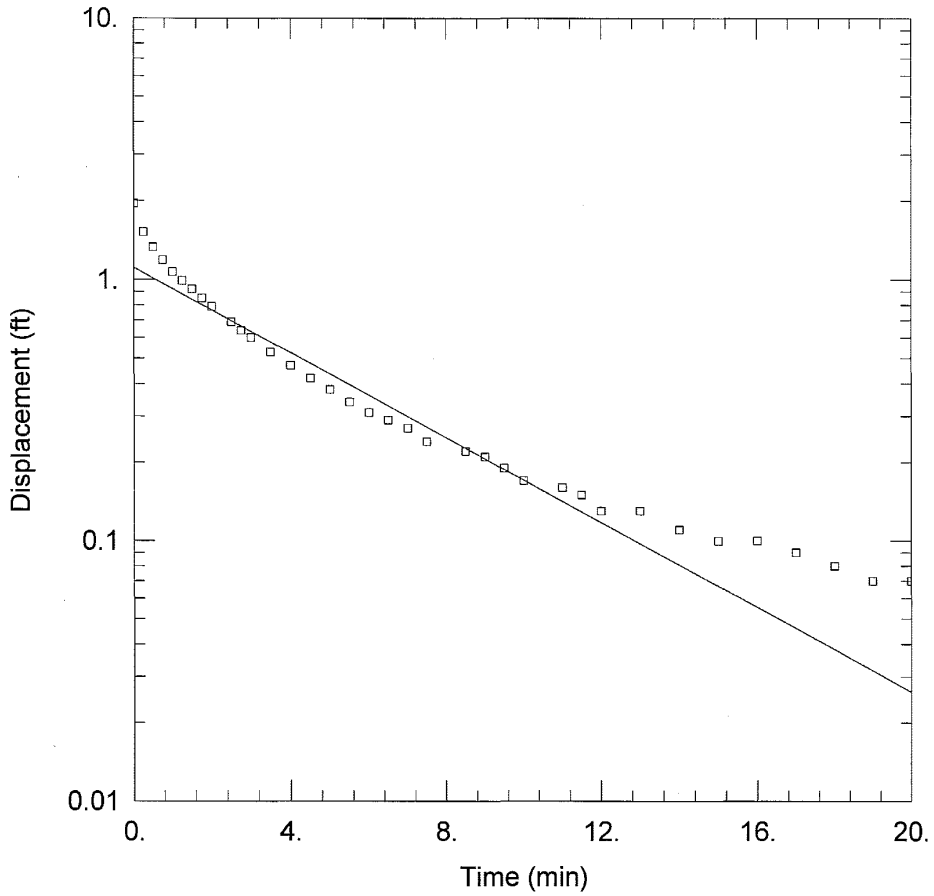
**SUMMARY OF AQUIFER TEST RESULTS**
**GULFCO MARINE MAINTENANCE**
**FREEPORT, BRAZORIA COUNTY, TEXAS**

| Well Number | Test Type | Aquifer Type | Aquifer Zone | Modeled Aquifer Thickness (ft) | Hydraulic Conductivity (cm/sec) |
|---|---|---|---|---|---|
| ND4MW03 | Slug | Confined | A | 13 | $8 \times 10^{-5}$ |
| NE1MW04 | Slug | Confined | A | 12 | $4 \times 10^{-5}$ |
| SJ1MW15 | Slug | Confined | A | 12.5 | $7 \times 10^{-5}$ |
| ND4MW24B | Slug | Confined | B | 5 | $1 \times 10^{-4}$ |
| NG3MW25B | Slug | Confined | B | 16 | $5 \times 10^{-4}$ |
| OMW27B | Slug | Confined | B | 3 | $2 \times 10^{-5}$ |

9167349




## ND4MW03 SLUG OUT B

Data Set: J:\...\ND4MW03_outB.aqt
Date: 11/14/07 Time: 15:23:16

## PROJECT INFORMATION

Company: PBW
Client: Gulfco
Project: 1352-H2
Test Location: Freeport, TX
Test Well: ND4MW03
Test Date: 11-7-07

## AQUIFER DATA

Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 1.

## WELL DATA (ND4MW03)

Initial Displacement: 1.95 ft
Wellbore Radius: 0.42 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.2

Casing Radius: 0.08 ft
Well Skin Radius: 0.42 ft
Total Well Penetration Depth: 13. ft

## SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice

K = 7.709E-05 cm/sec y0 = 1.112 ft

171713

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\Analysis based on Screen Length\ND4MW03_outB.aqt
Title: ND4MW03 Slug Out B
Date: 11/14/07
Time: 15:23:23

## PROJECT INFORMATION

Company: PBW
Client: Gulfco
Project: 1352-H2
Location: Freeport, TX
Test Date: 11-7-07
Test Well: ND4MW03

## AQUIFER DATA

Saturated Thickness: 13. ft
Anisotropy Ratio (Kz/Kr): 1.

## SLUG TEST WELL DATA

Initial Displacement: 1.95 ft
Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft
Well Skin Radius: 0.42 ft
Screen Length: 10. ft
Total Well Penetration Depth: 13. ft
Gravel Pack Porosity: 0.2

No. of observations: 35

Observation Data

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 0.25 | 1.52 | 7. | 0.27 |
| 0.5 | 1.33 | 7.5 | 0.24 |
| 0.75 | 1.19 | 8.5 | 0.22 |
| 1. | 1.07 | 9. | 0.21 |
| 1.25 | 0.99 | 9.5 | 0.19 |
| 1.5 | 0.92 | 10. | 0.17 |
| 1.75 | 0.85 | 11. | 0.16 |
| 2. | 0.79 | 11.5 | 0.15 |
| 2.5 | 0.69 | 12. | 0.13 |
| 2.75 | 0.64 | 13. | 0.13 |
| 3. | 0.6 | 14. | 0.11 |
| 3.5 | 0.53 | 15. | 0.1 |
| 4. | 0.47 | 16. | 0.1 |
| 4.5 | 0.42 | 17. | 0.09 |
| 5. | 0.38 | 18. | 0.08 |
| 5.5 | 0.34 | 19. | 0.07 |
| 6. | 0.31 | 20. | 0.07 |
| 6.5 | 0.29 | | |

## SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

## VISUAL ESTIMATION RESULTS

### Estimated Parameters

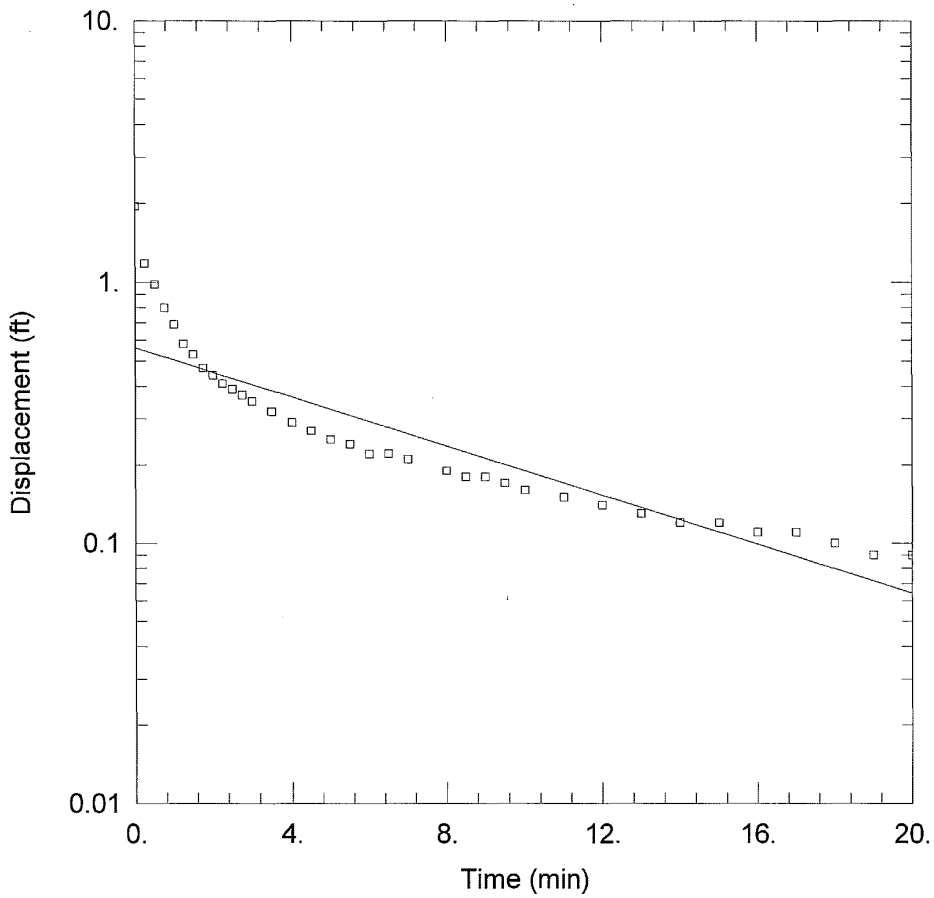
| Parameter | Estimate | |
|---|---|---|
| K | 7.709E-05 | cm/sec |
| y0 | 1.112 | ft |



