PHOENIX 1102 West Southern Avenue, Suite 4 Tempe, Arizona 85282 Dispatch 602-272-7890 (o) 602-272-PTX1 (7891) (f) 602-272-7892



TUCSON 916 West Grant Road Tucson, Arizona 85705 Dispatch 520-352-0150 (o) 520-352-0150 (f) 520-731-9344

June 13, 2019 Pulte Tucson Land - MS-1021 P.O. Box 3660 Portland, OR 97208

#### Re: Building Pad-Post-Tension Foundation

5X and 5W Mass Grading @ Rancho Vistoso Valley Vista Lot #: 1-47, 98-127 (Phase 1A) Permit #:

To Whom It May Concern:

ProTeX Job ID#: 0234Dev-3579-8944

In accordance with your request ProTeX has completed observation, moisture and density testing as a part of the construction of the building pads associated with the aforementioned development. Surface clearing, over-excavation, preparation of subgrade, and compaction of subgrade/fill soils are in accordance with the specifications included in the Soil Investigation conducted by ProTeX the PT Xperts, LLC., (Job No. 7466), dated February 20, 2018.

Field observations were made to ensure that the site was cleared of all vegetation and structures, site was overexcavated to a depth of 1 foot and exposed subgrade soils were scarified. Testing was performed to confirm moisture conditioning and compaction efforts are in compliance with the recommendations of the aforementioned geotechnical report. Field Density tests are enclosed. Based on the observations, laboratory testing, and field density testing, a bearing value of 1250psf at finished grade bearing on 1 foot of engineered fill is assigned for post-tensioned foundation systems. Building Pads are certified for one year from the date of this letter.

Areas in the building pad that are disturbed as a result of construction activities should be re-compacted to specified density. Inspection of foundation bearing soils prior to placement of concrete is recommended. Proper drainage should be maintained at all times away from structures. Following the construction of buildings and prior to occupancy, it is recommended that drainage away from the structure should be inspected under the supervision of a registered professional engineer in the civil or geotechnical field.

Submitted by: ProTeX - the PT Xperts, L.L.C.



Jones Tembo, P.E.

[102003477]



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Lot: Earthwork

Cross Streets: La Canada Drive and Moore Road

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Test Type: Pad (5-10 feet) (Phase 1A)

Max Dry Direct Field Dry Field Opt. Moisture Depth of Density % Density Proctor Date Street Lot / Sta. Trans. Density Moisture ( Moisture Spec. ( Pass Spec. (%) Test Comp. Lab# (corr) (lb/ft3) (corr) (%) Used %) %) (lt/ft3) 04/17/2019 Lot 39 7' BFG 10" 101.9 9.6 104.1 8.2 98 -2 to +2 191996 Pass Auterbrunnen Lane 98 min. 04/17/2019 Lot 43 5' BFG 10" 100.4 10.4 102.2 8.6 98 -2 to +2 191996 Pass Auterbrunnen Lane 98 min. 04/17/2019 Auterbrunnen Lane Lot 46 6' BFG 10" 107.1 9.3 108.1 7.3 99 98 min. -2 to +2 191996 Pass -2 to +2 191999 04/18/2019 Auterbrunnen Lane Lot 37 6' BFG 10" 115.5 8.6 118.4 9.0 98 98 min. Pass 04/18/2019 Auterbrunnen Lane 6' BFG 10" 113.2 7.5 114.8 6.0 99 -2 to +2 191996 Pass Lot 34 98 min. 10" -2 to +2 191995 04/19/2019 Romsdalen Road Lot 20 8' BFG 123.0 9.8 126.0 9.3 98 98 min. Pass 04/19/2019 Romsdalen Road Lot 25 6' BFG 10" 119.9 8.0 121.2 10.0 99 98 min. -2 to +2 191957 Pass 04/19/2019 Romsdalen Road Lot 23 7' BFG 10" 120.4 9.3 121.2 10.0 99 98 min. -2 to +2 191957 Pass 191957 04/19/2019 Romsdalen Road Lot 24 8' BFG 10" 120.0 8.9 121.2 10.0 99 98 min. -2 to +2 Pass 04/19/2019 Romsdalen Road Lot 21 7' BFG 10" 123.7 8.8 126.0 9.3 98 98 min. -2 to +2 191995 Pass Lot 22 -2 to +2 6' BFG 10" 117.1 8.3 118.4 9.0 99 191999 04/19/2019 Romsdalen Road 98 min. Pass 04/26/2019 5' BFG 10" 125.1 8.0 126.0 9.3 99 -2 to +2 191995 Pass Romsdalen Road Lot 26 98 min. 04/26/2019 Romsdalen Road Lot 20 5' BFG 10" 118.8 8.0 121.2 10.0 98 98 min. -2 to +2 191957 Pass 04/26/2019 Romsdalen Road Lot 24 5' BFG 10" 120.8 8.8 121.2 10.0 100 98 min. -2 to +2 191957 Pass Lot 19 7' BFG 10" 7.6 9.0 -2 to +2 191999 04/29/2019 Kalalau Drive 116.3 118.4 98 98 min. Pass Pass 04/29/2019 Kalalau Drive Lot 19 8' BFG 10" 118.5 7.2 118.4 9.0 100 98 min. -2 to +2 191999 Lot 18 10" 8.0 -2 to +2 191999 04/29/2019 Kalalau Drive 6' BFG 119.7 118.4 9.0 101 98 min. Pass 04/29/2019 Kalalau Drive Lot 17 5' BFG 10" 117.8 9.9 118.4 9.0 100 98 min. -2 to +2 191999 Pass



Pulte Tucson Land Client:

Project Name: Rancho Vistoso Valley Vista

Lot: Earthwork

Cross Streets: La Canada Drive and Moore Road

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

04/29/2019

Romsdalen Road

Pad (Phase 1A) Test Type:

Max Dry Direct Field Dry Field Opt. Moisture Depth of Density % Density Proctor Date Street Lot / Sta. Trans. Density Moisture ( Moisture Spec. ( Pass Test Comp. Spec. (%) Lab# (corr) (corr) (%) Used (lb/ft3) %) %) (lt/ft3) 04/11/2019 Lot 47 FG 6" 115.8 7.4 118.4 9.0 98 -2 to +2 191999 Pass Lauterbrunnen Lane 95 min. 4' BFG 10" 122.7 8.5 125.0 9.6 98 -2 to +2 191963 Pass 04/23/2019 Lauterbrunnen Lane Lot 31 95 min. 3' BFG 04/23/2019 Romsdalen Road Lot 112 10" 119.6 8.8 125.3 10.1 95 95 min. -2 to +2 191998 Pass (SG) 04/23/2019 Lauterbrunnen Lane Lot 46 4' BFG 10" 121.1 9.0 125.0 9.6 97 95 min. -2 to +2 191963 Pass Pass 04/25/2019 Romsdalen Road Lot 101 1' BFG 10" 114.5 10.8 118.4 9.0 97 95 min. -2 to +2 191999 04/25/2019 Romsdalen Road Lot 98 1' BFG 10" 123.4 8.9 123.8 10.0 100 95 min. -2 to +2 191963 Pass 04/25/2019 10" 8.9 9.0 97 -2 to +2 191999 Kalalau Drive Lot 114 2' BFG 114.8 118.4 95 min. Pass 04/25/2019 Kalalau Drive Lot 117 1' BFG 10" 119.2 8.1 123.8 10.0 96 95 min. -2 to +2 191963 Pass 04/25/2019 Kalalau Drive Lot 113 3' BFG 10" 122.7 90 123.8 100 99 95 min. -2 to +2 191963 Pass Lot 14 2' BFG 10" -2 to +2 191957 04/26/2019 Kalalau Drive 118.9 10.4 121.2 10.0 98 95 min. Pass 6" -2 to +2 191999 04/26/2019 Romsdalen Road FG 118.2 8.7 118.4 9.0 100 95 min. Pass Lot 111 Pass 04/26/2019 Kalalau Drive Lot 13 1' BFG 10" 120.1 8.0 121.2 10.0 99 95 min. -2 to +2 191957 04/26/2019 Kalalau Drive Lot 16 1' BFG 6" 115.8 7.7 118.4 9.0 98 95 min. -2 to +2 191999 Pass 04/26/2019 Romsdalen Road Lot 111 2' BFG 10" 119.0 9.6 121.2 10.0 98 95 min. -2 to +2 191957 Pass 04/26/2019 Romsdalen Road Lot 27 4' BFG 10" 118.0 8.6 121.2 10.0 97 95 min. -2 to +2 191957 Pass 04/26/2019 Lot 21 4' BFG 10" 120.9 8.5 121.2 10.0 100 95 min. -2 to +2 191957 Pass Romsdalen Road 04/29/2019 FG 10" 8.5 191999 Pass Romsdalen Road Lot 100 115.8 118.4 9.0 98 95 min. -2 to +2 04/29/2019 FG 6" 115.3 7.7 9.0 97 -2 to +2 191999 Pass Romsdalen Road Lot 102 118.4 95 min. 04/29/2019 Romsdalen Road Lot 101 FG 10" 113.6 8.6 118.4 9.0 96 95 min. -2 to +2 191999 Pass

SPECIAL INSPECTIONS • GEO-TECHNICAL/ MATERIALS • LABORATORY • ENGINEERING CONSULTATION

4' BFG

10"

122.7

8.3

123.8

10.0

99

95 min.

