August 26, 2014

Kimley-Horn and Associates, Inc.
7740 N. 16th Street, Suite 300
Phoenix, Arizona 85020

Attn:  Mr. Sterling Margetts

Re:  Report of Infiltration Test Results
     Tom Jones Ford Dealership
     Yuma Road from S. Apache Road to 247th Avenue
     Buckeye, Arizona
     Terracon Project No. 65145203

Dear Mr. Margetts:

At your request, Terracon Consultants, Inc. (Terracon) has completed infiltration testing in association with the proposed Tom Jones Ford Dealership project in Buckeye, Arizona. These services were performed in general accordance with our proposal dated July 15, 2014 and subsequent Individual Project Order No. 191826000-2 dated August 6, 2014. This report presents the results of borings and double-ring infiltration testing performed at the planned locations of surface retention basins, as required by the City of Buckeye. The results of our services, including a site plan, logs of the borings, and double-ring infiltrometer test results are attached to this report.

Introduction

Based on the information provided by Kimley-Horn and Associates, Inc. (KHA), a total of six (6) surface retention basins are planned at the site. Two on-site retention basins planned at the east and west ends of the planned dealership, and four additional retention basins are planned along Yuma Road to the east of the planned dealership.

The number of tests performed within each planned retention basin was determined in accordance with Maricopa County Flood Control District (MCFCD) guidelines and based upon the bottom area of each basin. Two (2) double-ring infiltrations tests were performed in the far west basin, four (4) double-ring infiltrations tests were performed within the far east basin, and three (3) double-ring infiltrations tests were performed within each intermediate basin. The infiltration tests were performed near the planned bottom elevations of the retention basins, which is approximately four (4) to (5) feet below existing site grades. A backhoe was used to excavate a pit to the infiltration test depths. In addition to double-ring infiltrations testing, a boring extending to a minimum depth of 10 feet below the planned bottom of basin elevation (i.e., approximate 16 feet below existing grade) was performed adjacent to each double-ring test location. The approximate boring and infiltration test locations are shown on Exhibit A-1, attached. The following photograph depicts a typical infiltration test setup at the project site.
Field Exploration

A total of 18 test borings were drilled at the site on August 19, 2014. The borings were drilled to depths ranging from 15 to 16½ feet below the ground surface at the approximate locations shown on Exhibit A-1. The test borings were advanced with a truck-mounted CME-75 drill rig utilizing 8-inch diameter hollow-stem augers. Logs of the borings are presented on Exhibits A-2 through A-19, attached.

During the drilling operations, a field geologist logged the borings, recorded the results of penetration tests, and collected representative samples. At selected intervals, samples of the subsurface materials were taken by driving ring-lined barrel and standard split-spoon samplers.

Groundwater Conditions

Groundwater was not observed in any test boring at the time of field exploration, nor when checked upon completion of drilling. These observations represent groundwater conditions at the time of the field exploration and may not be indicative of other times, or at other locations. Groundwater conditions can change with varying seasonal and weather conditions, and other factors. Based on information obtained from the Arizona Department of Water Resources – Groundwater Data website (https://gisweb.azwater.gov/waterresourcedata/GWSI.aspx), the depth to regional groundwater was measured in January 2014 to be approximately 155 feet below the ground surface (approximate elevation of 840 feet above mean sea level) at an Arizona Department of Water Resources (ADWR) monitored well site (Local I.D. B-01-21DBB) located approximately 1½ miles southeast of the site.

Double-Ring Infiltrometer Testing

Test results from infiltration testing conducted within the footprints of the planned surface retention basins are presented on Exhibits A-20 through A-37, and are summarized in the following table. The infiltration tests were performed in general accordance with ASTM D 3385 utilizing a double-ring infiltrometer in accordance with MCFCD guidelines. Refer to Exhibit A-1 (attached) for the approximate infiltration test locations.

<table>
<thead>
<tr>
<th>Test</th>
<th>Visual Soil Classification</th>
<th>Field Infiltration Rate (inches/hour)</th>
<th>De-Rating Factor²</th>
<th>Design Infiltration Rate (inches/hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>INF-1</td>
<td>Silty Sand w/ Gravel (SM)</td>
<td>1.25</td>
<td>2</td>
<td>0.63</td>
</tr>
<tr>
<td>INF-2</td>
<td>Silty Sand w/ Gravel (SM)</td>
<td>3.06</td>
<td>2</td>
<td>1.53</td>
</tr>
<tr>
<td>INF-3</td>
<td>Silty Sand w/ Gravel (SM)</td>
<td>14.0¹</td>
<td>2</td>
<td>7.0</td>
</tr>
<tr>
<td>INF-4</td>
<td>Silty Clayey Sand (SC-SM)</td>
<td>1.42</td>
<td>2</td>
<td>0.71</td>
</tr>
<tr>
<td>INF-5</td>
<td>Clayey Sand w/ Gravel (SC)</td>
<td>0.13</td>
<td>2</td>
<td>0.07</td>
</tr>
<tr>
<td>INF-6</td>
<td>Silty Clayey Sand w/ Gravel (SC-SM)</td>
<td>1.34</td>
<td>2</td>
<td>0.67</td>
</tr>
</tbody>
</table>
## Infiltration Test Results

<table>
<thead>
<tr>
<th>Test</th>
<th>Visual Soil Classification</th>
<th>Field Infiltration Rate (inches/hour)</th>
<th>De-Rating Factor</th>
<th>Design Infiltration Rate (inches/hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>INF-7</td>
<td>Silty Clayey Sand w/ Gravel (SC-SM)</td>
<td>0.68</td>
<td>2</td>
<td>0.34</td>
</tr>
<tr>
<td>INF-8</td>
<td>Silty Gravel w/ Sand (GM)</td>
<td>14.0&lt;sup&gt;1&lt;/sup&gt;</td>
<td>2</td>
<td>7.0</td>
</tr>
<tr>
<td>INF-9</td>
<td>Silty Clayey Sand w/ Gravel (SC-SM)</td>
<td>2.03</td>
<td>2</td>
<td>1.02</td>
</tr>
<tr>
<td>INF-10</td>
<td>Silty Clayey Sand w/ Gravel (SC-SM)</td>
<td>2.46</td>
<td>2</td>
<td>1.23</td>
</tr>
<tr>
<td>INF-11</td>
<td>Poorly Graded Sand w/ Silt and Gravel (SP-SM)</td>
<td>2.05</td>
<td>2</td>
<td>1.03</td>
</tr>
<tr>
<td>INF-12</td>
<td>Silty Sand w/ Gravel (SM)</td>
<td>4.71</td>
<td>2</td>
<td>2.36</td>
</tr>
<tr>
<td>INF-13</td>
<td>Poorly Graded Sand w/ Gravel (SP)</td>
<td>6.54</td>
<td>2</td>
<td>3.27</td>
</tr>
<tr>
<td>INF-14</td>
<td>Silty Sand w/ Gravel (SM)</td>
<td>2.61</td>
<td>2</td>
<td>1.31</td>
</tr>
<tr>
<td>INF-15</td>
<td>Silty Sand w/ Gravel (SM)</td>
<td>6.01</td>
<td>2</td>
<td>3.01</td>
</tr>
<tr>
<td>INF-16</td>
<td>Silty Sand w/ Gravel (SM)</td>
<td>4.03</td>
<td>2</td>
<td>2.02</td>
</tr>
<tr>
<td>INF-17</td>
<td>Silty Clayey Sand w/ Gravel (SC-SM)</td>
<td>2.14</td>
<td>2</td>
<td>1.07</td>
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<tr>
<td>INF-18</td>
<td>Silty Sand w/ Gravel (SM)</td>
<td>2.28</td>
<td>2</td>
<td>1.14</td>
</tr>
</tbody>
</table>

<sup>1</sup> Free-draining conditions were observed at test locations INF-3 and INF-8 and faster rates than those shown in the table were measured in the field. However, the test method is generally valid up to a rate of 14 inches/hour, and we recommend this value be used during infiltration basin design.

<sup>2</sup> The de-rating factor was obtained from Table 9.2 of the MCFCD Drainage Design Manual – Hydraulics dated August 15, 2013.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,
Terraccon Consultants, Inc.

Jesse R. Huston, P.E.
Senior Project Manager

Scott D. Neely, P.E.
Principal

Attachments:
- Exhibit A-1: Site Plan and Test Locations
- Exhibit A-2 thru A-19: Boring Logs
- Exhibit A-20 thru A-37: Infiltration Test Results
## Location

See Exhibit A-1

## Depth Log

<table>
<thead>
<tr>
<th>Depth (Ft.)</th>
<th>Sample Type</th>
<th>Field Test Results</th>
<th>Water Content (%)</th>
<th>Dry Unit Weight (pcf)</th>
<th>Atterberg Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.0</td>
<td>Silt Clayey Sand with Gravel (SC-SM), light brown, dense, moderate cementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.0</td>
<td>Silt Clayey Sand with Gravel (SC-SM), light brown, dense, moderate cementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.5</td>
<td>Boring Terminated at 16.5 Feet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

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**Notes:**

- Advancement Method: Hollow Stem Auger
- Abandonment Method: Backfilled with soil cuttings upon completion.

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**WATER LEVEL OBSERVATIONS**

Groundwater not encountered

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**Terreno**

4685 S. Ash Ave., Suite H-4
Tempe, Arizona

Boring Started: 8/19/2014
Boring Completed: 8/19/2014
Drill Rig: CME-75
Driller: D&S
Project No.: 65145203
Exhibit: A-2
## BORING LOG NO. BB-2

**PROJECT:** Tom Jones Ford Dealership  
**SITE:** Yuma Rd. from S. Apache Rd. to 247th Ave.  
Buckeye, Arizona  

**CLIENT:** Kimley-Horn and Associates, Inc.  
Phoenix, Arizona

**LOCATION:** See Exhibit A-1

### Graphic Log

<table>
<thead>
<tr>
<th>DEPTH (Ft.)</th>
<th>WATER LEVEL OBSERVATIONS</th>
<th>FIELD TEST RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SILTY SAND WITH GRAVEL (SM),** brown, medium dense

**SILTY CLAYEY SAND WITH GRAVEL (SC-SM),** brown to light brown, medium dense, weak cementation

**SILTY SAND (SM),** brown, dense

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**Boring Terminated at 16.5 Feet**

Stratification lines are approximate. In-situ, the transition may be gradual.