171714

**ND4MW03 Slug Out**

| Observation | Time | WL | Displacement | Weight |
|---|---|---|---|---|
| 1 | 0.25 | 5.95 | 1.52 | 1 |
| 2 | 0.5 | 5.78 | 1.35 | 1 |
| 3 | 0.75 | 5.61 | 1.18 | 1 |
| 4 | 1 | 5.52 | 1.09 | 1 |
| 5 | 1.25 | 5.43 | 1 | 1 |
| 6 | 1.5 | 5.35 | 0.92 | 1 |
| 7 | 1.75 | 5.27 | 0.84 | 1 |
| 8 | 2 | 5.22 | 0.79 | 1 |
| 9 | 2.5 | 5.11 | 0.68 | 1 |
| 10 | 3 | 5.04 | 0.61 | 1 |
| 11 | 3.5 | 4.96 | 0.53 | 1 |
| 12 | 4 | 4.91 | 0.48 | 1 |
| 13 | 4.5 | 4.86 | 0.43 | 1 |
| 14 | 5 | 4.82 | 0.39 | 1 |
| 15 | 5.5 | 4.78 | 0.35 | 1 |
| 16 | 6 | 4.75 | 0.32 | 1 |
| 17 | 6.5 | 4.72 | 0.29 | 1 |
| 18 | 7 | 4.7 | 0.27 | 1 |
| 19 | 7.5 | 4.68 | 0.25 | 1 |
| 20 | 8 | 4.67 | 0.24 | 1 |
| 21 | 8.5 | 4.65 | 0.22 | 1 |
| 22 | 9 | 4.63 | 0.2 | 1 |
| 23 | 10 | 4.62 | 0.19 | 1 |
| 24 | 11 | 4.95 | 0.52 | 1 |
| 25 | 12 | 4.58 | 0.15 | 1 |
| 26 | 13 | 4.57 | 0.14 | 1 |
| 27 | 15 | 4.54 | 0.11 | 1 |
| 28 | 16 | 4.53 | 0.1 | 1 |
| 29 | 17 | 4.53 | 0.1 | 1 |
| 30 | 20 | 4.51 | 0.08 | 1 |
| 31 | 25 | 4.49 | 0.06 | 1 |




## NE1MW04 SLUG OUT

Data Set: J:\...\NE1MW04_out.aqt
Date: 11/14/07 Time: 13:26:27

## PROJECT INFORMATION

Company: PBW
Client: Gulfco
Project: 1352-H2
Test Location: Freeport, TX
Test Well: NE1MW04
Test Date: 11-7-07

## AQUIFER DATA

Saturated Thickness: 12. ft
Anisotropy Ratio (Kz/Kr): 1.

## WELL DATA (NE1MW04)

Initial Displacement: 1.95 ft
Wellbore Radius: 0.42 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.2
Casing Radius: 0.08 ft
Well Skin Radius: 0.42 ft
Total Well Penetration Depth: 12. ft

## SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 4.377E-05 cm/sec
y0 = 0.5617 ft

171716

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\Analysis based on Screen Length\NE1MW04_out.aqt
Title: NE1MW04 Slug Out
Date: 11/14/07
Time: 13:26:32

## PROJECT INFORMATION

Company: PBW
Client: Gulfco
Project: 1352-H2
Location: Freeport, TX
Test Date: 11-7-07
Test Well: NE1MW04

## AQUIFER DATA

Saturated Thickness: 12. ft
Anisotropy Ratio (Kz/Kr): 1.

## SLUG TEST WELL DATA

Initial Displacement: 1.95 ft
Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft
Well Skin Radius: 0.42 ft
Screen Length: 10. ft
Total Well Penetration Depth: 12. ft
Gravel Pack Porosity: 0.2

No. of observations: 35

Observation Data

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 0.25 | 1.18 | 6.5 | 0.22 |
| 0.5 | 0.98 | 7. | 0.21 |
| 0.75 | 0.8 | 8. | 0.19 |
| 1. | 0.69 | 8.5 | 0.18 |
| 1.25 | 0.58 | 9. | 0.18 |
| 1.5 | 0.53 | 9.5 | 0.17 |
| 1.75 | 0.47 | 10. | 0.16 |
| 2. | 0.44 | 11. | 0.15 |
| 2.25 | 0.41 | 12. | 0.14 |
| 2.5 | 0.39 | 13. | 0.13 |
| 2.75 | 0.37 | 14. | 0.12 |
| 3. | 0.35 | 15. | 0.12 |
| 3.5 | 0.32 | 16. | 0.11 |
| 4. | 0.29 | 17. | 0.11 |
| 4.5 | 0.27 | 18. | 0.1 |
| 5. | 0.25 | 19. | 0.09 |
| 5.5 | 0.24 | 20. | 0.09 |
| 6. | 0.22 | | |

## SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

## VISUAL ESTIMATION RESULTS

### Estimated Parameters

| Parameter | Estimate | |
|---|---|---|
| K | 4.377E-05 | cm/sec |
| y0 | 0.5617 | ft |



