIC CONDUCTIVITY PACKAGE	PORE FLUID SATURATIONS PACKAGE	TCEQ/TNRCC PROPERTIES PACKAGE	CAPILLARITY PACKAGE	FLUID PROPERTIES PACKAGE	PHOTOLOG: CORE PHOTOGRAPHY	VAPOR TRANSPORT PACKAGE	POROSITY: TOTAL, AIR FILLED, WATER FILLED	POROSITY: EFFECTIVE, ASTM D425M	SPECIFIC GRAVITY, ASTM D854	BULK DENSITY (DRY), API RP40 or ASTM D2937	AIR PERMEABILITY, API RP40	HYDRAULIC CONDUCTIVITY, EPA9100/API RP40 or D5084	GRAIN SIZE DISTRIBUTION, ASTM D422 or 4464M	TOC: WALKLEY-BLACK	ATTERBERG LIMITS, ASTM D4318	VAPOR INTRUSION PACKAGE	FREE PRODUCT MOBILITY PACKAGE	COMMENTS
RM-1-86	4/7/14	0855	86	2		✓																		
RM-4-20	4/7/14	1400	20	1	✓																			
RM-4-50	4/7/14	1510	50	2	✓																			
RM-4-120	4/8/14	1100	120	2																				HOLD
RM-4-130	4/9/14	1338	130	1																				HOLD
RM-4-140	4/8/14	1500	140	1		✓																		
RM-5-20	4/9/14	1115	20	2	✓																			
RM-5-50	4/9/14	1240	50	1	✓																			
RM-5-140	4/11/14	0812	140	1		✓																		

1. RELINQUISHED BY	2. RECEIVED BY	3. RELINQUISHED BY	4. RECEIVED BY
Peter Lu			
COMPANY: Rubicon	COMPANY: PTS LABS	COMPANY	COMPANY
DATE: 4/11/14 TIME: 15:00	DATE: 4/11/14 TIME: 15:00	DATE TIME	DATE TIME