**Hammer Type:** Automatic

**Advancement Method:** Hollow Stem Auger

**Abandonment Method:** Backfilled with soil cuttings upon completion.

### Field Test Results

<table>
<thead>
<tr>
<th>DEPTH (Ft.)</th>
<th>WATER CONTENT (%)</th>
<th>DRY UNIT WEIGHT (pcf)</th>
<th>ATTERBERG LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-7-13</td>
<td>N=20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-24-21</td>
<td>N=45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9-19-24</td>
<td>N=43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WATER LEVEL OBSERVATIONS**

Groundwater not encountered

**Drill Rig:** CME-75  
**Driller:** D&S  
**Project No.:** 65145203  
**Exhibit:** A-3

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**Notes:**

Boring Started: 8/19/2014  
Boring Completed: 8/19/2014

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**Location:** 4625 S. Ash Ave., Suite H-4  
Tempe, Arizona
**BORING LOG NO. BB-3**

**PROJECT:** Tom Jones Ford Dealership  
**SITE:** Yuma Rd. from S. Apache Rd. to 247th Ave.  
Buckeye, Arizona  

**CLIENT:** Kimley-Horn and Associates, Inc.  
Phoenix, Arizona

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**LOCATION**  
See Exhibit A-1

**DEPTH**

<table>
<thead>
<tr>
<th>Depth (Ft.)</th>
<th>Sample Type</th>
<th>Field Test Result</th>
<th>Water Content (%)</th>
<th>Dry Unit Weight (pcf)</th>
<th>Atterberg Limits</th>
<th>Percent Fineness</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**POORLY GRADED SAND WITH GRAVEL (SP), brown**

Boring Terminated at 16.5 Feet

**SILTY SAND WITH GRAVEL (SM), brown to light brown, medium dense to dense, weak cementation**

---

**Field Test Results**

- 21-28-21  
  N=49

- 8-8-16  
  N=24

- 15-31-50/5"

---

**Notes:**

- Advancement Method: Hollow Stem Auger
- Abandonment Method: Backfilled with soil cuttings upon completion.

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**WATER LEVEL OBSERVATIONS**

- Groundwater not encountered

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**Drill Rig:** CME-75  
**Driller:** D&S

**Boring Started:** 8/19/2014  
**Boring Completed:** 8/19/2014

**Project No.:** 65145203  
** Exhibit:** A-4

---

**Hammer Type:** Automatic  
**Stratification lines are approximate. In-situ, the transition may be gradual.**
SILTY CLAYEY SAND (SC-SM), brown to light brown, very dense, weak to moderate cementation

SILTY GRAVEL WITH SAND (GM), brown, dense

very dense, weak to moderate cementation

Boring Terminated at 16.5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Backfilled with soil cuttings upon completion.

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Boring Started: 8/19/2014  Boring Completed: 8/19/2014

Drill Rig: CME-75  Driller: D&S

Project No.: 65145203  Exhibit: A-5
## BORING LOG NO. BB-5

**PROJECT:** Tom Jones Ford Dealership  
**CLIENT:** Kimley-Horn and Associates, Inc.  
**SITE:** Yuma Rd. from S. Apache Rd. to 247th Ave. Buckeye, Arizona  

**GRAPHIC LOG**  
**LOCATION** See Exhibit A-1  
**DEPTH**  

<table>
<thead>
<tr>
<th>DEPTH (FT.)</th>
<th>FIELD TEST RESULTS</th>
<th>WATER CONTENT (%)</th>
<th>DRY UNIT WEIGHT (pcf)</th>
<th>PERCENT FINES</th>
<th>ATTERBERG LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CLAYEY SAND WITH GRAVEL (SC),** brown, dense, weak cementation  
**SILTY SAND WITH GRAVEL (SM),** light brown, very dense, weak to moderate cementation  
**SILTY CLAYEY SAND WITH GRAVEL (SC-SM),** light brown, dense, weak to moderate cementation  

**Boring Terminated at 16.5 Feet**  

Stratification lines are approximate. In-situ, the transition may be gradual.  

**Hammer Type:** Automatic  

**Advancement Method:** Hollow Stem Auger  
**Abandonment Method:** Backfilled with soil cuttings upon completion.  

**WATER LEVEL OBSERVATIONS**  
Groundwater not encountered  

**Notes:**  
Boring Started: 8/19/2014  
Boring Completed: 8/19/2014  
Drill Rig: CME-75  
Driller: D&S  
Project No.: 65145203  
Exhibit: A-6
Boring Terminated at 15.5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Backfilled with soil cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Boring Started: 8/19/2014  Boring Completed: 8/19/2014

Drill Rig: CME-75  Driller: D&S

Project No.: 65145203  Exhibit: A-7
Yuma Rd. from S. Apache Rd. to 247th Ave. 
Buckeye, Arizona

**LOCATION**
See Exhibit A-1

**DEPTH**

**SILTY CLAYEY SAND WITH GRAVEL (SC-SM)**, brown to light brown, dense, weak cementation

**SILTY SAND (SM)**, brown to light brown, dense to very dense

**Boring Terminated at 16.5 Feet**

Stratification lines are approximate. In-situ, the transition may be gradual.

**Hammer Type**: Automatic

**Advancement Method**: Hollow Stem Auger

**Abandonment Method**: Backfilled with soil cuttings upon completion.

**WATER LEVEL OBSERVATIONS**

**Groundwater not encountered**

**WATER TEST RESULTS**

- **Depth (Ft.)**: 5-11-35
  - **N**: 46
- **Depth (Ft.)**: 19-31-21
  - **N**: 52
- **Depth (Ft.)**: 19-21-14
  - **N**: 35

**ATTERBERG LIMITS**

**LL-PL-PI**

**Notes**:
- **Project No.**: 65145203
- **Exhibit**: A-8

**Client**: Kimley-Horn and Associates, Inc.

**Site**: Phoenix, Arizona

**Project**: Tom Jones Ford Dealership

**Address**: 4850 S. Ash Ave., Suite H-4

**City**: Tempe, Arizona
### BORING LOG NO. BB-8

**PROJECT:** Tom Jones Ford Dealership  
**SITE:** Yuma Rd. from S. Apache Rd. to 247th Ave.  
**CLIENT:** Kimley-Horn and Associates, Inc. Phoenix, Arizona

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>Graphic Log</th>
<th>DEPTH (FL)</th>
<th>WATER LEVEL OBSERVATIONS</th>
<th>FIELD TEST RESULTS</th>
<th>WATER CONTENT (%)</th>
<th>DRY UNIT WEIGHT (pcf)</th>
<th>ATTERBERG LIMITS</th>
<th>PERCENT FINES</th>
</tr>
</thead>
</table>
|          | See Exhibit A-1 | 13.0 |            | 7-7-7  
N=14  |  |  |  |  |  |
|          |  | 16.0 |            | 34-29-25  
N=54  |  |  |  |  |  |
|          |  |          |            | 31-50/5°  |  |  |  |  |

**SILTY GRAVEL WITH SAND (GM),** brown, medium dense  
very dense, weak cementation

**SILTY SAND WITH GRAVEL (SM),** light brown, very dense, weak to moderate cementation

**Boring Terminated at 16 Feet**

Stratification lines are approximate. In-situ, the transition may be gradual.

**Advancement Method:** Hollow Stem Auger  
**Abandonment Method:** Backfilled with soil cuttings upon completion.

**Water Level Observations:** Groundwater not encountered

**Notes:**

**Terracon**  
4895 S. Ash Ave., Suite H-4  
Tempe, Arizona

**Boring Started:** 8/19/2014  
**Boring Completed:** 8/19/2014  
**Drill Rig:** CME-75  
**Driller:** D&S  
**Project No.:** 65145203  
**Exhibit:** A-9
8.0

SILTY CLAYEY SAND WITH GRAVEL (SC-SM), brown, dense
light brown to white, weak cementation

9.0

SILTY SAND WITH GRAVEL (SM), brown to light brown, very dense, weak to moderate cementation

1.3.0

POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM), brown, very dense

Boring Terminated at 16.5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger
Abandonment Method: Backfilled with soil cuttings upon completion.

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Boring Started: 8/19/2014
Boring Completed: 8/19/2014
Drill Rig: CME-75
Driller: D&S
Project No.: 65145203
Exhibit: A-10
**BORING LOG NO. BB-10**

**PROJECT:** Tom Jones Ford Dealership  
**SITE:** Yuma Rd. from S. Apache Rd. to 247th Ave.  
**CLIENT:** Kimley-Horn and Associates, Inc. Phoenix, Arizona

**Location:** See Exhibit A-1

<table>
<thead>
<tr>
<th>DEPTH (FT)</th>
<th>GRAPHIC LOG</th>
<th>WATER LEVEL OBSERVATIONS</th>
<th>FIELD TEST RESULTS</th>
<th>WATER CONTENT (%)</th>
<th>DRY UNIT WEIGHT (pcf)</th>
<th>ATTERBERG LIMITS</th>
<th>PERCENT FINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.0</td>
<td></td>
<td>SILTY CLAYEY SAND WITH GRAVEL (SC-SM), brown to light brown, dense, weak to moderate cementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.0</td>
<td></td>
<td>SILTY SAND WITH GRAVEL (SM), light brown, very dense, weak to moderate cementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.0</td>
<td></td>
<td>SILTY GRAVEL WITH SAND (GM), brown, very dense, no to weak cementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Boring Terminated at 15 Feet**

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method: Hollow Stem Auger

Abandonment Method: Backfilled with soil cuttings upon completion.