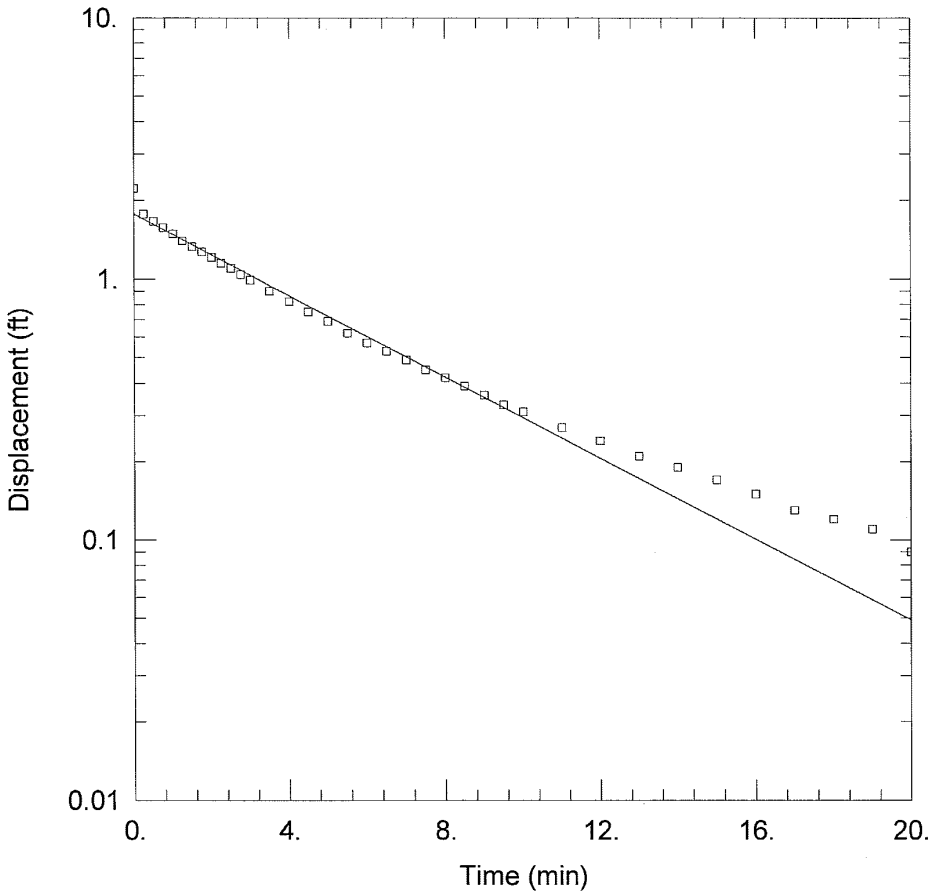
171717

**NE1MW04 Slug Out**

| Observation | Time | WL | Displacem | Weight |
|---|---|---|---|---|
| 1 | 0.25 | 4.8 | 1.18 | 1 |
| 2 | 0.5 | 4.6 | 0.98 | 1 |
| 3 | 0.75 | 4.42 | 0.8 | 1 |
| 4 | 1 | 4.31 | 0.69 | 1 |
| 5 | 1.25 | 4.2 | 0.58 | 1 |
| 6 | 1.5 | 4.15 | 0.53 | 1 |
| 7 | 1.75 | 4.09 | 0.47 | 1 |
| 8 | 2 | 4.06 | 0.44 | 1 |
| 9 | 2.25 | 4.03 | 0.41 | 1 |
| 10 | 2.5 | 4.01 | 0.39 | 1 |
| 11 | 2.75 | 3.99 | 0.37 | 1 |
| 12 | 3 | 3.97 | 0.35 | 1 |
| 13 | 3.5 | 3.94 | 0.32 | 1 |
| 14 | 4 | 3.91 | 0.29 | 1 |
| 15 | 4.5 | 3.89 | 0.27 | 1 |
| 16 | 5 | 3.87 | 0.25 | 1 |
| 17 | 5.5 | 3.86 | 0.24 | 1 |
| 18 | 6 | 3.84 | 0.22 | 1 |
| 19 | 6.5 | 3.84 | 0.22 | 1 |
| 20 | 7 | 3.83 | 0.21 | 1 |
| 21 | 8 | 3.81 | 0.19 | 1 |
| 22 | 8.5 | 3.8 | 0.18 | 1 |
| 23 | 9 | 3.8 | 0.18 | 1 |
| 24 | 9.5 | 3.79 | 0.17 | 1 |
| 25 | 10 | 3.78 | 0.16 | 1 |
| 26 | 11 | 3.77 | 0.15 | 1 |
| 27 | 12 | 3.76 | 0.14 | 1 |
| 28 | 13 | 3.75 | 0.13 | 1 |
| 29 | 14 | 3.74 | 0.12 | 1 |
| 30 | 15 | 3.74 | 0.12 | 1 |
| 31 | 16 | 3.73 | 0.11 | 1 |
| 32 | 17 | 3.73 | 0.11 | 1 |
| 33 | 18 | 3.72 | 0.1 | 1 |
| 34 | 19 | 3.71 | 0.09 | 1 |
| 35 | 20 | 3.71 | 0.09 | 1 |

**SJ1MW15 Slug Out**

| Observatio | Time | WL | Displacem | Weight |
|---|---|---|---|---|
| 1 | 0.25 | 5.35 | 1.77 | 1 |
| 2 | 0.5 | 5.24 | 1.66 | 1 |
| 3 | 0.75 | 5.15 | 1.57 | 1 |
| 4 | 1 | 5.07 | 1.49 | 1 |
| 5 | 1.25 | 4.98 | 1.4 | 1 |
| 6 | 1.5 | 4.91 | 1.33 | 1 |
| 7 | 1.75 | 4.85 | 1.27 | 1 |
| 8 | 2 | 4.79 | 1.21 | 1 |
| 9 | 2.25 | 4.73 | 1.15 | 1 |
| 10 | 2.5 | 4.68 | 1.1 | 1 |
| 11 | 2.75 | 4.62 | 1.04 | 1 |
| 12 | 3 | 4.57 | 0.99 | 1 |
| 13 | 3.5 | 4.48 | 0.9 | 1 |
| 14 | 4 | 4.4 | 0.82 | 1 |
| 15 | 4.5 | 4.33 | 0.75 | 1 |
| 16 | 5 | 4.27 | 0.69 | 1 |
| 17 | 5.5 | 4.2 | 0.62 | 1 |
| 18 | 6 | 4.15 | 0.57 | 1 |
| 19 | 6.5 | 4.11 | 0.53 | 1 |
| 20 | 7 | 4.07 | 0.49 | 1 |
| 21 | 7.5 | 4.03 | 0.45 | 1 |
| 22 | 8 | 4 | 0.42 | 1 |
| 23 | 8.5 | 3.97 | 0.39 | 1 |
| 24 | 9 | 3.94 | 0.36 | 1 |
| 25 | 9.5 | 3.91 | 0.33 | 1 |
| 26 | 10 | 3.89 | 0.31 | 1 |
| 27 | 11 | 3.85 | 0.27 | 1 |
| 28 | 12 | 3.82 | 0.24 | 1 |
| 29 | 13 | 3.79 | 0.21 | 1 |
| 30 | 14 | 3.77 | 0.19 | 1 |
| 31 | 15 | 3.75 | 0.17 | 1 |
| 32 | 16 | 3.73 | 0.15 | 1 |
| 33 | 17 | 3.71 | 0.13 | 1 |
| 34 | 18 | 3.7 | 0.12 | 1 |
| 35 | 19 | 3.69 | 0.11 | 1 |
| 36 | 20 | 3.67 | 0.09 | 1 |




## SJ1MW15 SLUG OUT

Data Set: J:\...\SJ1MW15_out.aqt
Date: 11/14/07 Time: 13:37:26

## PROJECT INFORMATION

Company: PBW
Client: Gulfco
Project: 1352-H2
Test Location: Freeport, TX
Test Well: SJ1MW15
Test Date: 11-7-07

## AQUIFER DATA

Saturated Thickness: 12.5 ft Anisotropy Ratio (Kz/Kr): 1.

## WELL DATA (SJ1MW15)

Initial Displacement: 2.22 ft
Wellbore Radius: 0.42 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.2
Casing Radius: 0.08 ft
Well Skin Radius: 0.42 ft
Total Well Penetration Depth: 12.5 ft

## SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice

K = 7.301E-05 cm/sec y0 = 1.769 ft

171720

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\Analysis based on Screen Length\SJ1MW15_out.aqt
Title: SJ1MW15 Slug Out
Date: 11/14/07
Time: 13:37:31

## PROJECT INFORMATION

Company: PBW
Client: Gulfco
Project: 1352-H2
Location: Freeport, TX
Test Date: 11-7-07
Test Well: SJ1MW15

## AQUIFER DATA

Saturated Thickness: 12.5 ft
Anisotropy Ratio (Kz/Kr): 1.

## SLUG TEST WELL DATA

Initial Displacement: 2.22 ft
Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft
Well Skin Radius: 0.42 ft
Screen Length: 10. ft
Total Well Penetration Depth: 12.5 ft
Gravel Pack Porosity: 0.2

No. of observations: 36

Observation Data

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 0.25 | 1.77 | 6.5 | 0.53 |
| 0.5 | 1.66 | 7. | 0.49 |
| 0.75 | 1.57 | 7.5 | 0.45 |
| 1. | 1.49 | 8. | 0.42 |
| 1.25 | 1.4 | 8.5 | 0.39 |
| 1.5 | 1.33 | 9. | 0.36 |
| 1.75 | 1.27 | 9.5 | 0.33 |
| 2. | 1.21 | 10. | 0.31 |
| 2.25 | 1.15 | 11. | 0.27 |
| 2.5 | 1.1 | 12. | 0.24 |
| 2.75 | 1.04 | 13. | 0.21 |
| 3. | 0.99 | 14. | 0.19 |
| 3.5 | 0.9 | 15. | 0.17 |
| 4. | 0.82 | 16. | 0.15 |
| 4.5 | 0.75 | 17. | 0.13 |
| 5. | 0.69 | 18. | 0.12 |
| 5.5 | 0.62 | 19. | 0.11 |
| 6. | 0.57 | 20. | 0.09 |

## SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

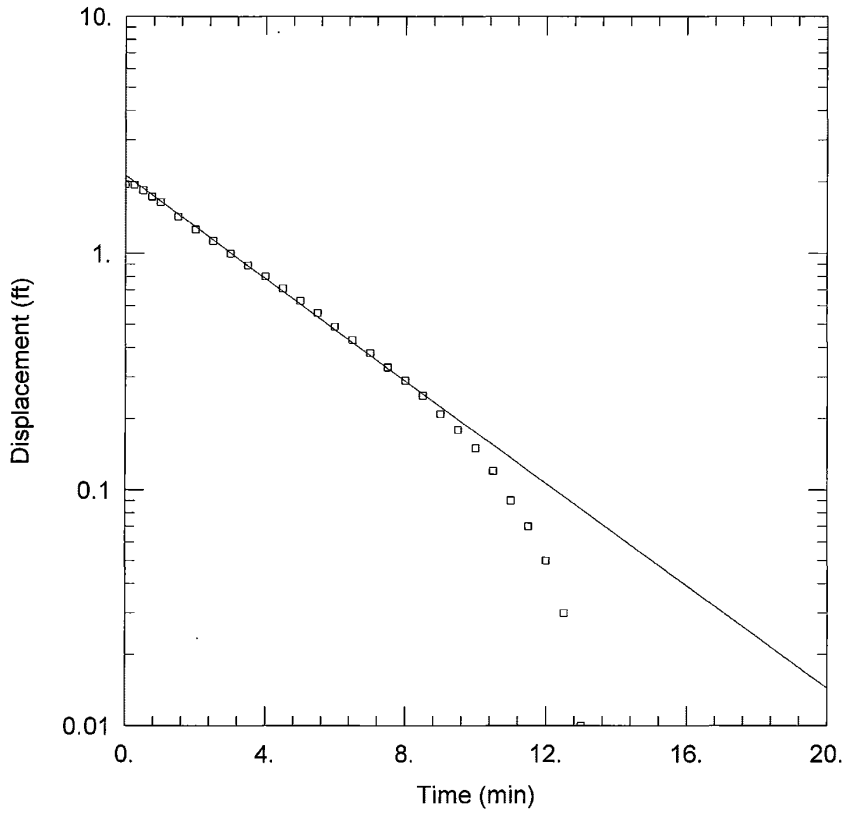
## VISUAL ESTIMATION RESULTS

### Estimated Parameters

| Parameter | Estimate | |
|---|---|---|
| K | 7.301E-05 | cm/sec |
| y0 | 1.769 | ft |



171721




ND4MW24B SLUG IN

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW24B Slug In.aqt
Date: 06/09/08 Time: 10:56:08

PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Test Location: Freeport, Texas
Test Well: ND4MW24B
Test Date: 6-4-08

AQUIFER DATA

Saturated Thickness: 5. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (ND4MW24B)

Initial Displacement: 1.95 ft Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft Well Skin Radius: 0.42 ft
Screen Length: 5. ft Total Well Penetration Depth: 5. ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice

K = 0.0001451 cm/sec y0 = 2.128 ft

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW24B Slug In.aqt
Title: ND4MW24B Slug In
Date: 06/09/08
Time: 10:56:12

## PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Location: Freeport, Texas
Test Date: 6-4-08
Test Well: ND4MW24B

## AQUIFER DATA

Saturated Thickness: 5. ft
Anisotropy Ratio (Kz/Kr): 1.