-2 to +2

191963

Pass

Lot 24



Client: Pulte Tucson Land

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (Phase 1A) Test Type:

Project Name: Rancho Vistoso Valley Vista

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (It/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
04/29/2019	Romsdalen Road	Lot 110	FG	6"	115.6	7.8	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
04/29/2019	Romsdalen Road	Lot 99	FG	10"	120.5	6.2	121.9	8.0	99	95 min.	-2 to +2	191999	Pass
04/29/2019	Romsdalen Road	Lot 28	3' BFG	10"	120.3	8.6	125.3	10.1	96	95 min.	-2 to +2	191998	Pass
04/29/2019	Romsdalen Road	Lot 112	1' BFG	10"	121.4	8.3	126.0	9.3	96	95 min.	-2 to +2	191995	Pass
04/29/2019	Romsdalen Road	Lot 110	1' BFG	10"	102.3	6.9	104.1	8.2	98	95 min.	-2 to +2	191996	Pass
04/29/2019	Romsdalen Road	Lot 98	FG	10"	122.4	6.3	121.9	8.0	100	95 min.	-2 to +2	191999	Pass
04/29/2019	Romsdalen Road	Lot 23	3' BFG	10"	120.9	7.9	126.0	9.3	96	95 min.	-2 to +2	191995	Pass
04/29/2019	Romsdalen Road	Lot 22	3' BFG	10"	121.8	8.7	123.8	10.0	98	95 min.	-2 to +2	191963	Pass
04/29/2019	Kalalau Drive	Lot 15	3' BFG	10"	122.5	7.8	125.3	9.5	98	95 min.	-2 to +2	191995	Pass
04/29/2019	Kalalau Drive	Lot 16	4' BFG	10"	116.6	9.9	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
04/29/2019	Kalalau Drive	Lot 17	2' BFG	10"	126.3	7.5	126.0	9.3	100	95 min.	-2 to +2	191995	Pass
04/30/2019	Kalalau Drive	Lot 126	1' BFG	10"	118.2	8.0	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
04/30/2019	Kalalau Drive	Lot 123	1' BFG	10"	117.5	8.9	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
04/30/2019	Kalalau Drive	Lot 120	1' BFG	10"	117.2	10.0	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
04/30/2019	Kalalau Drive	Lot 126	FG	6"	114.9	8.0	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
04/30/2019	Kalalau Drive	Lot 125	FG	6"	115.1	7.6	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
05/01/2019	Kalalau Drive	Lot 127	FG	6"	115.2	7.9	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
05/01/2019	Kalalau Drive	Lot 119	FG	6"	114.7	7.6	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
05/01/2019	Kalalau Drive	Lot 19	3' BFG	10"	121.4	5.2	125.5	7.1	97	95 min.	-2 to +2	191999	Pass
05/01/2019	Kalalau Drive	Lot 118	FG	6"	114.9	7.7	118.4	9.0	97	95 min.	-2 to +2	191999	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (Phase 1A) Test Type:

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (It/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
05/01/2019	Kalalau Drive	Lot 118	1' BFG	10"	120.3	8.7	121.9	8.0	99	95 min.	-2 to +2	191999	Pass
05/01/2019	Kalalau Drive	Lot 127	1' BFG	10"	121.0	7.5	121.9	8.0	99	95 min.	-2 to +2	191999	Pass
05/01/2019	Kalalau Drive	Lot 124	FG	6"	115.5	7.7	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
05/01/2019	Kalalau Drive	Lot 124	1' BFG	10"	116.4	8.4	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
05/01/2019	Kalalau Drive	Lot 121	1' BFG	10"	122.7	9.4	123.6	7.6	99	95 min.	-2 to +2	191999	Pass
05/01/2019	Kalalau Drive	Lot 121	FG	6"	114.6	7.8	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
05/01/2019	Romsdalen Road	Lot 23	2' BFG	10"	125.3	6.2	125.5	7.1	100	95 min.	-2 to +2	191999	Pass
05/01/2019	Romsdalen Road	Lot 26	2' BFG	10"	121.5	6.3	121.9	8.0	100	95 min.	-2 to +2	191999	Pass
05/01/2019	Romsdalen Road	Lot 20	FG	6"	117.1	7.6	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/01/2019	Romsdalen Road	Lot 29	2' BFG	10"	126.5	4.7	127.3	6.6	99	95 min.	-2 to +2	191999	Pass
05/01/2019	Romsdalen Road	Lot 20	2' BFG	10"	120.3	6.7	121.9	8.0	99	95 min.	-2 to +2	191999	Pass
05/02/2019	Kalalau Drive	Lot 5	1' BFG	10"	116.9	7.6	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/02/2019	Romsdalen Road	Lot 30	1' BFG	10"	114.9	8.9	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
05/02/2019	Romsdalen Road	Lot 27	1' BFG	10"	124.8	8.9	126.0	9.3	99	95 min.	-2 to +2	191995	Pass
05/02/2019	Romsdalen Road	Lot 21	1' BFG	10"	126.1	7.8	126.0	9.3	100	95 min.	-2 to +2	191995	Pass
05/02/2019	Kalalau Drive	Lot 8	1' BFG	10"	115.4	8.8	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
05/02/2019	Kalalau Drive	Lot 1	1' BFG	10"	122.2	8.0	123.8	10.0	99	95 min.	-2 to +2	191963	Pass
05/02/2019	Kalalau Drive	Lot 11	1' BFG	10"	120.9	8.0	121.2	10.0	100	95 min.	-2 to +2	191957	Pass
05/02/2019	Romsdalen Road	Lot 25	1' BFG	10"	118.2	7.4	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
05/03/2019	Lauterbrunnen Lane	Lot 46	3' BFG	10"	127.1	6.4	129.9	8.0	98	95 min.	-2 to +2	191995	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Lot: Earthwork

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Test Type: Pad (Phase 1A)

ject Name: Rancho Vistoso Valley Vista

Cross Streets: La Canada Drive and Moore Road

Max Dry Field Dry Direct Field Opt. Moisture Depth of Density % Density Proctor Date Street Lot / Sta. Trans. Density Moisture ( Moisture Spec. ( Pass Spec. (%) Test Comp. Lab# (corr) (lb/ft3) (corr) (%) Used %) %) (lt/ft3) 05/03/2019 Lot 39 4' BFG 10" 118.3 6.4 121.9 8.0 97 -2 to +2 191999 Pass Lauterbrunnen Lane 95 min. 05/03/2019 Kalalau Drive Lot 4 FG 10" 123.8 6.7 129.9 8.0 95 -2 to +2 191995 Pass 95 min. 05/03/2019 Lauterbrunnen Lane Lot 36 4' BFG 10" 126.8 5.8 133.1 7.0 95 95 min. -2 to +2 191995 Pass -2 to +2 191957 05/03/2019 Lauterbrunnen Lane Lot 34 3' BFG 10" 119.3 7.2 124.3 9.2 96 95 min. Pass 05/03/2019 Kalalau Drive FG 10" 127.6 6.4 129.9 8.0 98 95 min. -2 to +2 191995 Pass Lot 3 -2 to +2 191995 05/03/2019 Lauterbrunnen Lane Lot 44 4' BFG 10" 127.6 7.7 128.3 8.5 99 95 min. Pass 05/03/2019 Kalalau Drive Lot 1 FG 10" 122.6 8.9 126.0 9.3 97 95 min. -2 to +2 191995 Pass 05/03/2019 Lauterbrunnen Lane Lot 43 3' BFG 10" 125.2 7.1 129.9 8.0 96 95 min. -2 to +2 191995 Pass 191995 05/03/2019 Lauterbrunnen Lane Lot 37 3' BFG 10" 128.0 7.9 128.3 8.5 100 95 min. -2 to +2 Pass 05/03/2019 Lauterbrunnen Lane Lot 40 4' BFG 10" 124.2 6.1 129.9 8.0 96 95 min. -2 to +2 191995 Pass Lot 42 -2 to +2 3' BFG 10" 126.3 6.0 133.1 7.0 95 95 min. 191995 Pass 05/03/2019 Lauterbrunnen Lane 05/03/2019 FG 10" 8.2 126.0 9.3 100 -2 to +2 191995 Pass Kalalau Drive Lot 11 126.3 95 min. 05/03/2019 Kalalau Drive Lot 7 FG 10" 121.4 9.0 126.0 9.3 96 95 min. -2 to +2 191995 Pass 05/03/2019 Kalalau Drive Lot 9 FG 10" 123.9 7.2 129.9 8.0 95 95 min. -2 to +2 191995 Pass Lot 10 FG 7.2 -2 to +2 191995 05/03/2019 Kalalau Drive 10" 126.8 129.9 8.0 98 95 min. Pass 05/03/2019 Kalalau Drive Lot 8 FG 10" 121.5 10.7 126.0 9.3 96 95 min. -2 to +2 191995 Pass Lot 12 FG 10" 9.3 -2 to +2 191995 Pass 05/03/2019 Kalalau Drive 120.7 8.0 126.0 96 95 min. 05/03/2019 Lauterbrunnen Lane Lot 31 2' BFG 10" 123.8 8.1 126.0 9.3 98 95 min. -2 to +2 191995 Pass Pass 05/03/2019 Kalalau Drive Lot 2 FG 10" 122.3 6.9 128.3 8.5 95 95 min. -2 to +2 191995 05/03/2019 Kalalau Drive Lot 6 FG 10" 118.3 5.6 119.7 5.2 99 95 min. -2 to +2 191996 Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (Phase 1A) Test Type:

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (It/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
05/03/2019	Lauterbrunnen Lane	Lot 31	3' BFG	10"	121.1	6.8	127.9	8.6	95	95 min.	-2 to +2	191963	Pass
05/03/2019	Kalalau Drive	Lot 5	FG	10"	129.7	6.6	129.9	8.0	100	95 min.	-2 to +2	191995	Pass
05/06/2019	Romsdalen Road	Lot 28	FG	10"	123.7	7.7	126.0	9.3	98	95 min.	-2 to +2	191995	Pass
05/06/2019	Romsdalen Road	Lot 25	FG	10"	122.7	8.6	126.0	9.3	97	95 min.	-2 to +2	191995	Pass
05/06/2019	Romsdalen Road	Lot 27	FG	10"	123.2	8.4	126.0	9.3	98	95 min.	-2 to +2	191995	Pass
05/06/2019	Lauterbrunnen Lane	Lot 46	2' BFG	10"	118.4	8.7	123.8	10.0	96	95 min.	-2 to +2	191963	Pass
05/06/2019	Romsdalen Road	Lot 26	FG	10"	123.5	7.4	126.0	9.3	98	95 min.	-2 to +2	191995	Pass
05/06/2019	Romsdalen Road	Lot 24	FG	10"	122.9	8.7	126.0	9.3	98	95 min.	-2 to +2	191995	Pass
05/06/2019	Lauterbrunnen Lane	Lot 36	1' BFG	10"	119.7	8.5	126.0	9.3	95	95 min.	-2 to +2	191995	Pass
05/06/2019	Lauterbrunnen Lane	Lot 38	2' BFG	10"	122.3	8.4	126.0	9.3	97	95 min.	-2 to +2	191995	Pass
05/06/2019	Lauterbrunnen Lane	Lot 33	1' BFG	10"	122.8	8.1	126.0	9.3	97	95 min.	-2 to +2	191995	Pass
05/06/2019	Lauterbrunnen Lane	Lot 35	2' BFG	10"	123.4	7.8	126.0	9.3	98	95 min.	-2 to +2	191995	Pass
05/06/2019	Romsdalen Road	Lot 21	FG	10"	123.0	7.9	126.0	9.3	98	95 min.	-2 to +2	191995	Pass
05/06/2019	Lauterbrunnen Lane	Lot 43	2' BFG	10"	115.0	7.9	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
05/06/2019	Romsdalen Road	Lot 23	FG	10"	123.5	8.1	126.0	9.3	98	95 min.	-2 to +2	191995	Pass
05/06/2019	Lauterbrunnen Lane	Lot 41	2' BFG	10"	112.8	7.9	118.4	9.0	95	95 min.	-2 to +2	191999	Pass
05/06/2019	Romsdalen Road	Lot 22	FG	10"	122.5	8.3	126.0	9.3	97	95 min.	-2 to +2	191995	Pass
05/06/2019	Lauterbrunnen Lane	Lot 37	FG	6"	115.1	7.2	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
05/06/2019	Lauterbrunnen Lane	Lot 38	FG	6"	115.4	7.5	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
05/06/2019	Lauterbrunnen Lane	Lot 33	FG	6"	115.4	7.2	118.4	9.0	98	95 min.	-2 to +2	191999	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Lot: Earthwork