**WATER LEVEL OBSERVATIONS**

Groundwater not encountered

Groundwater not encountered

**Notes:**

Boring Started: 8/19/2014  
Boring Completed: 8/19/2014

Drill Rig: CME-75  
Driller: D&S

Project No.: 65145203  
Exhibit: A-11
**BORING LOG NO. BB-11**

**PROJECT:** Tom Jones Ford Dealership  
**CLIENT:** Kimley-Horn and Associates, Inc.  
**SITE:** Yuma Rd. from S. Apache Rd. to 247th Ave.  
**LOCATION:** See Exhibit A-1  
**CLIENT:** Kimley-Horn and Associates, Inc.  
**SITE:** Yuma Rd. from S. Apache Rd. to 247th Ave.  

### Field Test Results

<table>
<thead>
<tr>
<th>Depth (Ft.)</th>
<th>Water Level Observations</th>
<th>Field Test Results</th>
<th>Water Content (%)</th>
<th>Dry Unit Weight (pcf)</th>
<th>Atterberg Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>8-8-9</td>
<td>N=17</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>10</td>
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</tr>
<tr>
<td>15</td>
<td>11-12-44</td>
<td>N=56</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Groundwater not encountered**

**Advancement Method:** Hollow Stem Auger  
**Abandonment Method:** Backfilled with soil cuttings upon completion.

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**Notes:**

- **Hammer Type:** Automatic  
- **Boring Started:** 8/19/2014  
- **Boring Completed:** 8/19/2014  
- **Drill Rig:** CME-75  
- **Driller:** D&S  
- **Project No.:** 65145203  
- **Exhibit:** A-12
**BORING LOG NO. BB-12**

**PROJECT:** Tom Jones Ford Dealership  
**SITE:** Yuma Rd. from S. Apache Rd. to 247th Ave.  
Buckeye, Arizona

**CLIENT:** Kimley-Horn and Associates, Inc.  
Phoenix, Arizona

**LOCATION**  
See Exhibit A-1

<table>
<thead>
<tr>
<th>DEPTH (FL)</th>
<th>GRAPHIC LOG</th>
<th>FIELD TEST</th>
<th>WATER CONCENTRATION</th>
<th>ATTERBERG LIMITS</th>
<th>PERCENT FINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>SILTY CLAYEY SAND WITH GRAVEL (SC-SM), brown</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.0</td>
<td>SILTY SAND WITH GRAVEL (SM), brown, medium dense to dense</td>
<td>9-14-15 N=29</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>12.0</td>
<td>SILTY GRAVEL WITH SAND (GM), brown to light brown, very dense, weak to moderate cementation</td>
<td>40-50/5°</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>15.0</td>
<td>Boring Terminated at 16 Feet</td>
<td>30-50/5°</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Stratification lines are approximate. In-situ, the transition may be gradual.

**Hammer Type:** Automatic

**Advancement Method:** Hollow Stem Auger

**Abandonment Method:** Backfilled with soil cuttings upon completion.

**FIELD TEST RESULTS**

<table>
<thead>
<tr>
<th>DEPTH (Ft.)</th>
<th>WATER LEVELOBSERVATIONS</th>
<th>PERCENT FINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Groundwater not encountered</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WATER LEVEL OBSERVATIONS**

Groundwater not encountered

Boring Started: 8/19/2014
Boring Completed: 8/19/2014

Drill Rig: CME-75  
Driller: D&S

Project No.: 65145203  
Exhibit: A-13
**BORING LOG NO. BB-13**

**PROJECT:** Tom Jones Ford Dealership  
**CLIENT:** Kimley-Horn and Associates, Inc.  
**SITE:** Yuma Rd. from S. Apache Rd. to 247th Ave.  
Buckeye, Arizona

### Stratification Lines

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>See Exhibit A-1</th>
</tr>
</thead>
</table>

### Depth Log

- **5.0 ft.**  
  **CLAYEY SAND WITH GRAVEL (SC),** brown, weak cementation

- **9.0 ft.**  
  **POORLY GRADED SAND WITH GRAVEL (SP),** brown, medium dense

- **13.0 ft.**  
  **SILTY CLAYEY SAND WITH GRAVEL (SC-SM),** light brown to white, very dense, moderate cementation

- **15.5 ft.**  
  **SILTY GRAVEL WITH SAND (GM),** brown to light brown, very dense, weak cementation

**Boring Terminated at 15.5 Feet**

### Field Test Results

<table>
<thead>
<tr>
<th>DEPTH (Ft.)</th>
<th>FIELD TEST RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-4-11</td>
<td>N=15</td>
</tr>
</tbody>
</table>

### Water Level Observations

- **WATER LEVEL OBSERVATIONS**
  - Groundwater not encountered

### Notes

- **Advancement Method:** Hollow Stem Auger  
- **Abandonment Method:** Backfilled with soil cuttings upon completion.

### WATER LEVEL OBSERVATIONS

- Boring Started: 8/19/2014  
- Boring Completed: 8/19/2014  
- Drill Rig: CME-75  
- Driller: D&S  
- Project No.: 65145203  
- Exhibit: A-14
SILTY CLAYEY SAND WITH GRAVEL (SC-SM), brown to light brown

SILTY SAND WITH GRAVEL (SM), brown to light brown, very dense, weak to moderate cementation

SILTY GRAVEL WITH SAND (GM), brown, medium dense

Boring Terminated at 16.5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method: Hollow Stem Auger

Abandonment Method: Backfilled with soil cuttings upon completion.

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Drill Rig: CME-75
Driller: D&S
Project No.: 65145203
Exhibit: A-15
SILTY SAND WITH GRAVEL (SM), brown, very dense, weak to moderate cementation

SILTY GRAVEL WITH SAND (GM), brown, very dense

SILTY CLAYEY SAND WITH GRAVEL (SC-SM), brown to reddish-brown, very dense

Boring Terminated at 16.5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Backfilled with soil cuttings upon completion.

WATER LEVEL OBSERVATIONS

Groundwater not encountered
Boring Terminated at 16.5 Feet

<table>
<thead>
<tr>
<th>DEPTH (Ft.)</th>
<th>WATER LEVEL OBSERVATIONS</th>
<th>FIELD TEST RESULTS</th>
<th>WATER CONTENT (%)</th>
<th>DRY UNIT WEIGHT (pcf)</th>
<th>ATTERBERG LIMITS</th>
<th>PERCENT FINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
- Groundwater not encountered

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger
Abandonment Method: Backfilled with soil cuttings upon completion.

WATER LEVEL OBSERVATIONS
- Groundwater not encountered

Boring Started: 8/19/2014
Boring Completed: 8/19/2014
Drill Rig: CME-75
Driller: D&S
Project No.: 65145203
Exhibit: A-17
### Boring Log No. BB-17

**Project:** Tom Jones Ford Dealership  
**Client:** Kimley-Horn and Associates, Inc.  
**Location:** Yuma Rd. from S. Apache Rd. to 247th Ave.  
**Site:** Buckeye, Arizona

#### Location

- See Exhibit A-1

#### Depth

<table>
<thead>
<tr>
<th>Depth (Ft.)</th>
<th>Sample Type</th>
<th>Field Test Results</th>
<th>Water Content (%)</th>
<th>Dry Unit Weight (pcf)</th>
<th>Atterberg Limits</th>
<th>LL-PL-PI</th>
<th>Percent Fines</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.0</td>
<td>Silty Clayey Sand with Gravel (SC-SM)</td>
<td>Brown to light brown, very dense, weak to moderate cementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.0</td>
<td>Silty Sand with Gravel (SM)</td>
<td>Brown, very dense</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.5</td>
<td>Clayey Sand with Gravel (SC)</td>
<td>Reddish-brown to light brown, very dense, moderate cementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Boring Terminated at 16.5 Feet**

Stratification lines are approximate. In-situ, the transition may be gradual.

**Advancement Method:** Hollow Stem Auger  
**Abandonment Method:** Backfilled with soil cuttings upon completion.

**Water Level Observations:**  
Groundwater not encountered

**Hammer Type:** Automatic

**Notes:**

- Project No.: 65145203  
- Exhibit: A-18  
- Boring Started: 8/19/2014  
- Boring Completed: 8/19/2014  
- Drill Rig: CME-75  
- Driller: D&S
**BORING LOG NO. BB-18**

**PROJECT:** Tom Jones Ford Dealership  
**CLIENT:** Kimley-Horn and Associates, Inc.  
**SITE:** Yuma Rd. from S. Apache Rd. to 247th Ave.  
**Buckeye, Arizona**

**GRAPHIC LOG**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>See Exhibit A-1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>WATER LEVEL OBSERVATIONS</th>
<th>FIELD TEST RESULTS</th>
<th>WATER CONTENT (%</th>
<th>DRY UNIT WEIGHT (pcf)</th>
<th>ATTERBERG LIMITS</th>
<th>PERCENT FINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FIELD OBSERVATIONS**

- **SILTY SAND WITH GRAVEL (SM),** brown to light brown, very dense, no to weak cementation
- **SILTY GRAVEL WITH SAND (GM),** brown, very dense

**Boring Terminated at 15 Feet**

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>WATER LEVEL OBSERVATIONS</th>
<th>FIELD TEST RESULTS</th>
<th>WATER CONTENT (%</th>
<th>DRY UNIT WEIGHT (pcf)</th>
<th>ATTERBERG LIMITS</th>
<th>PERCENT FINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-15-12 N=27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50/2&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Stratification lines are approximate. In-situ, the transition may be gradual.