## SLUG TEST WELL DATA

Initial Displacement: 1.95 ft
Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft
Well Skin Radius: 0.42 ft
Screen Length: 5. ft
Total Well Penetration Depth: 5. ft
Gravel Pack Porosity: 0.2

No. of observations: 28

Observation Data

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 0.25 | 1.94 | 6.5 | 0.43 |
| 0.5 | 1.84 | 7. | 0.38 |
| 0.75 | 1.73 | 7.5 | 0.33 |
| 1. | 1.64 | 8. | 0.29 |
| 1.5 | 1.43 | 8.5 | 0.25 |
| 2. | 1.26 | 9. | 0.21 |
| 2.5 | 1.13 | 9.5 | 0.18 |
| 3. | 1. | 10. | 0.15 |
| 3.5 | 0.89 | 10.5 | 0.12 |
| 4. | 0.8 | 11. | 0.09 |
| 4.5 | 0.71 | 11.5 | 0.07 |
| 5. | 0.63 | 12. | 0.05 |
| 5.5 | 0.56 | 12.5 | 0.03 |
| 6. | 0.49 | 13. | 0.01 |

## SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

## VISUAL ESTIMATION RESULTS



171723

Estimated Parameters

| Parameter | Estimate | |
|---|---|---|
| K | 0.0001451 | cm/sec |
| y0 | 2.128 | ft |

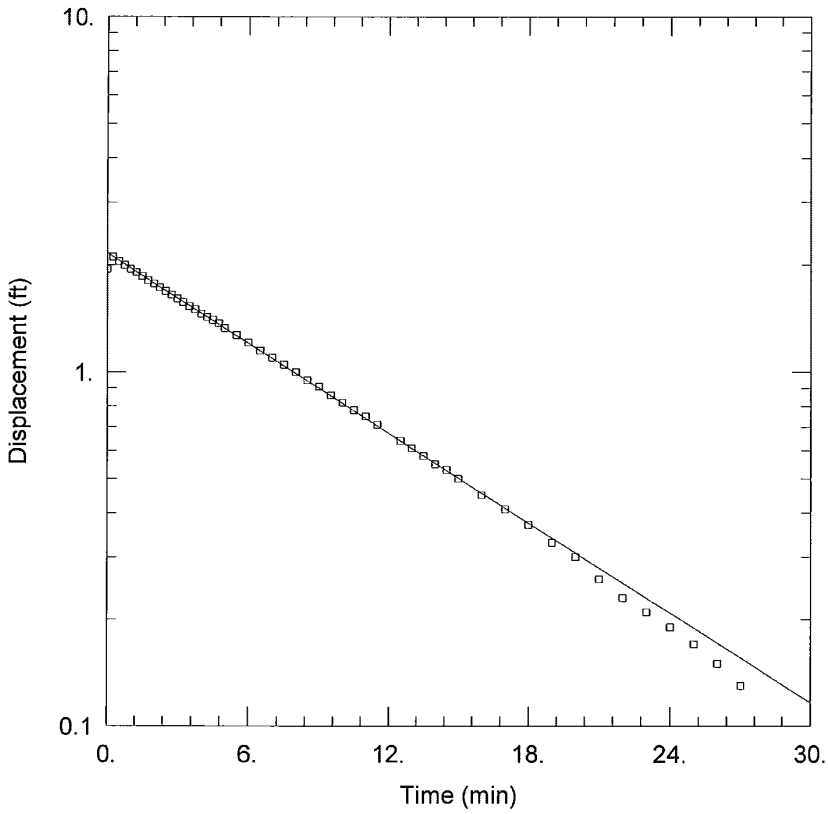


171724

Errors Detected in Data Set
No errors detected!

Options Available
Choose a solution to perform forward solution or curve matching analyses.

Data Set Summary
Slug Test
Total no. of observations: 28




ND4MW24B SLUG OUT

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW24B Slug Out.aqt
Date: 06/09/08 Time: 11:03:09

PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Test Location: Freeport, TX
Test Well: ND4MW24B
Test Date: 6-5-08

AQUIFER DATA

Saturated Thickness: 5. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (ND4MW24B)

Initial Displacement: 1.95 ft
Wellbore Radius: 0.42 ft
Screen Length: 5. ft
Gravel Pack Porosity: 0.2
Casing Radius: 0.08 ft
Well Skin Radius: 0.42 ft
Total Well Penetration Depth: 5. ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 5.661E-05 cm/sec
y0 = 2.163 ft

171726

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW24B Slug Out.aqt
Title: ND4MW24B Slug Out
Date: 06/09/08
Time: 11:03:15

## PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Location: Freeport, TX
Test Date: 6-5-08
Test Well: ND4MW24B

## AQUIFER DATA

Saturated Thickness: 5. ft
Anisotropy Ratio (Kz/Kr): 1.

## SLUG TEST WELL DATA

Initial Displacement: 1.95 ft
Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft
Well Skin Radius: 0.42 ft
Screen Length: 5. ft
Total Well Penetration Depth: 5. ft
Gravel Pack Porosity: 0.2

No. of observations: 51

Observation Data

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 0.25 | 2.11 | 8.5 | 0.95 |
| 0.5 | 2.05 | 9. | 0.91 |
| 0.75 | 2. | 9.5 | 0.86 |
| 1. | 1.95 | 10. | 0.82 |
| 1.25 | 1.91 | 10.5 | 0.78 |
| 1.5 | 1.86 | 11. | 0.75 |
| 1.75 | 1.81 | 11.5 | 0.71 |
| 2. | 1.77 | 12.5 | 0.64 |
| 2.25 | 1.73 | 13. | 0.61 |
| 2.5 | 1.69 | 13.5 | 0.58 |
| 2.75 | 1.65 | 14. | 0.55 |
| 3. | 1.61 | 14.5 | 0.53 |
| 3.25 | 1.57 | 15. | 0.5 |
| 3.5 | 1.53 | 16. | 0.45 |
| 3.75 | 1.5 | 17. | 0.41 |
| 4. | 1.46 | 18. | 0.37 |
| 4.25 | 1.43 | 19. | 0.33 |
| 4.5 | 1.4 | 20. | 0.3 |
| 4.75 | 1.37 | 21. | 0.26 |
| 5. | 1.33 | 22. | 0.23 |
| 5.5 | 1.27 | 23. | 0.21 |



171727

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 6. | 1.21 | 24. | 0.19 |
| 6.5 | 1.15 | 25. | 0.17 |
| 7. | 1.1 | 26. | 0.15 |
| 7.5 | 1.05 | 27. | 0.13 |
| 8. | 1. | | |

## SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

## VISUAL ESTIMATION RESULTS

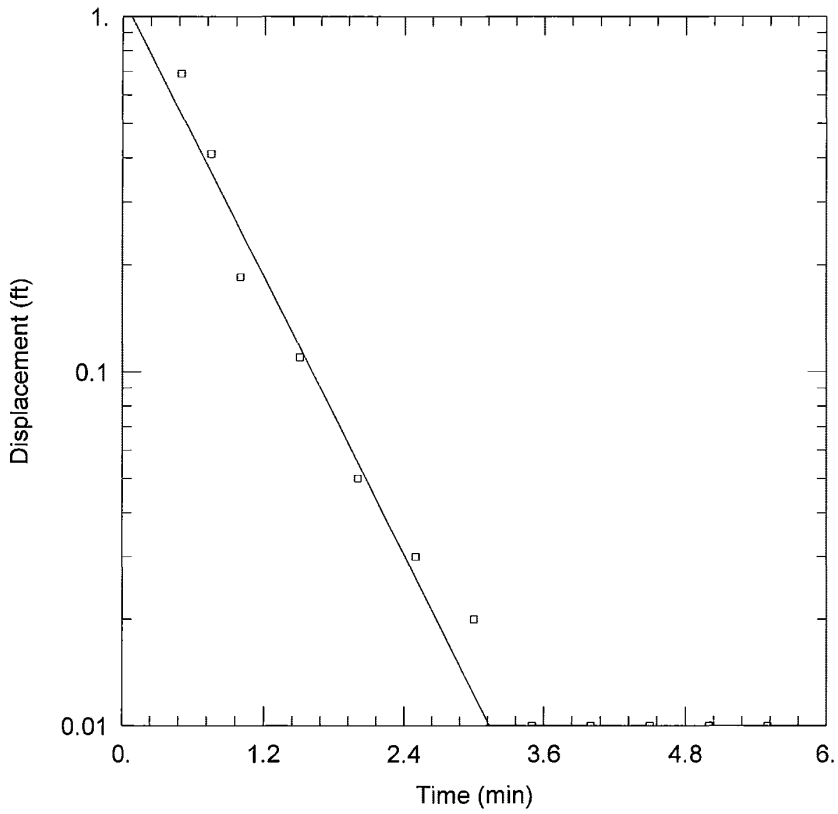
### Estimated Parameters

| Parameter | Estimate | |
|---|---|---|
| K | 5.661E-05 | cm/sec |
| y0 | 2.163 | ft |

Errors Detected in Data Set
WARNING: Maximum displacement > initial displacement!

Options Available
Choose a solution to perform forward solution or curve matching analyses.

Data Set Summary
Slug Test
Total no. of observations: 51




NG3MW25B SLUG IN

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW25BSlug In.aqt
Date: 06/09/08 Time: 10:06:52

PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Test Location: Freeport, TX
Test Well: NG3MW25B
Test Date: 6-4-08

AQUIFER DATA

Saturated Thickness: 16. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (NG3MW25B)

Initial Displacement: 1.95 ft
Wellbore Radius: 0.42 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.2
Casing Radius: 0.08 ft
Well Skin Radius: 0.42 ft
Total Well Penetration Depth: 11. ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.0005216 cm/sec
y0 = 1.127 ft

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW25BSlug In.aqt
Title: NG3MW25B Slug In
Date: 06/09/08
Time: 10:07:00

## PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Location: Freeport, TX
Test Date: 6-4-08
Test Well: NG3MW25B

## AQUIFER DATA

Saturated Thickness: 16. ft
Anisotropy Ratio (Kz/Kr): 1.

## SLUG TEST WELL DATA

Initial Displacement: 1.95 ft
Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft
Well Skin Radius: 0.42 ft
Screen Length: 10. ft
Total Well Penetration Depth: 11. ft
Gravel Pack Porosity: 0.2

No. of observations: 12

Observation Data

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 0.5 | 0.69 | 3. | 0.02 |
| 0.75 | 0.41 | 3.5 | 0.01 |
| 1. | 0.185 | 4. | 0.01 |
| 1.5 | 0.11 | 4.5 | 0.01 |
| 2. | 0.05 | 5. | 0.01 |
| 2.5 | 0.03 | 5.5 | 0.01 |

## SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

## VISUAL ESTIMATION RESULTS

### Estimated Parameters

| Parameter | Estimate | |
|---|---|---|
| K | 0.0005216 | cm/sec |
| y0 | 1.127 | ft |



171731

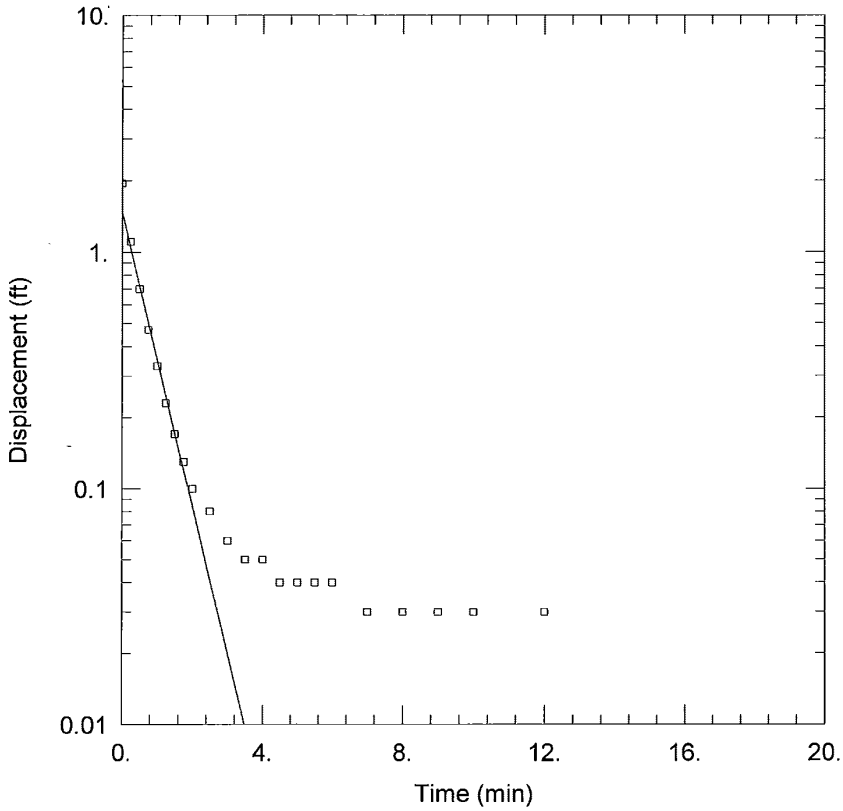
Errors Detected in Data Set
No errors detected!

Options Available
Choose a solution to perform forward solution or curve matching analyses.

Data Set Summary
Slug Test
Total no. of observations: 12



171732




NG3MW25B SLUG OUT

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW25BSlug Out.aqt
Date: 06/09/08 Time: 09:39:52

PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Test Location: Freeport, TX
Test Well: NG3MW25B
Test Date: 6-5-08

AQUIFER DATA

Saturated Thickness: 16. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (NG3MW25B)

Initial Displacement: 1.95 ft
Wellbore Radius: 0.42 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.2
Casing Radius: 0.08 ft
Well Skin Radius: 0.42 ft
Total Well Penetration Depth: 11. ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.0004975 cm/sec
y0 = 1.483 ft

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW25BSlug Out.aqt
Title: NG3MW25B Slug Out
Date: 06/09/08
Time: 09:40:00

## PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Location: Freeport, TX
Test Date: 6-5-08
Test Well: NG3MW25B

## AQUIFER DATA

Saturated Thickness: 16. ft
Anisotropy Ratio (Kz/Kr): 1.

## SLUG TEST WELL DATA

Initial Displacement: 1.95 ft
Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft
Well Skin Radius: 0.42 ft
Screen Length: 10. ft
Total Well Penetration Depth: 11. ft
Gravel Pack Porosity: 0.2

No. of observations: 21

Observation Data

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 0.25 | 1.11 | 4. | 0.05 |
| 0.5 | 0.7 | 4.5 | 0.04 |
| 0.75 | 0.47 | 5. | 0.04 |
| 1. | 0.33 | 5.5 | 0.04 |
| 1.25 | 0.23 | 6. | 0.04 |
| 1.5 | 0.17 | 7. | 0.03 |
| 1.75 | 0.13 | 8. | 0.03 |
| 2. | 0.1 | 9. | 0.03 |
| 2.5 | 0.08 | 10. | 0.03 |
| 3. | 0.06 | 12. | 0.03 |
| 3.5 | 0.05 | | |

## SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

## VISUAL ESTIMATION RESULTS

Estimated Parameters



171734

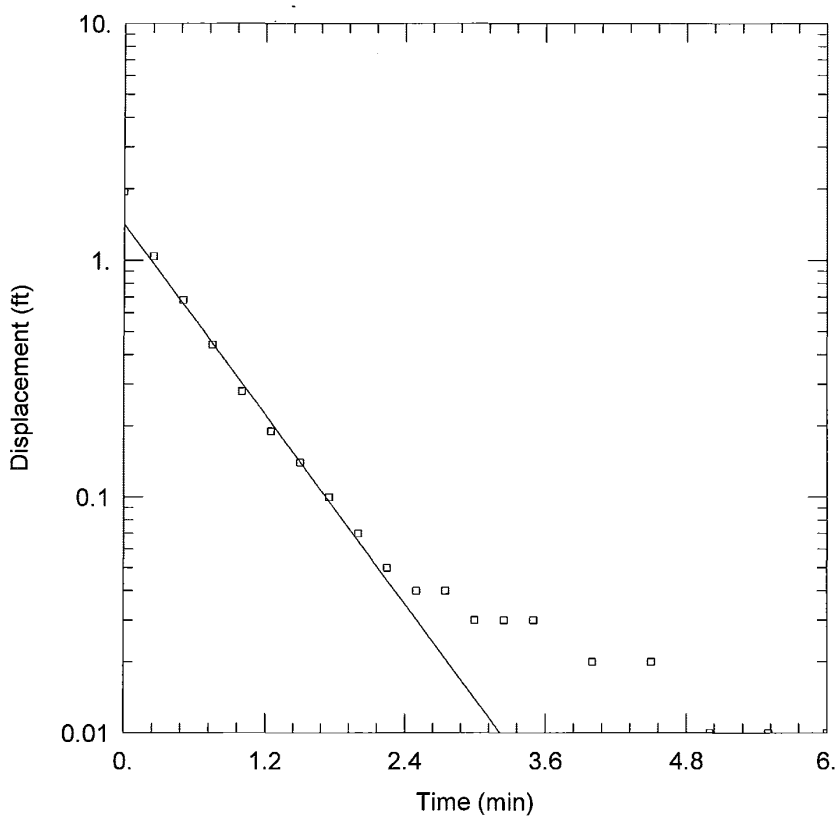
Errors Detected in Data Set
No errors detected!