Cross Streets: La Canada Drive and Moore Road

Job Name: 5X and 5W Mass Grading

 $\frac{10 \text{ Maine.}}{10 \text{ Maine}}$ 

Job ID #: 8944

Test Type: Pad (Phase 1A)

Max Dry Field Dry Direct Field Opt. Moisture Depth of Density % Density Proctor Date Street Lot / Sta. Trans. Density Moisture ( Moisture Spec. ( Pass Spec. (%) Test Comp. Lab# (corr) (lb/ft3) (corr) (%) Used %) %) (lt/ft3) 05/06/2019 Lot 34 FG 6" 115.1 7.4 118.4 9.0 97 -2 to +2 191999 Pass Lauterbrunnen Lane 95 min. 6" 05/06/2019 Lot 35 FG 116.5 7.6 118.4 9.0 98 -2 to +2 191999 Pass Lauterbrunnen Lane 95 min. 05/06/2019 Lauterbrunnen Lane Lot 32 FG 6" 115.9 7.6 118.4 9.0 98 95 min. -2 to +2 191999 Pass 6" -2 to +2 191999 05/06/2019 Lauterbrunnen Lane Lot 36 FG 116.1 7.4 118.4 9.0 98 95 min. Pass 10" 05/06/2019 Romsdalen Road Lot 30 FG 123.3 7.6 126.0 9.3 98 95 min. -2 to +2 191995 Pass 10" -2 to +2 191995 05/06/2019 Romsdalen Road Lot 29 FG 124.3 7.8 126.0 9.3 99 95 min. Pass 05/07/2019 Kalalau Drive Lot 18 FG 10" 113.3 8.3 118.4 9.0 96 95 min. -2 to +2 191999 Pass 05/07/2019 Kalalau Drive Lot 17 FG 10" 114.9 7.9 118.4 9.0 97 95 min. -2 to +2 191999 Pass 191999 05/07/2019 Kalalau Drive Lot 19 FG 10" 118.2 7.6 118.4 9.0 100 95 min. -2 to +2 Pass 05/09/2019 Lauterbrunnen Lane Lot 43 FG 6" 115.0 7.7 118.4 9.0 97 95 min. -2 to +2 191999 Pass FG 6" 7.2 -2 to +2 Lot 44 114.9 9.0 97 95 min. 191999 Pass 05/09/2019 Lauterbrunnen Lane 118.4 FG 6" 05/09/2019 7.3 98 -2 to +2 191999 Pass Romsdalen Road Lot 104 116.1 118.4 9.0 95 min. 05/09/2019 Lauterbrunnen Lane Lot 46 FG 6" 115.4 7.3 118.4 9.0 98 95 min. -2 to +2 191999 Pass 05/09/2019 Lauterbrunnen Lane Lot 39 FG 6" 115.8 7.4 118.4 9.0 98 95 min. -2 to +2 191999 Pass Lot 105 FG 6" 7.4 9.0 -2 to +2 191999 05/09/2019 Romsdalen Road 115.7 118.4 98 95 min. Pass 6" 05/09/2019 Lauterbrunnen Lane Lot 42 FG 115.7 7.5 118.4 9.0 98 95 min. -2 to +2 191999 Pass Lot 103 FG 6" 7.2 -2 to +2 191999 05/09/2019 Romsdalen Road 116.0 118.4 9.0 98 95 min. Pass 05/09/2019 Romsdalen Road Lot 105 1' BFG 10" 112.8 8.6 118.4 9.0 95 95 min. -2 to +2 191999 Pass Pass 05/09/2019 Lauterbrunnen Lane Lot 39 1' BFG 10" 127.2 8.0 126.8 9.0 100 95 min. -2 to +2 191995 95 min. 05/09/2019 Romsdalen Road Lot 103 1' BFG 10" 112.5 8.7 118.4 9.0 95 -2 to +2 191999 Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Lot: Earthwork

Cross Streets: La Canada Drive and Moore Road

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Test Type: Pad (Phase 1A)

Max Dry Field Dry Direct Field Opt. Moisture Depth of Density % Density Proctor Date Street Lot / Sta. Trans. Density Moisture ( Moisture Spec. ( Pass Test Comp. Spec. (%) Lab# (corr) (lb/ft3) (corr) (%) Used %) %) (lt/ft3) 05/09/2019 Lot 40 1' BFG 10" 125.8 8.1 126.0 9.3 100 95 min. -2 to +2 191995 Pass Lauterbrunnen Lane 05/09/2019 1' BFG 10" 123.0 7.8 126.0 9.3 98 95 min. -2 to +2 191995 Pass Lauterbrunnen Lane Lot 46 05/09/2019 Lauterbrunnen Lane Lot 43 1' BFG 10" 117.9 8.6 118.4 9.0 100 95 min. -2 to +2 191999 Pass 6" -2 to +2 191999 05/17/2019 Kalalau Drive Lot 114 FG 116.4 7.2 118.4 9.0 98 95 min. Pass Bank Protection Access 05/21/2019 Lot 45 (Back of Pad) 1' BFG 6" 117.4 120.2 12.1 -2 to +2 192001 Pass 11.3 98 95 min. Road 05/21/2019 Kalalau Drive Lot 122 FG 6" 117.7 7.9 118.4 9.0 99 95 min. -2 to +2 191999 Pass 05/21/2019 Lot 120 FG 6" 117.8 8.4 9.0 100 -2 to +2 191999 Kalalau Drive 118.4 95 min. Pass 05/21/2019 Kalalau Drive Lot 13 FG 6" 116.5 7.8 118.4 9.0 98 95 min. -2 to +2 191999 Pass 6" 95 min. 05/21/2019 Kalalau Drive Lot 115 1' BFG 1162 74 118.4 90 98 -2 to +2 191999 Pass Lot 106 6" FG 8.5 9.0 -2 to +2 191999 05/21/2019 Romsdalen Road 116.3 118.4 98 95 min. Pass 05/21/2019 FG 6" 7.6 98 -2 to +2 191999 Romsdalen Road Lot 107 115.4 118.4 9.0 95 min. Pass 6" Pass 05/21/2019 Lauterbrunnen Lane Lot 45 FG 114.7 7.4 118.4 9.0 97 95 min. -2 to +2 191999 **Bank Protection Access** 05/21/2019 Lot 25 (Back of Pad) FG 6" 119.3 11.3 120.2 12.1 99 95 min. -2 to +2 192001 Pass Road FG 6" 97 -2 to +2 191999 05/21/2019 Romsdalen Road Lot 108 115.2 7.9 118.4 9.0 95 min. Pass 6" 05/21/2019 Kalalau Drive Lot 117 FG 117.0 8.2 118.4 9.0 99 95 min. -2 to +2 191999 Pass 05/21/2019 Kalalau Drive FG 6" 117.8 7.9 118.4 9.0 100 95 min. -2 to +2 191999 Pass Lot 115 Kalalau Drive 6" 05/21/2019 Lot 116 FG 115.8 7.8 118.4 9.0 98 95 min. -2 to +2 191999 Pass 05/21/2019 Romsdalen Road Lot 112 FG 6" 117.0 8.2 118.4 9.0 99 95 min. -2 to +2 191999 Pass 6" 05/21/2019 Kalalau Drive Lot 113 FG 117.6 7.4 118.4 9.0 99 95 min. -2 to +2 191999 Pass



Client: Pulte Tucson Land Job Name: 5X and 5W Mass Grading Project Name: Rancho Vistoso Valley Vista

Lot: Earthwork

Cross Streets: La Canada Drive and Moore Road

Job ID #: 8944

Test Type: Pad (Phase 1A)

Max Dry Field Dry Field Direct Opt. Moisture Density Depth of % Density Proctor Date Street Lot / Sta. Trans. Density Moisture ( Moisture Spec. ( Pass Comp. Test (corr) Spec. (%) Lab # Used (lb/ft3) %) (corr) (%) %) (lt/ft3) 05/21/2019 Romsdalen Road Lot 109 FG 6" 117.4 7.5 118.4 9.0 99 95 min. -2 to +2 191999 Pass FG 6" 117.3 7.9 118.4 9.0 99 -2 to +2 191999 Pass 05/24/2019 Kalalau Drive Lot 16 95 min. 05/24/2019 Kalalau Drive Lot 14 FG 6" 118.3 8.3 118.4 9.0 100 95 min. -2 to +2 191999 Pass 05/24/2019 Kalalau Drive Lot 15 FG 6" 118.6 8.4 118.4 9.0 100 95 min. -2 to +2 191999 Pass 06/13/2019 Lauterbrunnen Lane FG 6" 7.7 9.0 99 -2 to +2 191999 Pass Lot 31 116.8 118.4 95 min. 06/13/2019 Kalalau Drive Lot 123 FG 6" 115.1 8.0 9.0 97 95 min. -2 to +2 191999 Pass 118.4 06/13/2019 FG 6" 7.4 9.0 -2 to +2 191999 Lauterbrunnen Lane Lot 41 115.6 118.4 98 95 min. Pass 06/13/2019 Lauterbrunnen Lane Lot 40 FG 6" 114.5 7.6 118.4 9.0 97 95 min. -2 to +2 191999 Pass



Client: Pulte Tucson Land Job Name: 5X and 5W Mass Grading Project Name: Rancho Vistoso Valley Vista

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Job ID #: 8944

Test Type: Pad Subgrade (Phase 1A)