**Advancement Method:** Hollow Stem Auger  
**Abandonment Method:** Backfilled with soil cuttings upon completion.

**Notes:**

- Groundwater not encountered
- Hammer Type: Automatic

**WATER LEVEL OBSERVATIONS**

- Groundwater not encountered

**Location:** 4685 S. Ash Ave., Suite H-4  
**Tempe, Arizona**

**Drill Rig:** CME-75  
**Driller:** D&S

**Project No.: 65145203  
**Exhibit:** A-19
DOUBLE RING INFILTRATION TEST SUMMARY
Tom Jones Ford Dealership
Yuma Road from S. Apache Road to 247th Avenue
Buckeye, Arizona
Terracon Project No. 65145203

Test No.: INF-1
Location: See Exhibit A-1
Depth: 4-5' Below Existing Grade
Technician: BJ D
Date: 8/14/2014
Weather: Hot and Clear
Liquid Type: Tap water
pH of Liquid: 7.5 at 79 °F
Ground Temp: 84 °F at start of test

Inner Ring Area: 707 cm²
Inner Ring Diameter: 300 mm
Annular space between Outer and Inner rings: 2120 cm²
Outer Ring Diameter: 600 mm
Depth of Liquid Inner Ring: 150 mm
Graduated Cylinder #1: 5,000 cm³
Graduated Cylinder #2: 13,000 cm³

Soil Description:
Silty Sand w/ Gravel (SM)

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Start Time</th>
<th>Finish Time</th>
<th>Elapsed Time</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>8:15:00 AM</td>
<td>8:30:00 AM</td>
<td>0:15:00</td>
<td>775</td>
<td>2,150</td>
<td>1.73</td>
<td>1.60</td>
</tr>
<tr>
<td>1</td>
<td>8:30:00 AM</td>
<td>8:45:00 AM</td>
<td>0:15:00</td>
<td>750</td>
<td>1,900</td>
<td>1.67</td>
<td>1.41</td>
</tr>
<tr>
<td>2</td>
<td>8:45:00 AM</td>
<td>9:00:00 AM</td>
<td>0:15:00</td>
<td>600</td>
<td>2,050</td>
<td>1.34</td>
<td>1.52</td>
</tr>
<tr>
<td>3</td>
<td>9:00:00 AM</td>
<td>9:15:00 AM</td>
<td>0:15:00</td>
<td>625</td>
<td>1,800</td>
<td>1.39</td>
<td>1.34</td>
</tr>
<tr>
<td>4</td>
<td>9:15:00 AM</td>
<td>9:45:00 AM</td>
<td>0:30:00</td>
<td>1,275</td>
<td>3,800</td>
<td>1.42</td>
<td>1.41</td>
</tr>
<tr>
<td>5</td>
<td>9:45:00 AM</td>
<td>10:15:00 AM</td>
<td>0:30:00</td>
<td>1,175</td>
<td>4,200</td>
<td>1.31</td>
<td>1.56</td>
</tr>
<tr>
<td>6</td>
<td>10:15:00 AM</td>
<td>11:15:00 AM</td>
<td>1:00:00</td>
<td>2,250</td>
<td>8,700</td>
<td>1.25</td>
<td>1.62</td>
</tr>
<tr>
<td>7</td>
<td>11:15:00 AM</td>
<td>12:15:00 PM</td>
<td>1:00:00</td>
<td>2,175</td>
<td>8,350</td>
<td>1.21</td>
<td>1.55</td>
</tr>
<tr>
<td>8</td>
<td>12:15:00 PM</td>
<td>1:15:00 PM</td>
<td>1:00:00</td>
<td>2,275</td>
<td>8,700</td>
<td>1.27</td>
<td>1.62</td>
</tr>
<tr>
<td>9</td>
<td>1:15:00 PM</td>
<td>2:15:00 PM</td>
<td>1:00:00</td>
<td>2,250</td>
<td>8,950</td>
<td>1.25</td>
<td>1.66</td>
</tr>
</tbody>
</table>

Exhibit A-20
DOUBLE RING INFILTRATION TEST SUMMARY

Tom Jones Ford Dealership
Yuma Road from S. Apache Road to 247th Avenue
Buckeye, Arizona
Terracon Project No. 65145203

Test No.: INF-2
Location: See Exhibit A-1
Depth: 4-5' Below Existing Grade
Technician: BJD
Date: 8/25/2014
Weather: Hot and Clear
Liquid Type: Tap water
pH of Liquid: 7.5 at 79 °F
Ground Temp: 82 °F at start of test

Inner Ring Area: 707 cm²
Inner Ring Diameter: 300 mm
Annular space between Outer and Inner rings: 2120 cm²
Outer Ring Diameter: 600 mm
Depth of Liquid Inner Ring: 150 mm
Depth of Liquid Annular Space: 150 mm
Graduated Cylinder #1: 5,000 cm³
Graduated Cylinder #2: 13,000 cm³

Depth (ft) Soil Description:
0-6 Silty Sand w/ Gravel (SM)

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Start</th>
<th>Time</th>
<th>Elapsed Time (hr:min:sec)</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>8:13:00 AM</td>
<td>8:28:00 AM</td>
<td>0:15:00</td>
<td>1,050</td>
<td>4,800</td>
<td>2.34</td>
<td>89</td>
</tr>
<tr>
<td>1</td>
<td>8:28:00 AM</td>
<td>8:43:00 AM</td>
<td>0:15:00</td>
<td>1,075</td>
<td>4,100</td>
<td>2.39</td>
<td>89</td>
</tr>
<tr>
<td>2</td>
<td>8:43:00 AM</td>
<td>9:10:00 AM</td>
<td>0:15:00</td>
<td>1,825</td>
<td>5,100</td>
<td>4.07</td>
<td>89</td>
</tr>
<tr>
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<td>8:58:00 AM</td>
<td>9:30:00 AM</td>
<td>0:15:00</td>
<td>1,375</td>
<td>4,250</td>
<td>3.06</td>
<td>89</td>
</tr>
<tr>
<td>4</td>
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<td>9:53:00 AM</td>
<td>0:30:00</td>
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<td>8,900</td>
<td>3.29</td>
<td>90</td>
</tr>
<tr>
<td>5</td>
<td>9:43:00 AM</td>
<td>10:13:00 AM</td>
<td>0:30:00</td>
<td>2,300</td>
<td>9,100</td>
<td>2.56</td>
<td>92</td>
</tr>
<tr>
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<td>11:00:00 AM</td>
<td>0:47:00</td>
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<td>13,000</td>
<td>2.75</td>
<td>94</td>
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<td>11:45:00 AM</td>
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<td>3,625</td>
<td>13,000</td>
<td>2.69</td>
<td>98</td>
</tr>
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<td>12:30:00 PM</td>
<td>0:45:00</td>
<td>3,700</td>
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<td>9</td>
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<td>0:45:00</td>
<td>4,000</td>
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<td>0:45:00</td>
<td>4,100</td>
<td>14,000</td>
<td>3.04</td>
<td>100</td>
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<td>11</td>
<td>2:00:00 PM</td>
<td>2:15:00 PM</td>
<td>0:15:00</td>
<td>1,375</td>
<td>4,800</td>
<td>3.06</td>
<td>100</td>
</tr>
</tbody>
</table>

Graph showing incremental infiltration rate (inches/hr) over time from 7:12 AM to 3:38 PM.
DOUBLE RING INFILTRATION TEST SUMMARY

Tom Jones Ford Dealership
Yuma Road from S. Apache Road to 247th Avenue
Buckeye, Arizona
Terracon Project No. 86145203

Test No.: INF-3
Location: See Exhibit A-1
Depth: 4-5' Below Existing Grade
Technician: DJJ
Date: 8/16/2014
Weather: Hot and Clear
Liquid Type: Tap water
pH of Liquid: 7.5 at 79 °F
Ground Temp: 88 °F at start of test

Inner Ring Area: 707 cm²
Inner Ring Diameter: 300 mm
Annular space between Outer and Inner rings: 2120 cm²
Outter Ring Diameter: 600 mm
Depth of Liquid Inner Ring: 150 mm
Deph of Liquid Annular Space: 150 mm
Graduated Cylinder #1: 5,000 cm³
Graduated Cylinder #2: 13,000 cm³

Soil Description:
Silty Sand w/ Gravel (SM)

Depth (ft)  Soil Description:
4-16.5  Silty Sand w/ Gravel (SM)

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Start</th>
<th>Finish</th>
<th>Elapsed Time</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9:45:00 AM</td>
<td>9:55:00 AM</td>
<td>0:10:00</td>
<td>5,500</td>
<td>14,000</td>
<td>18.38</td>
<td>15.60</td>
</tr>
<tr>
<td>1</td>
<td>9:55:00 AM</td>
<td>10:05:00 AM</td>
<td>0:10:00</td>
<td>5,500</td>
<td>14,000</td>
<td>18.38</td>
<td>15.60</td>
</tr>
<tr>
<td>2</td>
<td>10:15:00 AM</td>
<td>10:25:00 AM</td>
<td>0:10:00</td>
<td>5,500</td>
<td>14,000</td>
<td>18.38</td>
<td>15.60</td>
</tr>
<tr>
<td>3</td>
<td>10:30:00 AM</td>
<td>10:40:00 AM</td>
<td>0:10:00</td>
<td>5,500</td>
<td>14,000</td>
<td>18.38</td>
<td>15.60</td>
</tr>
<tr>
<td>4</td>
<td>10:45:00 AM</td>
<td>10:55:00 AM</td>
<td>0:10:00</td>
<td>5,500</td>
<td>14,000</td>
<td>18.38</td>
<td>15.60</td>
</tr>
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<td>11:10:00 AM</td>
<td>0:10:00</td>
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<td>18.38</td>
<td>15.60</td>
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<tr>
<td>6</td>
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<td>11:25:00 AM</td>
<td>0:10:00</td>
<td>5,500</td>
<td>14,000</td>
<td>18.38</td>
<td>15.60</td>
</tr>
<tr>
<td>7</td>
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<td>12:15:00 PM</td>
<td>0:10:00</td>
<td>5,500</td>
<td>14,000</td>
<td>18.38</td>
<td>15.60</td>
</tr>
<tr>
<td>8</td>
<td>12:16:00 PM</td>
<td>12:26:00 PM</td>
<td>0:10:00</td>
<td>5,500</td>
<td>14,000</td>
<td>18.38</td>
<td>15.60</td>
</tr>
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<td>12:38:00 PM</td>
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### Test Information