Options Available
Choose a solution to perform forward solution or curve matching analyses.

Data Set Summary
Slug Test
Total no. of observations: 21



171735




NG3MW25B SECOND SLUG IN

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW25BSecondIn.aqt
Date: 06/09/08 Time: 09:52:27

PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Test Location: Freeport, Texas
Test Well: NG3MW25B
Test Date: 6-5-08

AQUIFER DATA

Saturated Thickness: 16. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (NG3MW25B)

Initial Displacement: 1.95 ft
Wellbore Radius: 0.42 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.2
Casing Radius: 0.08 ft
Well Skin Radius: 0.42 ft
Total Well Penetration Depth: 11. ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.0005336 cm/sec
y0 = 1.419 ft

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW25BSecondIn.aqt
Title: NG3MW25B Second Slug In
Date: 06/09/08
Time: 09:54:27

## PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Location: Freeport, Texas
Test Date: 6-5-08
Test Well: NG3MW25B

## AQUIFER DATA

Saturated Thickness: 16. ft
Anisotropy Ratio (Kz/Kr): 1.

## SLUG TEST WELL DATA

Initial Displacement: 1.95 ft
Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft
Well Skin Radius: 0.42 ft
Screen Length: 10. ft
Total Well Penetration Depth: 11. ft
Gravel Pack Porosity: 0.2

No. of observations: 19

Observation Data

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 0.25 | 1.04 | 2.75 | 0.04 |
| 0.5 | 0.68 | 3. | 0.03 |
| 0.75 | 0.44 | 3.25 | 0.03 |
| 1. | 0.28 | 3.5 | 0.03 |
| 1.25 | 0.19 | 4. | 0.02 |
| 1.5 | 0.14 | 4.5 | 0.02 |
| 1.75 | 0.1 | 5. | 0.01 |
| 2. | 0.07 | 5.5 | 0.01 |
| 2.25 | 0.05 | 6. | 0.01 |
| 2.5 | 0.04 | | |

## SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

## VISUAL ESTIMATION RESULTS

### Estimated Parameters

| Parameter | Estimate |
|---|---|



171737

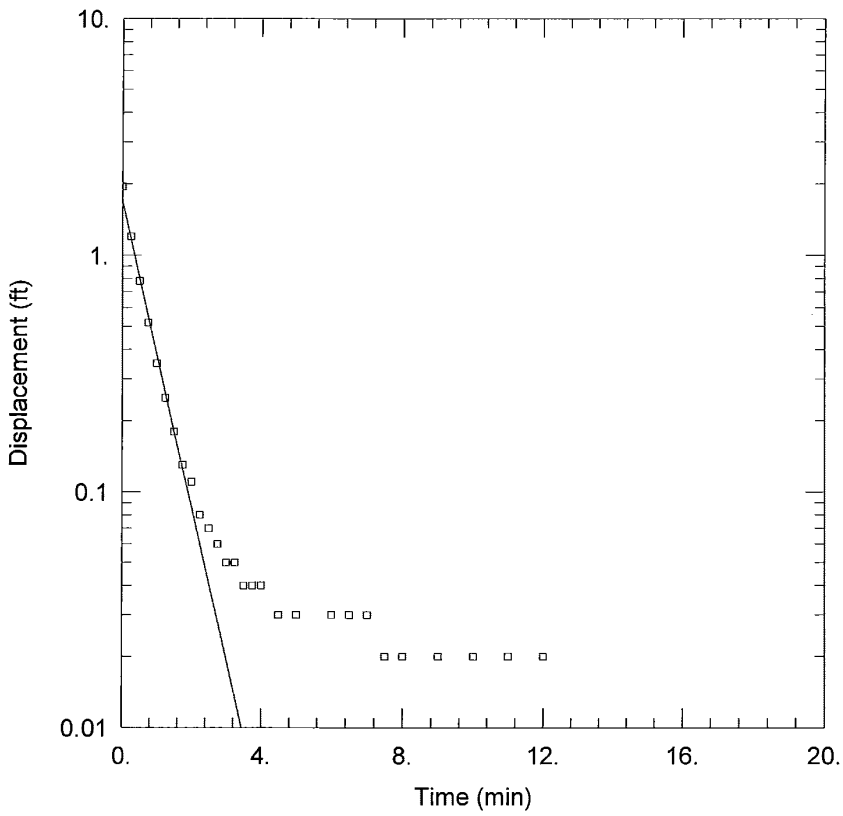
Errors Detected in Data Set
No errors detected!

Options Available
Choose a solution to perform forward solution or curve matching analyses.

Data Set Summary
Slug Test
Total no. of observations: 19



171738




NG3MW25B SECOND SLUG OUT

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW25BSecond Out.aqt
Date: 06/09/08 Time: 11:36:49

PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Test Location: Freeport, TX
Test Well: NG3MW25B
Test Date: 6-5-08

AQUIFER DATA

Saturated Thickness: 16. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (NG3MW25B)

Initial Displacement: 1.95 ft
Wellbore Radius: 0.42 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.2
Casing Radius: 0.08 ft
Well Skin Radius: 0.42 ft
Total Well Penetration Depth: 11. ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.0005164 cm/sec
y0 = 1.697 ft

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW25BSecond Out.aqt
Title: NG3MW24B Second Slug Out
Date: 06/09/08
Time: 10:02:10

## PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Location: Freeport, TX
Test Date: 6-5-08
Test Well: NG3MW25B

## AQUIFER DATA

Saturated Thickness: 16. ft
Anisotropy Ratio (Kz/Kr): 1.

## SLUG TEST WELL DATA

Initial Displacement: 1.95 ft
Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft
Well Skin Radius: 0.42 ft
Screen Length: 10. ft
Total Well Penetration Depth: 11. ft
Gravel Pack Porosity: 0.2

No. of observations: 27

Observation Data

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 0.25 | 1.2 | 3.75 | 0.04 |
| 0.5 | 0.78 | 4. | 0.04 |
| 0.75 | 0.52 | 4.5 | 0.03 |
| 1. | 0.35 | 5. | 0.03 |
| 1.25 | 0.25 | 6. | 0.03 |
| 1.5 | 0.18 | 6.5 | 0.03 |
| 1.75 | 0.13 | 7. | 0.03 |
| 2. | 0.11 | 7.5 | 0.02 |
| 2.25 | 0.08 | 8. | 0.02 |
| 2.5 | 0.07 | 9. | 0.02 |
| 2.75 | 0.06 | 10. | 0.02 |
| 3. | 0.05 | 11. | 0.02 |
| 3.25 | 0.05 | 12. | 0.02 |
| 3.5 | 0.04 | | |

## SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

## VISUAL ESTIMATION RESULTS



171740

Estimated Parameters

| Parameter | Estimate | |
|---|---|---|
| K | 0.0005164 | cm/sec |
| y0 | 1.697 | ft |