Max Dry Field Drv Field Direct Opt. Moisture Depth of Density % Density Proctor Date Street Lot / Sta. Trans. Density Moisture ( Moisture Spec. ( Pass Test Comp. Spec. (%) Lab # (corr) (lb/ft3) (corr) (%) Used %) %) (lt/ft3) 04/10/2019 Romsdalen Road Lot 22 (Back of Pad) 4' BFG 8" 109.3 8.8 110.2 6.9 99 -2 to +2 191996 Pass 95 min. 8" 04/10/2019 Kalalau Drive 5' BFG 7.9 112.4 6.5 99 -2 to +2 191996 Pass Lot 18 (Back of Pad) 111.1 98 min. 04/11/2019 Romsdalen Road Lot 24 (Back of Pad) 6' BFG 8" 112.2 7.9 114.8 6.0 98 98 min. -2 to +2 191996 Pass 8" -2 to +2 191996 04/11/2019 Auterbrunnen Lane Lot 44 (Back of Pad) 7' BFG 108.2 7.7 108.1 7.3 100 98 min. Pass 8" 04/11/2019 Lot 38 (Back of Pad) 7' BFG 111.3 7.5 112.4 6.5 99 98 min. -2 to +2 191996 Pass Auterbrunnen Lane 8" -2 to +2 191996 04/11/2019 Auterbrunnen Lane Lot 41 (Back of Pad) 7' BFG 109.8 6.7 110.2 6.9 100 98 min. Pass 8" 04/11/2019 Auterbrunnen Lane Lot 47 (Back of Pad) 2' BFG 99.8 10.1 104.1 8.2 96 95 min. -2 to +2 191996 Pass 04/11/2019 Auterbrunnen Lane Lot 32 (Back of Pad) 6' BFG 8" 115.9 12.6 117.9 12.0 98 98 min. -2 to +2 191990 Pass 8" 191996 04/11/2019 Auterbrunnen Lane Lot 35 (Back of Pad) 6' BFG 111.5 8.0 112.4 6.5 99 98 min. -2 to +2 Pass 04/11/2019 Romsdalen Road Lot 26 (Back of Pad) 5' BFG 8" 111.8 8.0 112.4 6.5 99 98 min. -2 to +2 191996 Pass 8" -2 to +2 Lot 29 (Back of Pad) 2' BFG 113.0 11.8 117.9 12.0 96 95 min. 191990 Pass 04/11/2019 Romsdalen Road 04/16/2019 6' BFG 10" 6.7 117.2 99 -2 to +2 191996 Pass Auterbrunnen Lane Lot 40 116.4 5.6 98 min. 04/16/2019 Lot 46 6' BFG 10" 111.7 5.1 112.4 6.5 99 98 min. -2 to +2 191996 Pass Auterbrunnen Lane 04/16/2019 Auterbrunnen Lane Lot 43 7' BFG 10" 107.0 7.0 108.1 7.3 99 98 min. -2 to +2 191996 Pass Lot 20 -2 to +2 191963 04/17/2019 Romsdalen Road 6' BFG 10" 122.0 10.3 123.8 10.0 99 98 min. Pass 04/17/2019 Romsdalen Road Lot 22 6' BFG 10" 111.5 8.0 112.4 6.5 99 98 min. -2 to +2 191996 Pass 04/17/2019 Lot 15 5' BFG 10" 7.0 -2 to +2 191996 Pass Kalalau Drive 112.8 114.8 6.0 98 98 min. 04/17/2019 Auterbrunnen Lane Lot 31 5' BFG 10" 118.8 10.9 118.4 9.0 100 98 min. -2 to +2 191999 Pass Pass 04/17/2019 Auterbrunnen Lane Lot 34 8' BFG 10" 111.9 7.2 114.8 6.0 98 98 min. -2 to +2 191996 04/17/2019 Romsdalen Road Lot 28 5' BFG 10" 117.9 10.7 118.4 9.0 100 98 min. -2 to +2 191999 Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Job ID #: 8944

Test Type: Pad Subgrade (Phase 1A)

Max Dry Direct Field Dry Field Opt. Moisture Density Depth of Density % Proctor Spec. ( Lot / Sta. Pass Date Street Trans. Density Moisture ( Moisture Spec. (%) Lab # Test (corr) Comp. (corr) (%) %) Used (lb/ft3) %) (lt/ft3) 04/17/2019 Auterbrunnen Lane Lot 37 7' BFG 10" 117.6 9.7 118.4 9.0 99 98 min. -2 to +2 191999 Pass 04/17/2019 Romsdalen Road Lot 25 5' BFG 10" 116.2 9.9 118.4 9.0 98 98 min. -2 to +2 191999 Pass



**Moisture Vs. Density** 





**Moisture Vs. Density** 



Reviewed By: Jerald W Grossarth



**Moisture Vs. Density** 







**Moisture Vs. Density** 





**Moisture Vs. Density** 



FOR CALL	ProTeX the PT 1102 W. South Tempe, AZ 85	T Xperts LLC nern Ave., Ste. 4 282	Office: (602)-272-7 Fax: (602) 272-789;	891 2		Soils Summa	ry
Client:	Pulte Tucson Land	1		ProTeX Jo	b No:	8944	
Project Name:	Rancho Vistoso			ProTeX La	b No:	191998 - Phoenix	
Job Name:	5X and 5W Mass	Grading		Date Rece	eived:	3/28/2019	
Material:	Native (On-Site)			Sample	d By:	Joseph Navarro	
Material Supplier:	-			Date Sam	pled:	3/25/2019	
Sample Location:	Lot 91 (#4)			Submitte	d By:	Joseph Navarro	
Liquid Limit Plastic Limit Plasticity Index	NA NA NA		$ \begin{array}{c} 0 - 20 \\ 21 - 51 \\ 52 - 90 \\ 91 - 130 \\ > 130 \end{array} $	Very Low Low Medium High Very Hig	w n gh	EXpansi	NA
Percent Swell	of Soil					ASTM D698	S-A
			pH and Resistiv	vity		Moisture Density (	(Proctor)
% Swell	NV				1	Max. Dry Density	122.3
Notes:		pH Rea	ading:	NA		Opt. Moisture %	11.2
		Resistiv	vity (ohms-cm)	NA	Co	rr. Max. Dry Density	125.3
		Class:			Co	orr. Opt. Moisture %	10.2
		Symbol:				% Rock	10

Moisture Vs. Density





**Moisture Vs. Density** 



Reviewed By:

Jerald W Grossarth



**Moisture Vs. Density** 



Reviewed By: Jerald W Grossarth



**Moisture Vs. Density** 



Reviewed By:

Jerald W Grossarth

PHOENIX 1102 West Southern Avenue, Suite 4 Tempe, Arizona 85282 Dispatch 602-272-7890 (o) 602-272-PTX1 (7891) (f) 602-272-7892



TUCSON 916 West Grant Road Tucson, Arizona 85705 Dispatch 520-352-0150 (o) 520-352-0150 (f) 520-731-9344

January 08, 2020 Pulte Tucson Land - MS-1021 P.O. Box 3660 Portland, OR 97208

Re: Building Pad-Post-Tension Foundation

5X and 5W Mass Grading @ Rancho Vistoso Valley Vista Lot #: 48-97 (Phase 1B) Permit #:

To Whom It May Concern:

ProTeX Job ID#: 0234Dev-3579-8944

In accordance with your request ProTeX has completed observation, moisture and density testing as a part of the construction of the building pads associated with the aforementioned development. Surface clearing, over-excavation, preparation of subgrade, and compaction of subgrade/fill soils are in accordance with the specifications included in the Soil Investigation conducted by ProTeX the PT Xperts, LLC., (Job No. 7466), dated February 20, 2018.

Field observations were made to ensure that the site was cleared of all vegetation and structures, site was overexcavated to a depth of 1 foot and exposed subgrade soils were scarified. Testing was performed to confirm moisture conditioning and compaction efforts are in compliance with the recommendations of the aforementioned geotechnical report. Field Density tests are enclosed. Based on the observations, laboratory testing, and field density testing, a bearing value of 1250psf at finished grade bearing on 1 foot of engineered fill is assigned for post-tensioned foundation systems. Building Pads are certified for one year from the date of this letter.

Areas in the building pad that are disturbed as a result of construction activities should be re-compacted to specified density. Inspection of foundation bearing soils prior to placement of concrete is recommended. Proper drainage should be maintained at all times away from structures. Following the construction of buildings and prior to occupancy, it is recommended that drainage away from the structure should be inspected under the supervision of a registered professional engineer in the civil or geotechnical field.

Submitted by: ProTeX - the PT Xperts, L.L.C.



Jones Tembo, P.E.

[115893955]



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (Phase 1B) Test Type:

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (lt/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
04/18/2019	HAA Valley Court	Lot 53	4' BFG	10"	114.0	7.6	118.4	9.0	96	95 min.	-2 to +2	191999	Pass
04/18/2019	HAA Valley Court	Lot 51	4' BFG	10"	118.3	7.4	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
04/19/2019	HAA Valley Court	Lot 49	4' BFG	10"	124.3	7.4	124.3	9.2	100	95 min.	-2 to +2	191957	Pass
04/19/2019	HAA Valley Court	Lot 57	4' BFG	10"	122.1	8.1	122.1	9.7	100	95 min.	-2 to +2	191957	Pass
04/23/2019	Barun Valley Place	Lot 94	4' BFG	10"	122.8	8.7	125.3	10.1	98	95 min.	-2 to +2	191998	Pass
04/23/2019	Barun Valley Place	Lot 96	4' BFG	10"	123.0	9.0	125.3	10.1	98	95 min.	-2 to +2	191998	Pass
04/29/2019	Barun Valley Place	Lot 94	4' BFG	10"	116.3	8.7	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
05/01/2019	Barun Valley Place	Lot 95	3' BFG	10"	124.2	7.8	125.5	7.1	99	95 min.	-2 to +2	191999	Pass
05/01/2019	Barun Valley Place	Lot 81	4' BFG	10"	127.5	7.6	128.3	8.5	99	95 min.	-2 to +2	191995	Pass
05/01/2019	Barun Valley Place	Lot 94	3' BFG	10"	116.6	7.9	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/06/2019	HAA Valley Court	Lot 50	3' BFG	10"	119.6	8.4	126.0	9.3	95	95 min.	-2 to +2	191995	Pass
05/06/2019	HAA Valley Court	Lot 51	3' BFG	10"	119.9	8.4	126.0	9.3	95	95 min.	-2 to +2	191995	Pass
05/06/2019	HAA Valley Court	Lot 54	3' BFG	10"	116.0	10.1	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
05/06/2019	HAA Valley Court	Lot 52	2' BFG	10"	112.7	9.8	118.4	9.0	95	95 min.	-2 to +2	191999	Pass
05/07/2019	Nubra Valley Road	Lot 73	2' BFG	10"	121.4	9.0	126.0	9.3	96	95 min.	-2 to +2	191995	Pass
05/07/2019	HAA Valley Court	Lot 50	2' BFG	10"	124.3	8.3	126.0	9.3	99	95 min.	-2 to +2	191995	Pass
05/07/2019	Barun Valley Place	Lot 78	1' BFG	10"	121.8	7.7	126.0	9.3	97	95 min.	-2 to +2	191995	Pass
05/07/2019	Nubra Valley Road	Lot 74	4' BFG	10"	119.3	7.2	124.3	9.2	96	95 min.	-2 to +2	191957	Pass
05/07/2019	Lauterbrunnen Lane	Lot 65	3' BFG	10"	118.7	7.2	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
05/07/2019	HAA Valley Court	Lot 54	2' BFG	10"	120.3	9.3	126.0	9.3	96	95 min.	-2 to +2	191995	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (Phase 1B) Test Type:

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (lt/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
05/07/2019	HAA Valley Court	Lot 52	1' BFG	10"	119.3	8.9	126.0	9.3	95	95 min.	-2 to +2	191995	Pass
05/07/2019	HAA Valley Court	Lot 55	2' BFG	10"	124.3	7.8	126.0	9.3	99	95 min.	-2 to +2	191995	Pass
05/07/2019	HAA Valley Court	Lot 56	3' BFG	10"	121.9	8.4	126.0	9.3	97	95 min.	-2 to +2	191995	Pass
05/07/2019	Barun Valley Place	Lot 82	3' BFG	10"	117.5	7.3	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/07/2019	Barun Valley Place	Lot 83	2' BFG	10"	122.6	8.9	126.0	9.3	97	95 min.	-2 to +2	191995	Pass
05/07/2019	Barun Valley Place	Lot 84	2' BFG	10"	121.4	7.7	126.0	9.3	96	95 min.	-2 to +2	191995	Pass
05/07/2019	Barun Valley Place	Lot 80	3' BFG	10"	117.6	7.5	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/07/2019	Barun Valley Place	Lot 79	2' BFG	10"	114.6	8.3	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
05/07/2019	Nubra Valley Road	Lot 72	1' BFG	10"	120.3	7.6	126.0	9.3	96	95 min.	-2 to +2	191995	Pass
05/08/2019	Nubra Valley Road	Lot 75	4' BFG	10"	121.6	8.1	126.0	9.3	97	95 min.	-2 to +2	191995	Pass
05/08/2019	Lauterbrunnen Lane	Lot 65	2' BFG	10"	118.8	7.9	123.9	9.8	96	95 min.	-2 to +2	191990	Pass
05/08/2019	Nubra Valley Road	Lot 74	3' BFG	10"	115.8	7.6	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
05/08/2019	Barun Valley Place	Lot 82	1' BFG	10"	114.8	6.6	120.2	8.5	96	95 min.	-2 to +2	191999	Pass
05/08/2019	Barun Valley Place	Lot 93	2' BFG	10"	120.9	7.7	126.0	9.3	96	95 min.	-2 to +2	191995	Pass
05/08/2019	Barun Valley Place	Lot 95	2' BFG	10"	115.5	7.7	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
05/09/2019	HAA Valley Court	Lot 50	1' BFG	10"	110.6	8.7	110.2	6.9	100	95 min.	-2 to +2	191996	Pass
05/09/2019	Nubra Valley Road	Lot 76	3' BFG	10"	123.7	8.6	126.0	9.3	98	95 min.	-2 to +2	191995	Pass
05/09/2019	HAA Valley Court	Lot 54	1' BFG	10"	124.9	9.6	126.0	9.3	99	95 min.	-2 to +2	191995	Pass
05/09/2019	Nubra Valley Road	Lot 77	2' BFG	10"	110.5	8.9	110.2	6.9	100	95 min.	-2 to +2	191996	Pass
05/09/2019	Nubra Valley Road	Lot 75	1' BFG	10"	126.4	8.5	126.0	9.3	100	95 min.	-2 to +2	191995	Pass



Client: Pulte Tucson Land

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (Phase 1B) Test Type:

Project Name: Rancho Vistoso Valley Vista

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (It/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
05/09/2019	Barun Valley Place	Lot 97	1' BFG	10"	125.9	8.4	126.0	9.3	100	95 min.	-2 to +2	191995	Pass
05/10/2019	HAA Valley Court	Lot 55	1' BFG	10"	123.9	7.9	126.0	9.3	98	95 min.	-2 to +2	191995	Pass
05/14/2019	Nubra Valley Road	Lot 74	FG	6"	118.1	10.3	120.2	12.1	98	95 min.	-2 to +2	192001	Pass
05/14/2019	Nubra Valley Road	Lot 71	FG	6"	119.6	10.8	120.2	12.1	100	95 min.	-2 to +2	192001	Pass
05/14/2019	Barun Valley Place	Lot 87	FG	6"	119.1	10.1	120.2	12.1	99	95 min.	-2 to +2	192001	Pass
05/14/2019	Barun Valley Place	Lot 84	FG	6"	118.5	10.6	120.2	12.1	99	95 min.	-2 to +2	192001	Pass
05/15/2019	Lauterbrunnen Lane	Lot 59	FG	6"	118.2	11.4	120.2	12.1	98	95 min.	-2 to +2	192001	Pass
05/15/2019	Lauterbrunnen Lane	Lot 62	FG	6"	117.6	10.9	120.2	12.1	98	95 min.	-2 to +2	192001	Pass
05/17/2019	Lauterbrunnen Lane	Lot 61	FG	6"	117.5	7.8	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/17/2019	HAA Valley Court	Lot 53	FG	6"	118.6	8.4	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
05/17/2019	HAA Valley Court	Lot 57	FG	6"	117.4	8.6	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/17/2019	Nubra Valley Road	Lot 70	FG	6"	118.3	8.1	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
05/17/2019	Lauterbrunnen Lane	Lot 58	FG	6"	118.2	8.9	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
05/17/2019	Nubra Valley Road	Lot 67	FG	6"	117.5	7.3	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/17/2019	Barun Valley Place	Lot 78	FG	6"	117.7	7.5	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/17/2019	Barun Valley Place	Lot 86	FG	6"	117.8	7.4	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
05/17/2019	HAA Valley Court	Lot 50	FG	6"	118.1	7.8	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
05/17/2019	Nubra Valley Road	Lot 77	FG	6"	118.3	8.7	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
05/17/2019	Nubra Valley Road	Lot 65	FG	6"	118.3	8.1	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
05/22/2019	Barun Valley Place	Lot 80	FG	6"	116.3	7.5	118.4	9.0	98	95 min.	-2 to +2	191999	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (Phase 1B) Test Type:

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (It/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
05/22/2019	Nubra Valley Road	Lot 76	FG	6"	116.5	7.8	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
05/22/2019	Nubra Valley Road	Lot 75	FG	6"	117.6	8.1	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/22/2019	Nubra Valley Road	Lot 69	FG	6"	117.5	7.4	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/22/2019	Nubra Valley Road	Lot 73	FG	6"	116.9	7.1	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/22/2019	Barun Valley Place	Lot 82	FG	6"	118.4	8.4	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
05/22/2019	Barun Valley Place	Lot 85	FG	6"	115.3	7.8	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
05/22/2019	Barun Valley Place	Lot 88	FG	6"	117.8	7.9	118.4	9.0	100	95 min.	-2 to +2	191999	Pass
05/23/2019	HAA Valley Court	Lot 48	FG	6"	117.1	7.8	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/23/2019	HAA Valley Court	Lot 51	FG	6"	116.7	7.5	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/23/2019	HAA Valley Court	Lot 54	FG	6"	115.4	7.2	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
05/23/2019	HAA Valley Court	Lot 56	FG	6"	116.8	7.3	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/24/2019	Nubra Valley Road	Lot 68	FG	6"	117.5	7.5	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/24/2019	Nubra Valley Road	Lot 66	FG	6"	117.1	7.4	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/30/2019	Nubra Valley Road	Lot 63	FG	6"	117.5	7.9	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
05/30/2019	Lauterbrunnen Lane	Lot 60	FG	6"	116.8	7.4	118.4	9.0	99	95 min.	-2 to +2	191999	Pass
11/27/2019	HAA Valley Court	Lot 49	FG	10"	120.2	9.7	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
11/27/2019	HAA Valley Court	Lot 55	FG	10"	120.3	9.4	122.1	10.0	99	95 min.	-2 to +2	192000	Pass
11/27/2019	HAA Valley Court	Lot 52	FG	10"	121.9	9.3	122.1	10.0	100	95 min.	-2 to +2	192000	Pass
01/03/2020	Barun Valley Place	Lot 94	FG	12"	120.3	8.6	123.8	10.0	97	95 min.	-2 to +2	191963	Pass
01/03/2020	Barun Valley Place	Lot 92	FG	12"	119.7	8.8	123.8	10.0	97	95 min.	-2 to +2	191963	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (Phase 1B) Test Type:

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (It/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
01/03/2020	Barun Valley Place	Lot 93	FG	12"	119.9	8.9	123.8	10.0	97	95 min.	-2 to +2	191963	Pass
01/03/2020	Barun Valley Place	Lot 96	FG	12"	120.5	9.5	123.8	10.0	97	95 min.	-2 to +2	191963	Pass
01/03/2020	Barun Valley Place	Lot 97	FG	12"	119.8	8.9	123.8	10.0	97	95 min.	-2 to +2	191963	Pass
01/03/2020	Barun Valley Place	Lot 95	FG	12"	121.4	9.2	123.8	10.0	98	95 min.	-2 to +2	191963	Pass
01/03/2020	Barun Valley Place	Lot 91	FG	12"	121.0	9.6	123.8	10.0	98	95 min.	-2 to +2	191963	Pass
01/03/2020	Barun Valley Place	Lot 79	FG	12"	119.1	8.6	123.8	10.0	96	95 min.	-2 to +2	191963	Pass
01/03/2020	Nubra Valley Road	Lot 72	FG	12"	118.9	8.9	123.8	10.0	96	95 min.	-2 to +2	191963	Pass
01/03/2020	Nubra Valley Road	Lot 64	FG	12"	119.6	9.4	123.8	10.0	97	95 min.	-2 to +2	191963	Pass
01/03/2020	Barun Valley Place	Lot 81	FG	12"	120.6	9.3	123.8	10.0	97	95 min.	-2 to +2	191963	Pass
01/03/2020	Barun Valley Place	Lot 90	FG	12"	120.3	9.3	123.8	10.0	97	95 min.	-2 to +2	191963	Pass
01/03/2020	Barun Valley Place	Lot 89	FG	12"	119.4	8.7	123.8	10.0	96	95 min.	-2 to +2	191963	Pass
01/03/2020	Barun Valley Place	Lot 83	FG	12"	121.9	9.4	123.8	10.0	98	95 min.	-2 to +2	191963	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Cross Streets: La Canada Drive and Moore Road Lot: Earthwork

Job ID #: 8944

Test Type: Pad Subgrade (Phase 1B)

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (It/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
04/11/2019	HAA Valley Court	Lot 49	4' BFG	8"	108.9	8.3	110.2	6.9	99	95 min.	-2 to +2	191996	Pass
04/11/2019	HAA Valley Court	Lot 52	4' BFG	8"	119.2	11.3	123.8	10.0	96	95 min.	-2 to +2	191963	Pass
04/16/2019	HAA Valley Court	Lot 55	3' BFG	10"	108.2	8.8	110.2	6.9	98	95 min.	-2 to +2	191996	Pass
04/16/2019	HAA Valley Court	Lot 52	3' BFG	10"	123.2	8.3	126.0	9.3	98	95 min.	-2 to +2	191995	Pass
04/16/2019	HAA Valley Court	Lot 49	5' BFG	10"	122.6	8.7	123.8	10.0	99	98 min.	-2 to +2	191963	Pass
04/17/2019	Barun Valley Place	Lot 93	3' BFG	10"	122.2	8.5	123.8	10.0	99	95 min.	-2 to +2	191963	Pass
04/17/2019	Barun Valley Place	Lot 96	5' BFG	10"	119.6	8.8	122.1	10.0	98	98 min.	-2 to +2	192000	Pass
04/18/2019	Barun Valley Place	Lot 81	4' BFG	10"	123.2	9.5	125.3	10.1	98	95 min.	-2 to +2	191998	Pass
04/18/2019	Nubra Valley Road	Lot 76	5' BFG	10"	117.5	10.4	117.9	12.0	100	98 min.	-2 to +2	191990	Pass
04/18/2019	Nubra Valley Road	Lot 64	5' BFG	10"	114.8	11.1	117.2	12.3	98	98 min.	-2 to +2	191990	Pass
04/18/2019	Nubra Valley Road	Lot 74	3' BFG	10"	130.3	7.6	129.9	8.0	100	95 min.	-2 to +2	191995	Pass
04/18/2019	Barun Valley Place	Lot 79	4' BFG	10"	118.8	11.0	120.4	11.1	99	95 min.	-2 to +2	191990	Pass
04/19/2019	Nubra Valley Road	Lot 67	1' BFG	10"	119.4	8.5	125.3	10.1	95	95 min.	-2 to +2	191998	Pass
04/23/2019	Barun Valley Place	Lot 80	4' BFG	10"	124.0	8.9	125.3	10.1	99	95 min.	-2 to +2	191998	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (5-10 feet) (Phase 1B) Test Type:

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (lt/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
04/17/2019	HAA Valley Court	Lot 49	5' BFG	10"	100.6	10.2	102.2	8.6	98	98 min.	-2 to +2	191996	Pass
04/17/2019	HAA Valley Court	Lot 48	7' BFG	10"	120.0	8.9	121.2	10.0	99	98 min.	-2 to +2	191957	Pass
04/17/2019	HAA Valley Court	Lot 53	5' BFG	10"	123.2	8.5	125.3	10.1	98	98 min.	-2 to +2	191998	Pass
04/18/2019	HAA Valley Court	Lot 48	6' BFG	10"	125.9	8.4	125.3	10.1	100	98 min.	-2 to +2	191998	Pass
04/29/2019	Barun Valley Place	Lot 97	7' BFG	10"	122.5	8.6	124.6	9.7	98	98 min.	-2 to +2	191963	Pass
04/29/2019	Barun Valley Place	Lot 96	5' BFG	10"	115.7	7.5	118.4	9.0	98	98 min.	-2 to +2	191999	Pass
04/29/2019	Barun Valley Place	Lot 97	6' BFG	10"	117.4	7.2	118.4	9.0	99	98 min.	-2 to +2	191999	Pass
05/01/2019	Barun Valley Place	Lot 79	5' BFG	10"	126.4	7.9	126.0	9.3	100	98 min.	-2 to +2	191995	Pass
05/07/2019	Nubra Valley Road	Lot 77	9' BFG	10"	113.8	5.7	114.8	6.0	99	98 min.	-2 to +2	191996	Pass
05/07/2019	Nubra Valley Road	Lot 75	5' BFG	10"	122.3	9.1	125.3	10.1	98	98 min.	-2 to +2	191998	Pass
05/07/2019	Nubra Valley Road	Lot 76	6' BFG	10"	121.2	8.0	123.8	10.0	98	98 min.	-2 to +2	191963	Pass
05/08/2019	Nubra Valley Road	Lot 76	7' BFG	10"	124.5	7.9	126.9	9.6	98	98 min.	-2 to +2	191998	Pass
05/08/2019	Nubra Valley Road	Lot 77	8' BFG	10"	124.0	7.9	126.0	9.3	98	98 min.	-2 to +2	191995	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Job ID #: 8944

Test Type:

Pad Subgrade (5-10 feet) (Phase 1B)

Max Dry Direct Field Dry Field Opt. Moisture Density Depth of Density % Proctor Street Moisture Spec. ( Lot / Sta. Pass Date Trans. Density Moisture ( Spec. (%) Lab # Test (corr) Comp. (corr) (%) %) Used (lb/ft3) %) (lt/ft3) 04/23/2019 Barun Valley Place Lot 78 6' BFG 12" 123.8 8.6 125.3 10.1 99 98 min. -2 to +2 191998 Pass



**Moisture Vs. Density** 



Reviewed By: Jerald W Grossarth



**Moisture Vs. Density** 





**Moisture Vs. Density** 



Reviewed By: Jerald W Grossarth



**Moisture Vs. Density** 



Reviewed By:

Jerald W Grossarth



**Moisture Vs. Density** 



Reviewed By: Jerald W Grossarth



**Moisture Vs. Density** 



Reviewed By: Jerald W Grossarth



**Moisture Vs. Density** 



Fores LL	ProTeX the P 1102 W. South Tempe, AZ 85	Years LLCern Ave., Ste. 4Office: (6282Fax: (602	02)-272-7891 ) 272-7892		Soils Summa	ry
Client:	Pulte Tucson Lan	1	ProTeX	K Job No:	8944	
Project Name:	Rancho Vistoso		ProTeX	Lab No:	191998 - Phoenix	
Job Name:	5X and 5W Mass	Grading	Date I	Received:	3/28/2019	
Material:	Native (On-Site)		San	pled By:	Joseph Navarro	
Material Supplier:	-		Date	Sampled:	3/25/2019	
Sample Location:	Lot 91 (#4)		Subn	nitted By:	Joseph Navarro	
Plasticity In Liquid Limit Plastic Limit Plasticity Index	NA NA NA NA	Expansion Inde 0 - 20 21 - 51 52 - 90 91 - 130 > 130	x, (EI) Potential Very I Me Potential Very Very Very Very	Expansio y Low ow dium ligh y High	n Expansi	NA
Percent Swell	of Soil				ASTM D698	3-A
		pH and	Resistivity		Moisture Density	(Proctor)
% Swell	NV				Max. Dry Density	122.3
Notes:		pH Reading:	NA		Opt. Moisture %	11.2
		Resistivity (ohms	-cm) NA	Co	orr. Max. Dry Density	125.3
		Class:		С	orr. Opt. Moisture %	10.2
		Symbol:			% Rock	10

Moisture Vs. Density





**Moisture Vs. Density** 



PHOENIX 1102 West Southern Avenue, Suite 4 Tempe, Arizona 85282 Dispatch 602-272-7890 (o) 602-272-PTX1 (7891) (f) 602-272-7892



TUCSON 916 West Grant Road Tucson, Arizona 85705 Dispatch 520-352-0150 (o) 520-352-0150 (f) 520-731-9344

March 18, 2020 Pulte Tucson Land - MS-1021 P.O. Box 3660 Portland, OR 97208

#### Re: Building Pad-Post-Tension Foundation

5X and 5W Mass Grading @ Rancho Vistoso Valley Vista Lot #: 128-168 (Phase 1C) Permit #:

To Whom It May Concern:

ProTeX Job ID#: 0234Dev-3579-8944

In accordance with your request ProTeX has completed observation, moisture and density testing as a part of the construction of the building pads associated with the aforementioned development. Surface clearing, over-excavation, preparation of subgrade, and compaction of subgrade/fill soils are in accordance with the specifications included in the Soil Investigation conducted by ProTeX the PT Xperts, LLC., (Job No. 7466), dated February 20, 2018.

Field observations were made to ensure that the site was cleared of all vegetation and structures, site was overexcavated to a depth of 1 foot and exposed subgrade soils were scarified. Testing was performed to confirm moisture conditioning and compaction efforts are in compliance with the recommendations of the aforementioned geotechnical report. Field Density tests are enclosed. Based on the observations, laboratory testing, and field density testing, a bearing value of 1250psf at finished grade bearing on 1 foot of engineered fill is assigned for post-tensioned foundation systems. Building Pads are certified for one year from the date of this letter.

Areas in the building pad that are disturbed as a result of construction activities should be re-compacted to specified density. Inspection of foundation bearing soils prior to placement of concrete is recommended. Proper drainage should be maintained at all times away from structures. Following the construction of buildings and prior to occupancy, it is recommended that drainage away from the structure should be inspected under the supervision of a registered professional engineer in the civil or geotechnical field.

Submitted by: ProTeX - the PT Xperts, L.L.C.



Jones Tembo, P.E.

[118845620]



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (Phase 1C) Test Type:

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (lt/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
04/16/2019	Geyser Valley Street	Lot 165	2' BFG	10"	108.9	7.3	114.8	6.0	95	95 min.	-2 to +2	191996	Pass
04/16/2019	Geyser Valley Street	Lot 168	3' BFG	10"	110.3	8.0	114.8	6.0	96	95 min.	-2 to +2	191996	Pass
04/16/2019	Geyser Valley Street	Lot 162	2' BFG	10"	115.3	6.7	117.2	5.6	98	95 min.	-2 to +2	191996	Pass
04/17/2019	Harau Valley Road	Lot 128	4' BFG	10"	120.0	8.9	125.3	10.1	96	95 min.	-2 to +2	191998	Pass
04/18/2019	Geyser Valley Street	Lot 163	1' BFG	10"	123.6	6.9	123.6	7.6	100	95 min.	-2 to +2	191999	Pass
04/18/2019	Geyser Valley Street	Lot 166	2' BFG	10"	124.0	9.9	125.3	10.1	99	95 min.	-2 to +2	191998	Pass
04/18/2019	Geyser Valley Street	Lot 167	1' BFG	10"	121.7	9.7	121.2	10.0	100	95 min.	-2 to +2	191957	Pass
04/23/2019	Danum Valley Drive	Lot 157	3' BFG	10"	119.7	8.7	123.5	9.5	97	95 min.	-2 to +2	192000	Pass
04/23/2019	Danum Valley Drive	Lot 155	1' BFG	12"	120.4	8.4	123.5	9.5	97	95 min.	-2 to +2	192000	Pass
04/23/2019	Danum Valley Drive	Lot 159	3' BFG	10"	121.5	7.8	123.5	9.5	98	95 min.	-2 to +2	192000	Pass
04/23/2019	Danum Valley Drive	Lot 153	2' BFG	10"	120.9	8.2	123.5	9.5	98	95 min.	-2 to +2	192000	Pass
05/09/2019	Danum Valley Drive	Lot 159	2' BFG	10"	125.2	9.5	126.0	9.3	99	95 min.	-2 to +2	191995	Pass
05/09/2019	Harau Valley Road	Lot 130	4' BFG	10"	126.6	8.3	126.8	9.0	100	95 min.	-2 to +2	191995	Pass
05/13/2019	Danum Valley Drive	Lot 164	2' BFG	6"	120.5	8.7	122.1	10.0	99	95 min.	-2 to +2	192000	Pass
05/13/2019	Danum Valley Drive	Lot 168	2' BFG	6"	120.7	8.9	122.1	10.0	99	95 min.	-2 to +2	192000	Pass
05/13/2019	Danum Valley Drive	Lot 158	FG	6"	118.9	8.2	122.1	10.0	97	95 min.	-2 to +2	192000	Pass
05/13/2019	Danum Valley Drive	Lot 160	FG	6"	119.8	8.5	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
05/13/2019	Danum Valley Drive	Lot 161	2' BFG	6"	121.3	9.1	122.1	10.0	99	95 min.	-2 to +2	192000	Pass
05/14/2019	Geyser Valley Street	Lot 133	1' BFG	6"	120.2	10.5	120.2	12.1	100	95 min.	-2 to +2	192001	Pass
05/14/2019	Geyser Valley Street	Lot 135	3' BFG	6"	118.8	10.2	120.2	12.1	99	95 min.	-2 to +2	192001	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (Phase 1C) Test Type:

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (It/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
05/15/2019	Danum Valley Drive	Lot 157	FG	6"	119.8	11.3	120.2	12.1	100	95 min.	-2 to +2	192001	Pass
05/15/2019	Danum Valley Drive	Lot 166	1' BFG	6"	119.9	8.2	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
05/15/2019	Danum Valley Drive	Lot 168	1' BFG	6"	121.2	8.9	122.1	10.0	99	95 min.	-2 to +2	192000	Pass
05/15/2019	Danum Valley Drive	Lot 159	FG	6"	122.1	8.3	122.1	10.0	100	95 min.	-2 to +2	192000	Pass
05/15/2019	Geyser Valley Street	Lot 161	FG	6"	119.1	11.5	120.2	12.1	99	95 min.	-2 to +2	192001	Pass
05/16/2019	Geyser Valley Street	Lot 134	4' BFG	6"	119.9	11.7	120.6	11.9	99	95 min.	-2 to +2	192001	Pass
05/16/2019	Geyser Valley Street	Lot 137	3' BFG	6"	119.4	11.3	120.6	11.9	99	95 min.	-2 to +2	192001	Pass
05/16/2019	Geyser Valley Street	Lot 142	2' BFG	6"	119.7	11.4	120.6	11.9	99	95 min.	-2 to +2	192001	Pass
05/16/2019	Geyser Valley Street	Lot 140	2' BFG	6"	118.5	10.2	120.6	11.9	98	95 min.	-2 to +2	192001	Pass
05/16/2019	Geyser Valley Street	Lot 137	2' BFG	6"	117.9	10.6	120.6	11.9	98	95 min.	-2 to +2	192001	Pass
05/16/2019	Harau Valley Road	Lot 128	FG	6"	118.6	10.1	120.6	11.9	98	95 min.	-2 to +2	192001	Pass
05/16/2019	Harau Valley Road	Lot 131	2' BFG	6"	118.2	10.4	120.6	11.9	98	95 min.	-2 to +2	192001	Pass
05/20/2019	Geyser Valley Street	Lot 136	FG	6"	119.5	11.6	120.2	12.1	99	95 min.	-2 to +2	192001	Pass
05/20/2019	Geyser Valley Street	Lot 139	FG	6"	118.5	11.4	120.2	12.1	99	95 min.	-2 to +2	192001	Pass
05/20/2019	Geyser Valley Street	Lot 133	FG	6"	120.7	12.3	120.2	12.1	100	95 min.	-2 to +2	192001	Pass
05/20/2019	Geyser Valley Street	Lot 141	FG	6"	120.2	11.3	120.2	12.1	100	95 min.	-2 to +2	192001	Pass
07/10/2019	Geyser Valley Street	Lot 146	FG	8"	119.2	8.7	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
07/10/2019	Geyser Valley Street	Lot 150	FG	8"	119.3	8.9	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
07/10/2019	Geyser Valley Street	Lot 152	FG	8"	119.7	9.1	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
07/10/2019	Geyser Valley Street	Lot 148	FG	8"	118.9	8.6	122.1	10.0	97	95 min.	-2 to +2	192000	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad (Phase 1C) Test Type:

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (lt/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
07/10/2019	Geyser Valley Street	Lot 142	FG	8"	120.1	9.4	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
07/10/2019	Geyser Valley Street	Lot 138	FG	8"	119.7	9.1	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
07/10/2019	Geyser Valley Street	Lot 140	FG	8"	118.9	8.3	122.1	10.0	97	95 min.	-2 to +2	192000	Pass
07/10/2019	Geyser Valley Street	Lot 132	FG	8"	119.8	8.9	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
07/10/2019	Geyser Valley Street	Lot 134	FG	8"	119.3	8.7	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
07/10/2019	Geyser Valley Street	Lot 137	FG	8"	119.5	8.7	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
07/10/2019	Geyser Valley Street	Lot 144	FG	8"	120.5	9.4	122.1	10.0	99	95 min.	-2 to +2	192000	Pass
07/12/2019	Geyser Valley Street	Lot 149	FG	8"	117.8	8.1	122.1	10.0	97	95 min.	-2 to +2	192000	Pass
07/12/2019	Geyser Valley Street	Lot 135	FG	8"	119.9	9.2	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
07/12/2019	Geyser Valley Street	Lot 143	FG	8"	118.1	8.8	122.1	10.0	97	95 min.	-2 to +2	192000	Pass
07/12/2019	Geyser Valley Street	Lot 147	FG	8"	119.7	9.6	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
07/12/2019	Geyser Valley Street	Lot 145	FG	8"	117.9	8.4	122.1	10.0	97	95 min.	-2 to +2	192000	Pass
07/12/2019	Harau Valley Road	Lot 129	FG	8"	120.3	9.5	122.1	10.0	99	95 min.	-2 to +2	192000	Pass
07/12/2019	Harau Valley Road	Lot 130	FG	8"	117.7	8.3	122.1	10.0	96	95 min.	-2 to +2	192000	Pass
07/12/2019	Harau Valley Road	Lot 131	FG	8"	116.9	8.2	122.1	10.0	96	95 min.	-2 to +2	192000	Pass
07/15/2019	Geyser Valley Street	Lot 151	FG	8"	119.7	8.7	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
10/09/2019	Geyser Valley Street	Lot 165	FG	8"	118.5	8.9	122.1	10.0	97	95 min.	-2 to +2	192000	Pass
10/09/2019	Geyser Valley Street	Lot 168	FG	8"	119.3	9.6	122.1	10.0	98	95 min.	-2 to +2	192000	Pass
10/09/2019	Geyser Valley Street	Lot 163	FG	8"	117.9	8.6	122.1	10.0	97	95 min.	-2 to +2	192000	Pass
10/09/2019	Geyser Valley Street	Lot 162	FG	8"	118.6	9.1	122.1	10.0	97	95 min.	-2 to +2	192000	Pass



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Lot: Earthwork

Cross Streets: La Canada Drive and Moore Road

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Test Type: Pad (Phase 1C)

Max Dry Field Dry Field Direct Opt. Moisture Depth of Density % Density Proctor Date Street Lot / Sta. Trans. Density Moisture ( Moisture Spec. ( Pass Comp. Test (corr) Spec. (%) Lab # Used (lb/ft3) %) (corr) (%) %) (lt/ft3) 10/22/2019 Geyser Valley Street Lot 167 FG 8" 121.4 8.9 122.1 10.0 99 95 min. -2 to +2 192000 Pass FG 8" 120.2 8.7 122.1 10.0 98 -2 to +2 192000 Pass 10/22/2019 Geyser Valley Street Lot 166 95 min. 03/18/2020 Danum Valley Drive Lot 155 FG 10" 132.3 8.1 133.1 7.0 99 95 min. -2 to +2 191995 Pass 03/18/2020 Danum Valley Drive Lot 154 FG 10" 130.6 8.8 133.1 7.0 98 95 min. -2 to +2 191995 Pass 03/18/2020 Danum Valley Drive FG 10" 8.6 129.9 8.0 100 -2 to +2 191995 Pass Lot 156 129.5 95 min. 03/18/2020 Danum Valley Drive FG 10" 122.4 9.8 126.0 9.3 97 -2 to +2 191995 Pass Lot 158 95 min. 03/18/2020 Danum Valley Drive Lot 159 FG 10" 9.2 126.0 9.3 -2 to +2 191995 Pass 123.9 98 95 min. 03/18/2020 Danum Valley Drive Lot 160 FG 10" 130.1 8.9 129.9 8.0 100 95 min. -2 to +2 191995 Pass 03/18/2020 Danum Valley Drive Lot 153 FG 10" 133.1 7.0 99 95 min. -2 to +2 191995 131.7 8.1 Pass Pass 03/18/2020 Danum Valley Drive Lot 157 FG 10" 121.8 9.7 126.0 9.3 97 95 min. -2 to +2 191995



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Cross Streets: La Canada Drive and Moore Road Lot: Earthwork

Job ID #: 8944

Test Type: Pad (Phase 1C) (Bank)

Max Dry Field Dry Field Direct Opt. Moisture Depth of Density % Density Proctor Date Street Lot / Sta. Trans. Density Moisture ( Moisture Spec. ( Pass Comp. Test (corr) Spec. (%) Lab # (corr) (%) Used (lb/ft3) %) %) (lt/ft3) **Bank Protection Access** 05/21/2019 Lot 138 FG 6" 10.3 120.2 12.1 98 -2 to +2 192001 117.8 95 min. Pass Road Bank Protection Access 6" -2 to +2 05/21/2019 Lot 145 FG 118.0 10.8 120.2 12.1 98 95 min. 192001 Pass Road **Bank Protection Access** 05/21/2019 1' BFG 6" 119.2 120.2 12.1 99 -2 to +2 192001 Pass Lot 134 10.4 95 min. Road **Bank Protection Access** 05/21/2019 Lot 151 3' BFG 6" 117.9 10.4 120.2 12.1 98 95 min. -2 to +2 192001 Pass Road Bank Protection Access 05/21/2019 7' BFG 6" -2 to +2 STA 56+00 120.5 10.9 120.2 12.1 100 98 min. 192001 Pass Road **Bank Protection Access** 05/21/2019 STA 60+00 5' BFG 6" 119.4 11.2 120.2 12.1 99 -2 to +2 192001 Pass 98 min. Road Bank Protection Access 6" 05/23/2019 Lot 152 FG 118.9 11.6 120.2 12.1 99 95 min. -2 to +2 192001 Pass Road **Bank Protection Access** STA 59+00 6" 12.1 -2 to +2 05/23/2019 2' BFG 119.4 11.2 120.2 99 95 min. 192001 Pass Road



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

Pad Subgrade (Phase 1C) Test Type:

Cross Streets: La Canada Drive and Moore Road

Lot: Earthwork

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (lt/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
04/11/2019	Geyser Valley Street	Lot 134	5' BFG	8"	111.2	7.6	112.4	6.5	99	98 min.	-2 to +2	191996	Pass
04/11/2019	Geyser Valley Street	Lot 152	5' BFG	8"	112.9	7.9	114.8	6.0	98	98 min.	-2 to +2	191996	Pass
04/11/2019	Geyser Valley Street	Lot 132	6' BFG	8"	118.6	9.7	118.4	9.0	100	98 min.	-2 to +2	191999	Pass
04/11/2019	Geyser Valley Street	Lot 146	5' BFG	8"	108.0	8.7	110.2	6.9	98	98 min.	-2 to +2	191996	Pass
04/11/2019	Geyser Valley Street	Lot 149	5' BFG	8"	113.5	7.8	114.8	6.0	99	98 min.	-2 to +2	191996	Pass
04/11/2019	Geyser Valley Street	Lot 143	3' BFG	8"	112.1	7.2	114.8	6.0	98	95 min.	-2 to +2	191996	Pass
04/11/2019	Geyser Valley Street	Lot 137	4' BFG	8"	114.8	10.2	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
04/11/2019	Geyser Valley Street	Lot 140	4' BFG	8"	114.2	8.4	118.4	9.0	96	95 min.	-2 to +2	191999	Pass
04/15/2019	Geyser Valley Street	Lot 168	3' BFG	10"	114.8	8.5	118.4	9.0	97	95 min.	-2 to +2	191999	Pass
04/15/2019	Harau Valley Road	Lot 128	5' BFG	10"	106.5	5.9	106.1	7.8	100	98 min.	-2 to +2	191996	Pass
04/15/2019	Harau Valley Road	Lot 131	5' BFG	10"	116.7	9.7	118.4	9.0	99	98 min.	-2 to +2	191999	Pass
04/15/2019	Geyser Valley Street	Lot 165	4' BFG	10"	111.0	9.2	116.9	9.5	95	95 min.	-2 to +2	191999	Pass
04/15/2019	Geyser Valley Street	Lot 161	3' BFG	10"	107.6	6.3	108.1	7.3	100	95 min.	-2 to +2	191996	Pass
04/15/2019	Geyser Valley Street	Lot 137	4' BFG	10"	105.9	9.2	106.1	7.8	100	95 min.	-2 to +2	191996	Pass
04/15/2019	Geyser Valley Street	Lot 152	6' BFG	10"	111.9	7.3	114.8	6.0	98	98 min.	-2 to +2	191996	Pass
04/15/2019	Geyser Valley Street	Lot 134	5' BFG	10"	112.2	4.5	114.8	6.0	98	98 min.	-2 to +2	191996	Pass
04/15/2019	Geyser Valley Street	Lot 143	3' BFG	10"	115.8	7.2	118.4	9.0	98	95 min.	-2 to +2	191999	Pass
04/15/2019	Geyser Valley Street	Lot 146	5' BFG	10"	117.1	7.1	118.4	9.0	99	98 min.	-2 to +2	191999	Pass
04/15/2019	Geyser Valley Street	Lot 149	6' BFG	10"	113.4	7.5	114.8	6.0	99	98 min.	-2 to +2	191996	Pass
04/15/2019	Geyser Valley Street	Lot 140	4' BFG	10"	123.7	8.4	126.0	9.3	98	95 min.	-2 to +2	191995	Pass



Job ID #: 8944

# Field Density Summary Report

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Cross Streets: La Canada Drive and Moore Road Lot: Earthwork

Test Type: Pad Subgrade (Phase 1C)

Max Dry Field Dry Field Opt. Direct Moisture Depth of Density % Proctor Density Pass Date Street Lot / Sta. Trans. Density Moisture ( Moisture Spec. ( Spec. (%) Lab # Test (corr) Comp. (corr) (%) Used (lb/ft3) %) %) (lt/ft3) Danum Valley Drive 04/16/2019 Lot 160 4' BFG 10" 108.6 7.4 110.2 6.9 99 95 min. -2 to +2 191996 Pass 04/16/2019 Danum Valley Drive Lot 157 5' BFG 10" 105.7 9.6 106.1 7.8 100 98 min. -2 to +2 191996 Pass 04/16/2019 Danum Valley Drive Lot 154 3' BFG 10" 110.9 7.1 112.4 6.5 99 95 min. -2 to +2 191996 Pass



Pulte Tucson Land Client:

Project Name: Rancho Vistoso Valley Vista

Lot: Earthwork

Cross Streets: La Canada Drive and Moore Road

Job Name: 5X and 5W Mass Grading

Job ID #: 8944

04/24/2019

Danum Valley Drive

Test Type: Pad (5-10 feet) (Phase 1C)

Max Dry Field Dry Field Direct Opt. Moisture Depth of Density % Density Proctor Pass Date Street Lot / Sta. Trans. Density Moisture ( Moisture Spec. ( Test Comp. Spec. (%) Lab# (corr) (lb/ft3) (corr) (%) Used %) %) (lt/ft3) 04/17/2019 Geyser Valley Street Lot 133 7' BFG 10" 109.4 9.1 104.1 8.2 105 98 min. -2 to +2 191996 Pass 6' BFG 10" 04/17/2019 Lot 136 110.2 7.4 110.2 6.9 100 98 min. -2 to +2 191996 Pass Geyser Valley Street 04/17/2019 Geyser Valley Street Lot 138 6' BFG 10" 100.8 9.0 102.2 8.6 99 98 min. -2 to +2 191996 Pass 10" 6.5 100 -2 to +2 191996 04/17/2019 Geyser Valley Street Lot 150 7' BFG 112.8 7.5 112.4 98 min. Pass 10" 191996 04/17/2019 Gevser Valley Street Lot 145 7' BFG 106.0 8.6 108.1 7.3 98 98 min. -2 to +2 Pass Lot 147 10" -2 to +2 192001 04/17/2019 Geyser Valley Street 8' BFG 119.0 10.4 120.2 12.1 99 98 min. Pass 98 min. 192001 04/17/2019 Geyser Valley Street Lot 148 7' BFG 10" 116.2 11.2 118.7 12.7 98 -2 to +2 Pass 04/17/2019 Harau Valley Road Lot 131 5' BFG 10" 123.2 8.5 125.3 10.1 98 98 min. -2 to +2 191998 Pass 10" -2 to +2 191957 04/18/2019 Geyser Valley Street Lot 136 5' BFG 118.5 9.8 121.2 10.0 98 98 min. Pass 04/18/2019 Geyser Valley Street Lot 133 6' BFG 10" 123.3 8.6 125.3 10.1 98 98 min. -2 to +2 191998 Pass Lot 134 5' BFG 10" -2 to +2 04/18/2019 Geyser Valley Street 115.4 7.3 118.4 9.0 98 98 min. 191999 Pass 04/18/2019 Lot 149 6' BFG 10" 8.9 9.0 98 -2 to +2 191999 Pass Geyser Valley Street 116.1 118.4 98 min. 04/18/2019 Geyser Valley Street Lot 150 6' BFG 10" 116.7 8.1 118.4 9.0 99 98 min. -2 to +2 191999 Pass 04/18/2019 Geyser Valley Street Lot 146 6' BFG 10" 111.8 7.5 112.4 6.5 99 98 min. -2 to +2 191996 Pass Danum Valley Drive Lot 157 7' BFG 10" 7.4 128.5 9.0 -2 to +2 191998 Pass 04/24/2019 125.8 98 98 min. 04/24/2019 Danum Valley Drive Lot 166 6' BFG 10" 125.3 7.6 128.5 9.0 98 98 min. -2 to +2 191998 Pass 04/24/2019 Geyser Valley Street Lot 141 5' BFG 10" 7.3 8.5 -2 to +2 191995 Pass 126.1 128.3 98 98 min. 04/24/2019 Geyser Valley Street Lot 144 5' BFG 10" 124.4 8.1 126.0 9.3 99 98 min. -2 to +2 191995 Pass Lot 149 Pass 04/24/2019 Geyser Valley Street 5' BFG 10" 123.8 9.4 125.3 10.1 99 98 min. -2 to +2 191998 98 min.

SPECIAL INSPECTIONS • GEO-TECHNICAL/ MATERIALS • LABORATORY • ENGINEERING CONSULTATION

5' BFG

10"

122.2

9.2

125.3

10.1

98

-2 to +2

191998

Pass

Lot 153



Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Mass Grading

Cross Streets: La Canada Drive and Moore Road Lot: Earthwork

Job ID #: 8944

Test Type: Pad (5-10 feet) (Phase 1C)

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture ( %)	Max Dry Density (corr) (lt/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. ( %)	Proctor Lab #	Pass
04/24/2019	Geyser Valley Street	Lot 151	5' BFG	10"	125.8	8.8	125.3	10.1	100	98 min.	-2 to +2	191998	Pass
05/09/2019	Danum Valley Drive	Lot 158	5' BFG	10"	119.0	10.0	120.2	8.5	99	98 min.	-2 to +2	191999	Pass
05/09/2019	Harau Valley Road	Lot 132	8' BFG	10"	128.8	6.9	128.3	8.5	100	98 min.	-2 to +2	191995	Pass
05/09/2019	Harau Valley Road	Lot 131	6' BFG	10"	128.6	7.4	128.3	8.5	100	98 min.	-2 to +2	191995	Pass
05/09/2019	Harau Valley Road	Lot 129	6' BFG	10"	125.2	8.0	126.0	9.3	99	98 min.	-2 to +2	191995	Pass
05/09/2019	Harau Valley Road	Lot 129	7' BFG	10"	123.1	7.8	126.0	9.3	98	98 min.	-2 to +2	191995	Pass



**Moisture Vs. Density** 





**Moisture Vs. Density** 



Reviewed By: Jerald W Grossarth



**Moisture Vs. Density** 







**Moisture Vs. Density** 





**Moisture Vs. Density** 



Per sul	ProTeX the PT 1102 W. South Tempe, AZ 85	C Xperts LLC lern Ave., Ste. 4 Offic 282 Fax:	ce: (602)-272-789 (602) 272-7892	1	:	Soils Summa	ry			
Client:	Pulte Tucson Land	1		ProTeX Job	No: 89	8944				
Project Name:	Rancho Vistoso			ProTeX Lab	No: 19	1998 - Phoenix				
Job Name:	5X and 5W Mass	Grading		Date Recei	ved: 3/2	28/2019				
Material:	Native (On-Site)			Sampled	By: Jo	seph Navarro				
Material Supplier:	-			Date Samp	led: 3/2	25/2019				
Sample Location:	Lot 91 (#4)	Submitted	By: Jo	seph Navarro						
Plasticity In Liquid Limit Plastic Limit Plasticity Index	NA NA NA NA	Expansion Index, (EI)           0 - 20           21 - 51           NA           52 - 90           91 - 130           > 130			nsion	Expansion Index EI = NA				
Percent Swell	of Soil					ASTM D698	-A			
		рН	and Resistivit	ty		Moisture Density (	Proctor)			
% Swell	NV				Ma	ax. Dry Density	122.3			
Notes:		pH Reading:		NA	O	pt. Moisture %	11.2			
		Resistivity (o	hms-cm)	NA	Corr.	Max. Dry Density	125.3			
		Class:			Corr.	Opt. Moisture %	10.2			
		Symbol:				% Rock	10			

Moisture Vs. Density





**Moisture Vs. Density** 



Reviewed By:

Jerald W Grossarth



**Moisture Vs. Density** 



Reviewed By: Jerald W Grossarth



**Moisture Vs. Density** 



Reviewed By:

Jerald W Grossarth