- **Test No.:** INF-4
- **Location:** See Exhibit A-1
- **Depth:** 4-5' Below Existing Grade
- **Technician:** BJD
- **Date:** 8/15/2014
- **Weather:** Hot and Clear
- **Liquid Type:** Tap water
- **pH of Liquid:** 7.5 at 79 °F
- **Ground Temp:** 88 °F at start of test

### Inner Ring and Annular Space Dimensions

- **Inner Ring Area:** 707 cm²
- **Inner Ring Diameter:** 300 mm
- **Annular space between Outer and Inner rings:** 2120 cm²
- **Outer Ring Diameter:** 600 mm
- **Depth of Liquid Inner Ring:** 150 mm
- **Depth of Liquid Annular Space:** 150 mm
- **Graduated Cylinder #1:** 5,000 cm³
- **Graduated Cylinder #2:** 13,000 cm³

### Trial Data

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Start Time</th>
<th>Finish Time</th>
<th>Elapsed Time (hr:min:sec)</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
</tr>
</thead>
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<td>8:45:00 AM</td>
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<td>2,300</td>
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<td>5,900</td>
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<td>1,050</td>
<td>4,600</td>
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<td>1.93</td>
</tr>
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<td>1:00:00</td>
<td>2,550</td>
<td>11,100</td>
<td>1.42</td>
<td>2.06</td>
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</tbody>
</table>

### Additional Information

- **Soil Description:** Silty Clayey Sand (SC-SM)
- **Temperature at Start:** 88 ºF
- **Depth Incremental Infiltration Rate:**
  - 0.00
  - 0.10
  - 0.20
  - 0.30
  - 0.40
  - 0.50
  - 0.60
  - 0.70

### Graph

- **Graph Title:** Incremental Infiltration Rate inches/hr
- **X-axis:** Time
- **Y-axis:** Incremental Infiltration Rate inches/hr

---

**Exhibit A-23**
**DOUBLE RING INFILTRATION TEST SUMMARY**

Tom Jones Ford Dealership  
Yuma Road from S. Apache Road to 247th Avenue  
Buckeye, Arizona  
Terracon Project No. 65145203  

**Test No.:** INF-5  
**Location:** See Exhibit A-1  
**Depth:** 4-5' Below Existing Grade  
**Technician:** DJJ  
**Date:** 8/16/2014  
**Weather:** Hot and Clear  
**Liquid Type:** Tap water  
**pH of Liquid:** 7.5 at 79 °F  
**Ground Temp:** 93 °F at start of test  

**Inner Ring Area:** 707 cm²  
**Inner Ring Diameter:** 300 mm  
**Annular space between Outer and Inner rings:** 2120 cm²  
**Outer Ring Diameter:** 600 mm  
**Depth of Liquid Inner Ring:** 150 mm  
**Depth of Liquid Annular Space:** 150 mm  
**Graduated Cylinder #1:** 5,000 cm³  
**Graduated Cylinder #2:** 13,000 cm³  

**Depth (ft) Soil Description:**  
0-8 Clayey Sand w/ Gravel (SC)  

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Start Time</th>
<th>Finish Time</th>
<th>Elapsed Time (hr:min:sec)</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
</tr>
</thead>
<tbody>
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<td>1,500</td>
<td>0.45</td>
<td>1.11 87</td>
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<td>175</td>
<td>900</td>
<td>0.39</td>
<td>0.67 88</td>
</tr>
<tr>
<td>3</td>
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<td>11:03:00 AM</td>
<td>0:15:00</td>
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<td>950</td>
<td>0.33</td>
<td>0.71 89</td>
</tr>
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<td>1,950</td>
<td>0.31</td>
<td>0.72 91</td>
</tr>
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<td>12:03:00 AM</td>
<td>0:30:00</td>
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<td>2,150</td>
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<td>0.80 92</td>
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<td>1:00:00</td>
<td>225</td>
<td>3,450</td>
<td>0.13</td>
<td>0.64 99</td>
</tr>
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</table>

Incremental Infiltration Rate inches/ hr  

**Tap water**  

- **0.00**  
- **0.20**  
- **0.40**  
- **0.60**  
- **0.80**  
- **1.00**  
- **1.20**

**Inner Ring**  
**Annular Space**  

*Exhibit A-24*
DOUBLE RING INFILTRATION TEST SUMMARY

Tom Jones Ford Dealership
Yuma Road from S. Apache Road to 247th Avenue
Buckeye, Arizona
Terracon Project No. 65145203

Test No.: INF-6
Location: See Exhibit A-1
Depth: 4-5' Below Existing Grade
Technician: BJD
Date: 8/15/2014
Weather: Hot and Clear
Depth: Inner Ring Diameter: 300 mm
Technician: Annular space between Outer and Inner rings: 2120 mm²
Outer Ring Diameter: 600 mm

Liquid Type: Tap water
pH of Liquid: Inner Ring: 7.5 at 79 °F
Ground Temp: 87 °F at start of test
Graduated Cylinder #1: 5,000 cm³
Graduated Cylinder #2: 13,000 cm³

Depth (ft) Soil Description:
3-8 Silty Clayey Sand w/ Gravel (SC-SM)

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Start Time</th>
<th>Finish Time</th>
<th>Elapsed Time</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
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<td>450</td>
<td>1,250</td>
<td>1.00</td>
<td>89</td>
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<tr>
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<td>0:15:00</td>
<td>500</td>
<td>1,600</td>
<td>1.11</td>
<td>90</td>
</tr>
<tr>
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<td>10:25:00 AM</td>
<td>0:15:00</td>
<td>550</td>
<td>1,500</td>
<td>1.23</td>
<td>90</td>
</tr>
<tr>
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<td>3,000</td>
<td>1.17</td>
<td>91</td>
</tr>
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<td>3,150</td>
<td>1.23</td>
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**Incremental Infiltration Rate inches/hr**

Exhibit A-25
**DOUBLE RING INFILTRATION TEST SUMMARY**

Tom Jones Ford Dealership  
Yuma Road from S. Apache Road to 247th Avenue  
Buckeye, Arizona  
Terracon Project No. 65145203

<table>
<thead>
<tr>
<th>Test No.</th>
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<tbody>
<tr>
<td>Location:</td>
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</tr>
<tr>
<td>Depth:</td>
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</tr>
<tr>
<td>Technician:</td>
<td>DJJ</td>
</tr>
<tr>
<td>Date:</td>
<td>8/22/2014</td>
</tr>
<tr>
<td>Weather:</td>
<td>Cloudy and Warm</td>
</tr>
<tr>
<td>Liquid Type:</td>
<td>Tap water</td>
</tr>
<tr>
<td>pH of Liquid</td>
<td>7.5 at 79 °F</td>
</tr>
<tr>
<td>Ground Temp:</td>
<td>84 °F at start of test</td>
</tr>
<tr>
<td>Inner Ring Area:</td>
<td>707 cm²</td>
</tr>
<tr>
<td>Inner Ring Diameter:</td>
<td>300 mm</td>
</tr>
<tr>
<td>Annular space between Outer and Inner rings:</td>
<td>2120 cm²</td>
</tr>
<tr>
<td>Outer Ring Diameter:</td>
<td>600 mm</td>
</tr>
<tr>
<td>Depth of Liquid Inner Ring:</td>
<td>150 mm</td>
</tr>
<tr>
<td>Depth of Liquid Annular Space:</td>
<td>150 mm</td>
</tr>
<tr>
<td>Graduated Cylinder #1:</td>
<td>5,000 cm³</td>
</tr>
<tr>
<td>Graduated Cylinder #2:</td>
<td>13,000 cm³</td>
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</tbody>
</table>

**Depth (ft) & Soil Description:**

0-7  
Silty Clayey Sand w/ Gravel (SC-SM)

**Trial No.**

<table>
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<tr>
<th>Trial No.</th>
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<th>Finish</th>
<th>Elapsed Time</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
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<td>0.67</td>
<td>0.97</td>
</tr>
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<td>0.67</td>
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<td>4,200</td>
<td>0.59</td>
<td>1.51</td>
</tr>
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<td>1,150</td>
<td>7,400</td>
<td>0.63</td>
<td>1.35</td>
</tr>
<tr>
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<td>1:01:00</td>
<td>1,300</td>
<td>8,400</td>
<td>0.71</td>
<td>1.53</td>
</tr>
<tr>
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<td>1,250</td>
<td>8,300</td>
<td>0.68</td>
<td>1.52</td>
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</table>

**Graph:**

- Incremental Infiltration Rate inches/hr
- Time (7:12 AM to 3:36 PM)
- Inner Ring
- Annular Space

**Exhibit A-26**
**DOUBLE RING INFILTRATION TEST SUMMARY**

Tom Jones Ford Dealership  
Yuma Road from S. Apache Road to 247th Avenue  
Buckeye, Arizona  
Terracon Project No. 65145203