171741

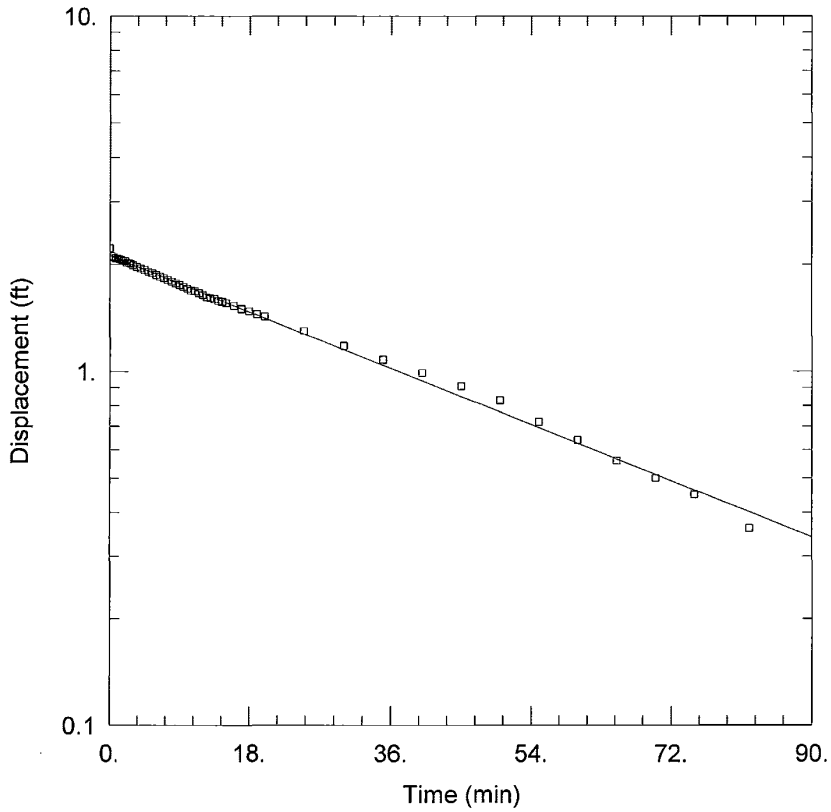
Errors Detected in Data Set
No errors detected!

Options Available
Choose a solution to perform forward solution or curve matching analyses.

Data Set Summary
Slug Test
Total no. of observations: 27



171742




OMW27B SLUG IN

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW27B Slug In.aqt
Date: 06/09/08 Time: 11:18:17

PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Test Location: Freeport, TX
Test Well: OMW27B
Test Date: 6-4-08

AQUIFER DATA

Saturated Thickness: 3. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OMW27B)

Initial Displacement: 2.22 ft
Wellbore Radius: 0.42 ft
Screen Length: 2.5 ft
Gravel Pack Porosity: 0.2
Casing Radius: 0.08 ft
Well Skin Radius: 0.42 ft
Total Well Penetration Depth: 3. ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 1.825E-05 cm/sec
y0 = 2.121 ft

171743

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW27B Slug In.aqt
Title: OMW27B Slug In
Date: 06/09/08
Time: 11:18:23

PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Location: Freeport, TX
Test Date: 6-4-08
Test Well: OMW27B

AQUIFER DATA

Saturated Thickness: 3. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Initial Displacement: 2.22 ft
Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft
Well Skin Radius: 0.42 ft
Screen Length: 2.5 ft
Total Well Penetration Depth: 3. ft
Gravel Pack Porosity: 0.2

No. of observations: 53

Observation Data

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 0.25 | 2.11 | 11. | 1.68 |
| 0.5 | 2.09 | 11.5 | 1.66 |
| 0.75 | 2.08 | 12. | 1.64 |
| 1. | 2.08 | 12.5 | 1.62 |
| 1.25 | 2.07 | 13. | 1.61 |
| 1.5 | 2.06 | 13.5 | 1.6 |
| 1.75 | 2.05 | 14. | 1.58 |
| 2. | 2.04 | 14.5 | 1.57 |
| 2.25 | 2.02 | 15. | 1.56 |
| 2.5 | 2.02 | 16. | 1.53 |
| 2.75 | 2.01 | 17. | 1.5 |
| 3. | 1.99 | 18. | 1.48 |
| 3.5 | 1.97 | 19. | 1.45 |
| 4. | 1.95 | 20. | 1.43 |
| 4.5 | 1.93 | 25. | 1.3 |
| 5. | 1.91 | 30. | 1.18 |
| 5.5 | 1.89 | 35. | 1.08 |
| 6. | 1.87 | 40. | 0.99 |
| 6.5 | 1.85 | 45. | 0.91 |
| 7. | 1.83 | 50. | 0.83 |
| 7.5 | 1.81 | 55. | 0.72 |



171744

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 8. | 1.79 | 60. | 0.64 |
| 8.5 | 1.77 | 65. | 0.56 |
| 9. | 1.75 | 70. | 0.5 |
| 9.5 | 1.73 | 75. | 0.45 |
| 10. | 1.71 | 82. | 0.36 |
| 10.5 | 1.69 | | |

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

| Parameter | Estimate | |
|---|---|---|
| K | 1.825E-05 | cm/sec |
| y0 | 2.121 | ft |



171745

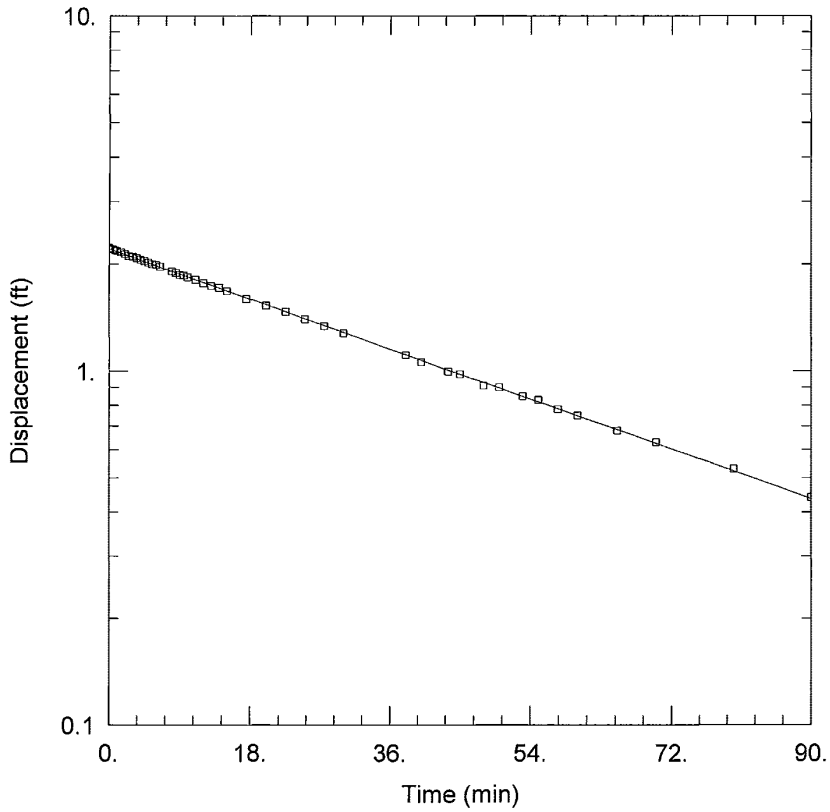
Errors Detected in Data Set
No errors detected!

Options Available
Choose a solution to perform forward solution or curve matching analyses.

Data Set Summary
Slug Test
Total no. of observations: 53



171746




OMW27B SLUG OUT

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW27B Slug Out.aqt
Date: 06/09/08 Time: 11:12:44

PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Test Location: Freeport, TX
Test Well: OMW27B
Test Date: 6-5-08

AQUIFER DATA

Saturated Thickness: 3. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OMW27B)

Initial Displacement: 2.22 ft
Wellbore Radius: 0.42 ft
Screen Length: 2.5 ft
Gravel Pack Porosity: 0.2
Casing Radius: 0.08 ft
Well Skin Radius: 0.42 ft
Total Well Penetration Depth: 3. ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 1.618E-05 cm/sec
y0 = 2.207 ft

Data Set: J:\1352 - Gulfco RI\Groundwater\Slug Tests\B-Zone\MW27B Slug Out.aqt
Title: OMW27B Slug Out
Date: 06/09/08
Time: 11:12:50

## PROJECT INFORMATION

Company: PBW
Client: Gulfco Marine Maintenance
Project: 1352-H4
Location: Freeport, TX
Test Date: 6-5-08
Test Well: OMW27B

## AQUIFER DATA

Saturated Thickness: 3. ft
Anisotropy Ratio (Kz/Kr): 1.