<table>
<thead>
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<th>Test No.: INF-8</th>
<th>Location: See Exhibit A-1</th>
<th>Inner Ring Area: 707 cm²</th>
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<tr>
<td>Depth: 4-5' Below Existing Grade</td>
<td>Inner Ring Diameter: 300 mm</td>
<td></td>
</tr>
<tr>
<td>Technician: DJJ</td>
<td>Annular space between Outer and Inner rings: 2120 cm²</td>
<td></td>
</tr>
<tr>
<td>Date: 8/22/2014</td>
<td>Outer Ring Diameter: 600 mm</td>
<td></td>
</tr>
<tr>
<td>Weather: Hot and Clear</td>
<td>Depth of Liquid Inner Ring: 150 mm</td>
<td></td>
</tr>
<tr>
<td>Liquid Type: Tap water</td>
<td>Depth of Liquid Annular Space: 150 mm</td>
<td></td>
</tr>
<tr>
<td>pH of Liquid: 7.5 at 79 °F</td>
<td>Graduated Cylinder #1: 5,000 cm³</td>
<td></td>
</tr>
<tr>
<td>Ground Temp: 84 °F at start of test</td>
<td>Graduated Cylinder #2: 13,000 cm³</td>
<td></td>
</tr>
</tbody>
</table>

**Depth (ft)**  
0-7  
Silty Gravel w/ Sand (GM)

**Trial No.**  
**Time**  
**Elapsed Time (hr:min:sec)**  
**Inner Ring Volume, cm³**  
**Annular Space Volume, cm³**  
**Infiltration Rate, in/hr**  
**Temperature, °F**

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Start</th>
<th>Finish</th>
<th>Volume, cm³</th>
<th>Inner Ring</th>
<th>Annular Space</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td>84 °F at start of test</td>
</tr>
<tr>
<td>1</td>
<td>11:11:00 AM</td>
<td>11:16:00 AM</td>
<td>3,650</td>
<td>24.39</td>
<td></td>
<td></td>
<td>84 °F at start of test</td>
</tr>
<tr>
<td>2</td>
<td>1:27:00 PM</td>
<td>1:32:00 PM</td>
<td>3,500</td>
<td>23.39</td>
<td></td>
<td></td>
<td>84 °F at start of test</td>
</tr>
</tbody>
</table>

**Note:** Free-draining conditions, both inner ring and annulus space completely drain within 5 minutes.

![Graph showing incremental infiltration rate inches/hr over time](image_url)
DOUBLE RING INFILTRATION TEST SUMMARY
Tom Jones Ford Dealership
Yuma Road from S. Apache Road to 247th Avenue
Buckeye, Arizona
Terracon Project No. 65145203

<table>
<thead>
<tr>
<th>Test No.</th>
<th>INF-9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>See Exhibit A-1</td>
</tr>
<tr>
<td>Depth</td>
<td>4.5' Below Existing Grade</td>
</tr>
<tr>
<td>Technician</td>
<td>BJD</td>
</tr>
<tr>
<td>Date</td>
<td>8/21/2014</td>
</tr>
<tr>
<td>Weather</td>
<td>Cloudy and Warm</td>
</tr>
<tr>
<td>Liquid Type</td>
<td>Tap water</td>
</tr>
<tr>
<td>pH of Liquid</td>
<td>7.5 at 79 °F</td>
</tr>
<tr>
<td>Ground Temp</td>
<td>89 °F at start of test</td>
</tr>
</tbody>
</table>

Inner Ring Area: 707 cm²
Inner Ring Diameter: 300 mm
Annular space between Outer and Inner rings: 2120 cm²
Outer Ring Diameter: 600 mm
Depth of Liquid Inner Ring: 150 mm
Depth of Liquid Annular Space: 150 mm
Graduated Cylinder #1: 5,000 cm³
Graduated Cylinder #2: 13,000 cm³

Depth (ft) Soil Description:
0-7 Silty Clayey Sand w/ Gravel (SC-SM)

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Start</th>
<th>Finish</th>
<th>Elapsed Time (hr:min:sec)</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9:20:00 AM</td>
<td>9:35:00 AM</td>
<td>0:15:00</td>
<td>1,150</td>
<td>4,000</td>
<td>2.56</td>
<td>2.97</td>
</tr>
<tr>
<td>1</td>
<td>9:35:00 AM</td>
<td>9:50:00 AM</td>
<td>0:15:00</td>
<td>1,150</td>
<td>4,800</td>
<td>2.56</td>
<td>3.57</td>
</tr>
<tr>
<td>2</td>
<td>9:50:00 AM</td>
<td>10:06:00 AM</td>
<td>0:16:00</td>
<td>950</td>
<td>4,800</td>
<td>1.98</td>
<td>3.34</td>
</tr>
<tr>
<td>3</td>
<td>10:06:00 AM</td>
<td>10:22:00 AM</td>
<td>0:16:00</td>
<td>900</td>
<td>5,100</td>
<td>1.88</td>
<td>3.55</td>
</tr>
<tr>
<td>4</td>
<td>10:22:00 AM</td>
<td>10:52:00 AM</td>
<td>0:30:00</td>
<td>1,750</td>
<td>7,400</td>
<td>1.95</td>
<td>2.75</td>
</tr>
<tr>
<td>5</td>
<td>10:52:00 AM</td>
<td>11:23:00 AM</td>
<td>0:31:00</td>
<td>1,850</td>
<td>9,500</td>
<td>1.99</td>
<td>3.41</td>
</tr>
<tr>
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<td>12:24:00 PM</td>
<td>1:01:00</td>
<td>3,650</td>
<td>19,900</td>
<td>2.00</td>
<td>3.64</td>
</tr>
<tr>
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<td>1:25:00 PM</td>
<td>1:01:00</td>
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<td>18,700</td>
<td>1.97</td>
<td>3.42</td>
</tr>
<tr>
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<td>2:26:00 PM</td>
<td>1:01:00</td>
<td>3,700</td>
<td>18,400</td>
<td>2.03</td>
<td>3.36</td>
</tr>
<tr>
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<td>3:26:00 PM</td>
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<td>18,500</td>
<td>2.03</td>
<td>3.44</td>
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</tbody>
</table>

Exhibit A-28
DOUBLE RING INFILTRATION TEST SUMMARY

Tom Jones Ford Dealership
Yuma Road from S. Apache Road to 247th Avenue
Buckeye, Arizona
Terracon Project No. 65145203

Test No.: INF-10
Location: See Exhibit A-1
Depth: 4-5' Below Existing Grade
Technician: DJJ
Date: 8/21/2014
Weather: Cloudy and Warm
Liquid Type: Tap water
pH of Liquid: 7.5 at 79 °F
Ground Temp: 90 °F at start of test

Inner Ring Area: 707 cm²
Inner Ring Diameter: 300 mm
Annular space between Outer and Inner rings: 2120 cm²
 Outer Ring Diameter: 600 mm
Depth of Liquid Inner Ring: 150 mm
Depth of Liquid Annular Space: 150 mm
Graduated Cylinder #1: 5,000 cm³
Graduated Cylinder #2: 13,000 cm³

Soil Description:
Silty Clayey Sand w/ Gravel (SC-SM)
DOUBLE RING INFILTRATION TEST SUMMARY

Tom Jones Ford Dealership
Yuma Road from S. Apache Road to 247th Avenue
Buckeye, Arizona
Terracon Project No. 65145203

Test No.: INF-11
Location: See Exhibit A-1
Depth: 4-5' Below Existing Grade
Technician: DJJ
Date: 8/20/2014
Weather: Hot and Clear
Liquid Type: Tap water
pH of Liquid: 7.5 at 79 °F
Ground Temp: 90 °F at start of test

Inner Ring Area: 707 cm²
Inner Ring Diameter: 300 mm
Annular space between Outer and Inner rings: 2120 cm²
Outer Ring Diameter: 600 mm
Depth of Liquid Inner Ring: 150 mm
Graduated Cylinder #1: 5,000 cm³
Graduated Cylinder #2: 13,000 cm³

Depth (ft) Soil Description:
2-9 Poorly Graded Sand w/ Silt and Gravel (SP-SM)

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Start Time</th>
<th>Finish Time</th>
<th>Elapsed Time (hr:min:sec)</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
</tr>
</thead>
<tbody>
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<td>1:12:00 PM</td>
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<td>4,200</td>
<td>2.78</td>
<td>3.12</td>
</tr>
<tr>
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<td>1:12:00 PM</td>
<td>1:27:00 PM</td>
<td>0:15:00</td>
<td>850</td>
<td>3,900</td>
<td>1.89</td>
<td>2.90</td>
</tr>
<tr>
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<td>1:27:00 PM</td>
<td>1:43:00 PM</td>
<td>0:16:00</td>
<td>900</td>
<td>3,700</td>
<td>1.88</td>
<td>2.58</td>
</tr>
<tr>
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<td>1:43:00 PM</td>
<td>1:58:00 PM</td>
<td>0:15:00</td>
<td>900</td>
<td>3,800</td>
<td>2.00</td>
<td>2.82</td>
</tr>
<tr>
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<td>1:58:00 PM</td>
<td>2:29:00 PM</td>
<td>0:31:00</td>
<td>1,900</td>
<td>7,400</td>
<td>2.05</td>
<td>2.66</td>
</tr>
<tr>
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<td>2:29:00 PM</td>
<td>3:00:00 PM</td>
<td>0:31:00</td>
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<td>7,600</td>
<td>2.16</td>
<td>2.73</td>
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<tr>
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<td>15,100</td>
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<td>2.80</td>
</tr>
<tr>
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<td>5:00:00 PM</td>
<td>1:00:00</td>
<td>3,900</td>
<td>15,000</td>
<td>2.17</td>
<td>2.79</td>
</tr>
<tr>
<td>8</td>
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<td>6:01:00 PM</td>
<td>1:01:00</td>
<td>3,850</td>
<td>15,200</td>
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<td>2.78</td>
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<td>7:02:00 PM</td>
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<td>14,900</td>
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<td>2.72</td>
</tr>
</tbody>
</table>

Incremental Infiltration Rate inches/hr

Exhibit A-30
**DOUBLE RING INFILTRATION TEST SUMMARY**

Tom Jones Ford Dealership  
Yuma Road from S. Apache Road to 247th Avenue  
Buckeye, Arizona  
Terracon Project No. 66145203

Test No.: INF-12  
Location: See Exhibit A-1  
Depth: 4-5' Below Existing Grade  
Technician: DJJ  
Date: 8/20/2014  
Weather: Hot and Clear  
Liquid Type: Tap water  
Ground Temp: 89 ºF at start of test

**Inner Ring Area:** 707 cm²  
**Inner Ring Diameter:** 300 mm  
**Annular space between Outer and Inner rings:** 2120 cm²  
**Outer Ring Diameter:** 600 mm  
**Depth of Liquid Inner Ring:** 150 mm  
**Depth of Liquid Annular Space:** 150 mm  
**Graduated Cylinder #1:** 5,000 cm³  
**Graduated Cylinder #2:** 13,000 cm³

**Depth (ft)**  
**Soil Description:** Silty Sand w/ Gravel (SM)

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Start</th>
<th>Finish</th>
<th>Elapsed Time (hr:min:sec)</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, ºF</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1:17:00 PM</td>
<td>0:15:00</td>
<td>2,500</td>
<td>8,400</td>
<td>5.57</td>
<td>6.24</td>
</tr>
<tr>
<td>1</td>
<td>1:17:00 PM</td>
<td>1:33:00 PM</td>
<td>0:16:00</td>
<td>2,050</td>
<td>6,400</td>
<td>4.28</td>
<td>4.46</td>
</tr>
<tr>
<td>2</td>
<td>1:33:00 PM</td>
<td>1:48:00 PM</td>
<td>0:15:00</td>
<td>2,050</td>
<td>6,600</td>
<td>4.57</td>
<td>4.90</td>
</tr>
<tr>
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<td>1:48:00 PM</td>
<td>2:04:00 PM</td>
<td>0:16:00</td>
<td>2,300</td>
<td>6,900</td>
<td>4.80</td>
<td>4.81</td>
</tr>
<tr>
<td>4</td>
<td>2:04:00 PM</td>
<td>2:35:00 PM</td>
<td>0:31:00</td>
<td>4,400</td>
<td>12,700</td>
<td>4.74</td>
<td>4.56</td>
</tr>
<tr>
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<td>3:06:00 PM</td>
<td>0:31:00</td>
<td>4,300</td>
<td>12,000</td>
<td>4.63</td>
<td>4.31</td>
</tr>
<tr>
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<td>3:06:00 PM</td>
<td>4:06:00 PM</td>
<td>1:00:00</td>
<td>8,800</td>
<td>24,400</td>
<td>4.90</td>
<td>4.53</td>
</tr>
<tr>
<td>7</td>
<td>4:06:00 PM</td>
<td>5:06:00 PM</td>
<td>1:00:00</td>
<td>8,400</td>
<td>22,000</td>
<td>4.68</td>
<td>4.09</td>
</tr>
<tr>
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<td>1:01:00</td>
<td>8,550</td>
<td>23,100</td>
<td>4.68</td>
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</tr>
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<td>22,600</td>
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</tbody>
</table>

**Incremental Infiltration Rate inches/hr**

Exhibit A-31
DOUBLE RING INFILTRATION TEST SUMMARY
Tom Jones Ford Dealership
Yuma Road from S. Apache Road to 247th Avenue
Buckeye, Arizona
Terracon Project No. 65145203

Test No.: INF-13
Location: See Exhibit A-1
Depth: 4-5' Below Existing Grade
Technician: BJD
Date: 8/20/2014
Weather: Hot and Clear
Liquid Type: Tap water
pH of Liquid: 7.5 at 79 °F
Ground Temp: 75 °F at start of test

Soil Description:
Poorly Graded Sand w/ Gravel (SP)

Depth (ft) of Liquid

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Time</th>
<th>Elapsed Time</th>
<th>Inner Ring Volume, cm$^3$</th>
<th>Annular Space Volume, cm$^3$</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
</tr>
</thead>
<tbody>
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<td>5,500</td>
<td>8.80</td>
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</tr>
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<td>6,200</td>
<td>6.91</td>
<td>4.61</td>
</tr>
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<td>6,900</td>
<td>8.46</td>
<td>5.13</td>
</tr>
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<td>6,300</td>
<td>7.24</td>
<td>4.68</td>
</tr>
<tr>
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</tr>
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<td>10,500</td>
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</tr>
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<td>4,800</td>
<td>9,100</td>
<td>6.96</td>
<td>4.32</td>
</tr>
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<td>9,750</td>
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<td>4.53</td>
</tr>
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<td>8,700</td>
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<td>3.76</td>
</tr>
<tr>
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<td>0:20:00</td>
<td>4,850</td>
<td>8,550</td>
<td>6.75</td>
<td>3.76</td>
</tr>
<tr>
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<td>6.75</td>
<td>3.76</td>
</tr>
<tr>
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<td>8,100</td>
<td>6.75</td>
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</tr>
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<td>4,800</td>
<td>8,000</td>
<td>6.75</td>
<td>3.76</td>
</tr>
<tr>
<td>13</td>
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<td>4,800</td>
<td>8,000</td>
<td>6.75</td>
<td>3.76</td>
</tr>
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<td>8,000</td>
<td>6.75</td>
<td>3.76</td>
</tr>
<tr>
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<td>8,000</td>
<td>6.75</td>
<td>3.76</td>
</tr>
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<td>8,000</td>
<td>6.75</td>
<td>3.76</td>
</tr>
</tbody>
</table>

Incremental Infiltration Rate inches/hr vs Time

Exhibit A-32
## DOUBLE RING INFILTRATION TEST SUMMARY

### Tom Jones Ford Dealership
Yuma Road from S. Apache Road to 247th Avenue
Buckeye, Arizona

Terracon Project No. 65145203

<table>
<thead>
<tr>
<th>Trial No.</th>
<th>Start Time</th>
<th>Finish Time</th>
<th>Elapsed Time (hr:min:sec)</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
</tr>
</thead>
<tbody>
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<td>6,000</td>
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<td>4.46</td>
</tr>
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<td>6:20:00 AM</td>
<td>0:15:00</td>
<td>1,325</td>
<td>5,800</td>
<td>2.95</td>
<td>4.31</td>
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<td>5,650</td>
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<td>5,900</td>
<td>3.12</td>
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</tr>
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<td>0:30:00</td>
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<td>8,900</td>
<td>2.59</td>
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</tr>
<tr>
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<td>0:38:00</td>
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<td>13,500</td>
<td>2.70</td>
<td>3.96</td>
</tr>
<tr>
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<td>3.22</td>
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<td>9:53:00 AM</td>
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<td>13,000</td>
<td>2.55</td>
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</tr>
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<td>12,200</td>
<td>2.61</td>
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</tr>
</tbody>
</table>

### Depth (ft)

- **4-12**: Silty Sand w/ Gravel (SM)

### Soil Description:

- **BJD**
- **8/20/2014**
- **Soil Description:**
  - **Silty Sand w/ Gravel (SM)**
  - **Ground Temp:** 77 °F at start of test
  - **pH of Liquid:** 7.5 at 79 °F
  - **Liquid Type:** Tap water
  - **Depth of Liquid Annular Space:** 150 mm
  - **Graduated Cylinder #1:** 5,000 cm³
  - **Graduated Cylinder #2:** 13,000 cm³
  - **Outer Ring Diameter:** 600 mm
  - **Inner Ring Diameter:** 300 mm
  - **Annular space between Outer and Inner rings:** 2120 cm³
  - **Inner Ring Area:** 707 cm²
  - **Inner Ring Depth:** 150 mm
  - **Depth of Liquid Inner Ring:** 150 mm
  - **Technician:** Annular space between Outer and Inner rings: 2120 cm³
  - **Date:** 8/20/2014
  - **Location:** See Exhibit A-1

### Weather:
- **Weather:** Hot and Clear

### Trial No. Table:

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<tr>
<th>Trial No.</th>
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<th>Finish Time</th>
<th>Elapsed Time (hr:min:sec)</th>
<th>Inner Ring Volume, cm³</th>
<th>Annular Space Volume, cm³</th>
<th>Infiltration Rate, in/hr</th>
<th>Temperature, °F</th>
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<td>2.95</td>
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</tr>
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<td>13,000</td>
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<td>12,900</td>
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<td>13,500</td>
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<td>3.76</td>
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<td>11:53:00 AM</td>
<td>0:40:00</td>
<td>3,125</td>
<td>12,200</td>
<td>2.61</td>
<td>3.40</td>
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</tbody>
</table>

### Graphs:
- **Incremental Infiltration Rate inches/hr**
  - **Inner Ring**
  - **Annular Space**

### Exhibit A-33
**DOUBLE RING INFILTRATION TEST SUMMARY**

Tom Jones Ford Dealership  
Yuma Road from S. Apache Road to 247th Avenue  
Buckeye, Arizona  
Terracon Project No. 65145203

<table>
<thead>
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<th>Test No.</th>
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<tbody>
<tr>
<td>Location:</td>
<td>See Exhibit A-1</td>
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<tr>
<td>Depth:</td>
<td>4-5' Below Existing Grade</td>
</tr>
<tr>
<td>Technician:</td>
<td>BJD</td>
</tr>
<tr>
<td>Date:</td>
<td>8/19/2014</td>
</tr>
<tr>
<td>Weather:</td>
<td>Cloudy and Warm</td>
</tr>
<tr>
<td>Liquid Type:</td>
<td>Tap water</td>
</tr>
<tr>
<td>pH of Liquid:</td>
<td>7.5 at 79 °F</td>
</tr>
<tr>
<td>Ground Temp:</td>
<td>85 °F at start of test</td>
</tr>
</tbody>
</table>

| Inner Ring Area: | 707 cm² |
| Inner Ring Diameter: | 300 mm |
| Annular space between Outer and Inner rings: | 2120 cm² |
| Outer Ring Diameter: | 600 mm |
| Depth of Liquid Inner Ring: | 150 mm |
| Depth of Liquid Annular Space: | 150 mm |
| Graduated Cylinder #1: | 5,000 cm³ |
| Graduated Cylinder #2: | 13,000 cm³ |

**Depth (ft)**  
0-8

**Soil Description:**  
Silty Sand w/ Gravel (SM)

**Trial No.** | **Time** | **Elapsed Time** | **Inner Ring Volume, cm³** | **Annular Space Volume, cm³** | **Infiltration Rate, in/hr** | **Temperature, °F** |
---|---|---|---|---|---|---|
0 | 8:15:00 AM - 8:30:00 AM | 0:15:00 | 3,000 | 11,500 | 6.68 | 87 |
1 | 8:30:00 AM - 8:45:00 AM | 0:15:00 | 3,250 | 13,500 | 7.24 | 10.03 | 87 |
2 | 8:45:00 AM - 9:00:00 AM | 0:15:00 | 3,150 | 13,500 | 7.02 | 10.03 | 88 |
3 | 9:00:00 AM - 9:15:00 AM | 0:15:00 | 3,375 | 15,250 | 7.52 | 11.33 | 88 |
4 | 9:15:00 AM - 9:49:00 AM | 0:34:00 | 6,700 | 35,000 | 6.58 | 11.47 | 89 |
5 | 9:49:00 AM - 10:19:00 AM | 0:30:00 | 5,000 | 28,200 | 5.57 | 10.47 | 90 |
6 | 10:19:00 AM - 11:19:00 AM | 1:00:00 | 10,025 | 53,900 | 5.58 | 10.01 | 90 |
7 | 11:19:00 AM - 12:19:00 AM | 1:00:00 | 10,875 | 49,050 | 6.06 | 9.11 | 95 |
8 | 12:19:00 PM - 1:19:00 PM | 1:00:00 | 11,200 | 44,200 | 6.24 | 8.21 | 97 |
9 | 1:19:00 PM - 2:19:00 PM | 1:00:00 | 10,800 | 41,100 | 6.01 | 7.63 | 98 |

**Incremental Infiltration Rate inches/hr**  
- Inner Ring
- Annular Space

**Exhibit A-34**
DOUBLE RING INFILTRATION TEST SUMMARY

Tom Jones Ford Dealership
Yuma Road from S. Apache Road to 247th Avenue
Buckeye, Arizona
Terracon Project No. 65145203

Test No.: INF-16
Location: See Exhibit A-1
Depth: 4-5' Below Existing Grade
Technician: BJD
Date: 8/18/2014
Weather: Cloudy and Warm
Liquid Type: Tap water
pH of Liquid: 7.5 at 79 °F
Ground Temp: 88 °F at start of test

Inner Ring Area: 707 cm²
Inner Ring Diameter: 300 mm
Annular space between Outer and Inner rings: 2120 cm²
Outer Ring Diameter: 600 mm
Depth of Liquid Inner Ring: 150 mm
Depth of Liquid Annular Space: 150 mm
Graduated Cylinder #1: 5,000 cm³
Graduated Cylinder #2: 13,000 cm³

Depth (ft) Soil Description:
6-13 Silty Sand w/ Gravel (SM)

Trial No. Time Elapsed Time Inner Ring Annular Space Infiltration Rate, in/hr Temperature, °F
Start Finish (hr:min:sec) Volume, cm³ Volume, cm³ Inner Ring Annular Space
0 9:23:00 AM 9:38:00 AM 0:15:00 2,050 5,900 4.57 4.38 87
1 9:38:00 AM 9:53:00 AM 0:15:00 2,000 5,750 4.45 4.27 87
2 9:53:00 AM 10:08:00 AM 0:15:00 2,300 6,600 5.12 4.90 87
3 10:08:00 AM 10:23:00 AM 0:15:00 1,900 5,900 4.23 4.38 88
4 10:23:00 AM 10:57:00 AM 0:34:00 3,900 9,900 3.83 3.24 88
5 10:57:00 AM 11:28:00 AM 0:31:00 3,700 10,600 3.99 3.81 88
6 11:28:00 AM 12:29:00 PM 1:01:00 7,400 20,500 4.05 3.74 89
7 12:29:00 PM 1:30:00 PM 1:01:00 7,450 21,900 4.08 4.00 92
8 1:30:00 PM 2:32:00 PM 1:02:00 7,500 21,000 4.04 3.77 93
9 2:32:00 PM 3:33:00 PM 1:01:00 7,350 20,500 4.03 3.74 94

7.5 at 79 °F
88 ºF at start of test

Exhibit A-35
**DOUBLE RING INFILTRATION TEST SUMMARY**

Tom Jones Ford Dealership  
Yuma Road from S. Apache Road to 247th Avenue  
Buckeye, Arizona  
Terracon Project No. 65145203

<table>
<thead>
<tr>
<th>Test No.:</th>
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<tbody>
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<td>Location:</td>
<td>See Exhibit A-1</td>
</tr>
<tr>
<td>Depth:</td>
<td>4-5' Below Existing Grade</td>
</tr>
<tr>
<td>Technician:</td>
<td>BJJD</td>
</tr>
<tr>
<td>Date:</td>
<td>8/19/2014</td>
</tr>
<tr>
<td>Weather:</td>
<td>Hot and Clear</td>
</tr>
<tr>
<td>Liquid Type:</td>
<td>Tap water</td>
</tr>
<tr>
<td>pH of Liquid:</td>
<td>7.5 at 79 °F</td>
</tr>
<tr>
<td>Ground Temp:</td>
<td>84 °F at start of test</td>
</tr>
</tbody>
</table>

**Inner Ring and Annular Space Details:**
- Inner Ring Area: 707 cm²
- Inner Ring Diameter: 300 mm
- Annular space between Outer and Inner rings: 2120 cm²
- Outer Ring Diameter: 600 mm
- Depth of Liquid Inner Ring: 150 mm
- Depth of Liquid Annular Space: 150 mm
- Graduated Cylinder #1: 5,000 cm³
- Graduated Cylinder #2: 13,000 cm³

**Depth (ft) & Soil Description:**
- 0-7 ft: Silty Clayey Sand w/ Gravel (SC-SM)

**Trial No.**  | **Time** | **Elapsed Time** | **Inner Ring Volume, cm³** | **Annular Space Volume, cm³** | **Infiltration Rate, in/hr** | **Temperature, °F** |
---|---|---|---|---|---|---|
0 | 7:50:00 AM | 8:05:00 AM | 0:15:00 | 900 | 4,050 | 2.00 | 3.01 | 87 |
1 | 8:05:00 AM | 8:20:00 AM | 0:15:00 | 1,150 | 2,950 | 2.56 | 2.19 | 87 |
2 | 8:20:00 AM | 8:35:00 AM | 0:15:00 | 1,050 | 3,600 | 2.34 | 2.67 | 87 |
3 | 8:35:00 AM | 9:00:00 AM | 0:15:00 | 1,325 | 3,150 | 2.95 | 2.34 | 87 |
4 | 9:00:00 AM | 9:25:00 AM | 0:30:00 | 1,925 | 9,900 | 2.14 | 3.68 | 88 |
5 | 9:25:00 AM | 10:00:00 AM | 0:30:00 | 2,275 | 7,250 | 2.53 | 2.69 | 88 |
6 | 10:00:00 AM | 11:00:00 AM | 1:00:00 | 3,800 | 12,350 | 2.12 | 2.29 | 89 |
7 | 11:00:00 AM | 12:00:00 PM | 1:00:00 | 4,000 | 12,300 | 2.23 | 2.28 | 91 |
8 | 12:00:00 PM | 1:00:00 PM | 1:00:00 | 3,800 | 12,300 | 2.12 | 2.28 | 94 |
9 | 1:00:00 PM | 1:50:00 PM | 1:00:00 | 3,850 | 11,550 | 2.14 | 2.14 | 96 |

**Soil Temperature:**
- 7.5 at 79 °F
- 84 °F at start of test

**Infiltration Rate Graph:**
- Inner Ring
- Annular Space

**Ground Characteristics:**
- 4-5' Below Existing Grade
- BJD

Exhibit A-36
### DOUBLE RING INFILTRATION TEST SUMMARY

Tom Jones Ford Dealership  
Yuma Road from S. Apache Road to 247th Avenue  
Buckeye, Arizona  
Terracon Project No. 65145203

| Test No.:| INF-18 |
| Location:| See Exhibit A-1 |
| Depth:| 4-5' Below Existing Grade |
| Technician:| DJJ |
| Date:| 8/18/2014 |
| Weather:| Hot and Clear |
| Liquid Type:| Tap water |
| pH of Liquid:| 7.5 ± 79 °F |
| Ground Temp:| 89 °F at start of test |

| Soil Description:| Silty Sand w/ Gravel (SM) |

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<th>Soil Description:</th>
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</thead>
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<td>Silty Sand w/ Gravel (SM)</td>
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#### Trial No. Summary

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#### Diagram

**Incremental Infiltration Rate**

- **Inner Ring**
- **Annular Space**

#### Additional Information

- **Inner Ring Area:** 707 cm²
- **Inner Ring Diameter:** 300 mm
- **Annular space between Outer and Inner rings:** 2120 cm²
- **Outer Ring Diameter:** 600 mm
- **Depth of Liquid Inner Ring:** 150 mm
- **Graduated Cylinder #1:** 5,000 cm³
- **Graduated Cylinder #2:** 13,000 cm³

---

**Exhibit A-37**