## SLUG TEST WELL DATA

Initial Displacement: 2.22 ft
Casing Radius: 0.08 ft
Wellbore Radius: 0.42 ft
Well Skin Radius: 0.42 ft
Screen Length: 2.5 ft
Total Well Penetration Depth: 3. ft
Gravel Pack Porosity: 0.2

No. of observations: 44

Observation Data

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 0.5 | 2.2 | 14. | 1.72 |
| 0.75 | 2.19 | 15. | 1.68 |
| 1. | 2.18 | 17.5 | 1.6 |
| 1.5 | 2.16 | 20. | 1.53 |
| 2. | 2.135 | 22.5 | 1.47 |
| 2.5 | 2.11 | 25. | 1.4 |
| 3. | 2.1 | 27.5 | 1.34 |
| 3.5 | 2.08 | 30. | 1.28 |
| 4. | 2.06 | 38. | 1.11 |
| 4.5 | 2.04 | 40. | 1.06 |
| 5. | 2.02 | 43.5 | 1. |
| 5.5 | 2. | 45. | 0.98 |
| 6. | 1.99 | 48. | 0.91 |
| 6.5 | 1.97 | 50. | 0.9 |
| 8. | 1.91 | 53. | 0.85 |
| 8.5 | 1.89 | 55. | 0.83 |
| 9. | 1.87 | 57.5 | 0.78 |
| 9.5 | 1.86 | 60. | 0.75 |
| 10. | 1.84 | 65. | 0.68 |
| 11. | 1.81 | 70. | 0.63 |
| 12. | 1.77 | 80. | 0.53 |



171748

| Time (min) | Displacement (ft) | Time (min) | Displacement (ft) |
|---|---|---|---|
| 13. | 1.74 | 90. | 0.44 |

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

| Parameter | Estimate | |
|---|---|---|
| K | 1.618E-05 | cm/sec |
| y0 | 2.207 | ft |



171749

Errors Detected in Data Set
No errors detected!

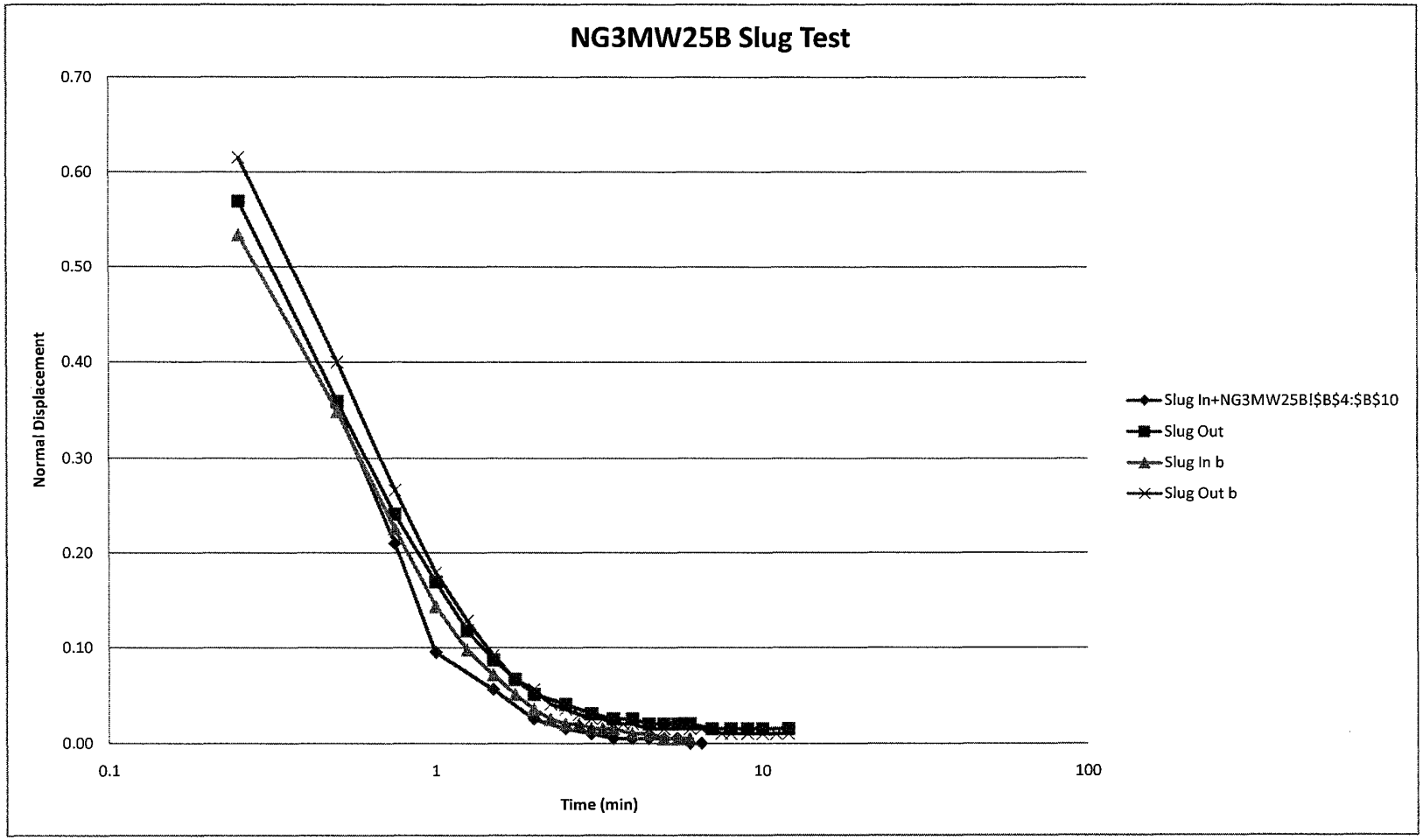
Options Available
Choose a solution to perform forward solution or curve matching analyses.

Data Set Summary
Slug Test
Total no. of observations: 44

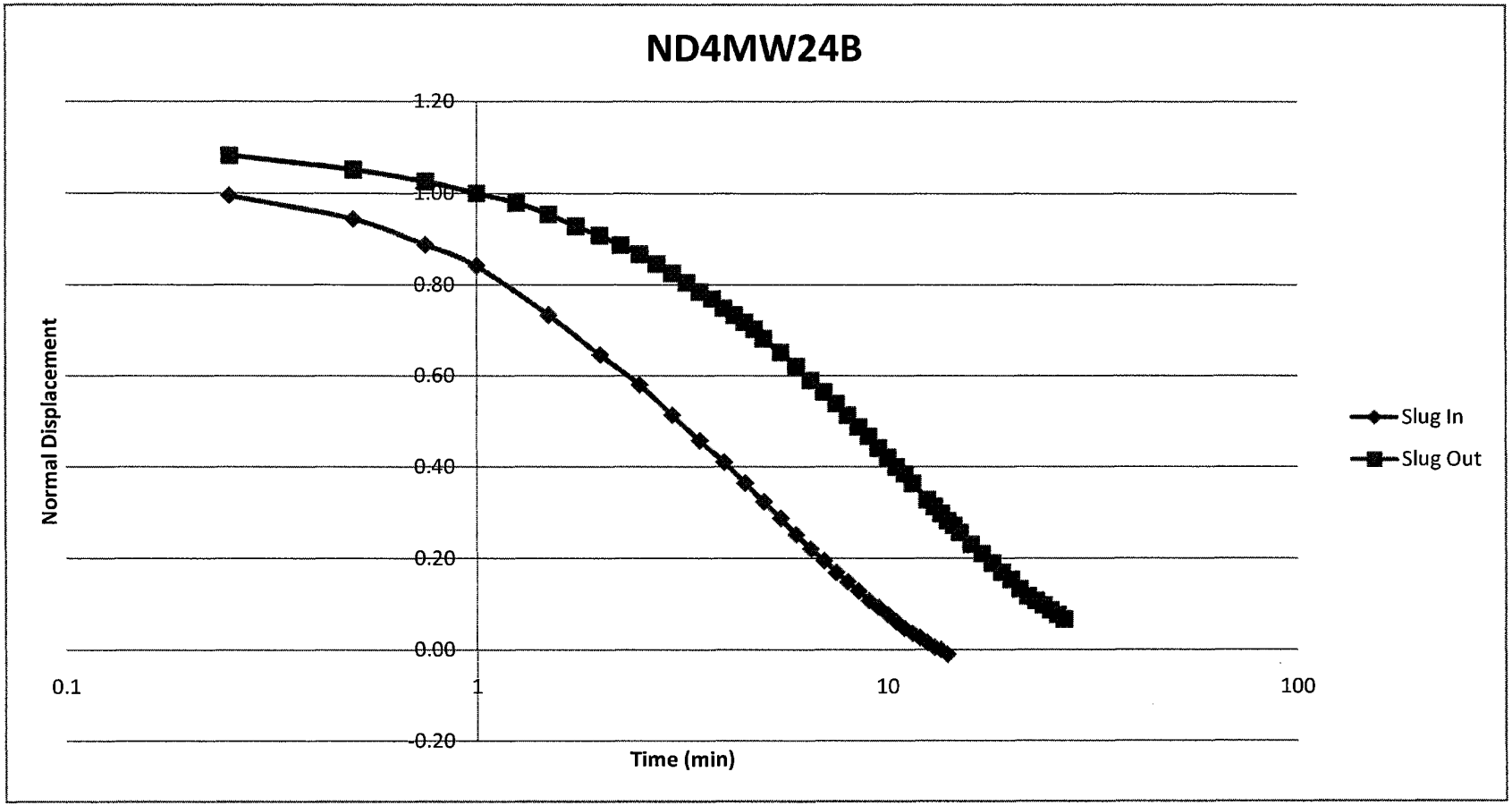
**GULFCO**

**B-ZONE SLUG TEST**

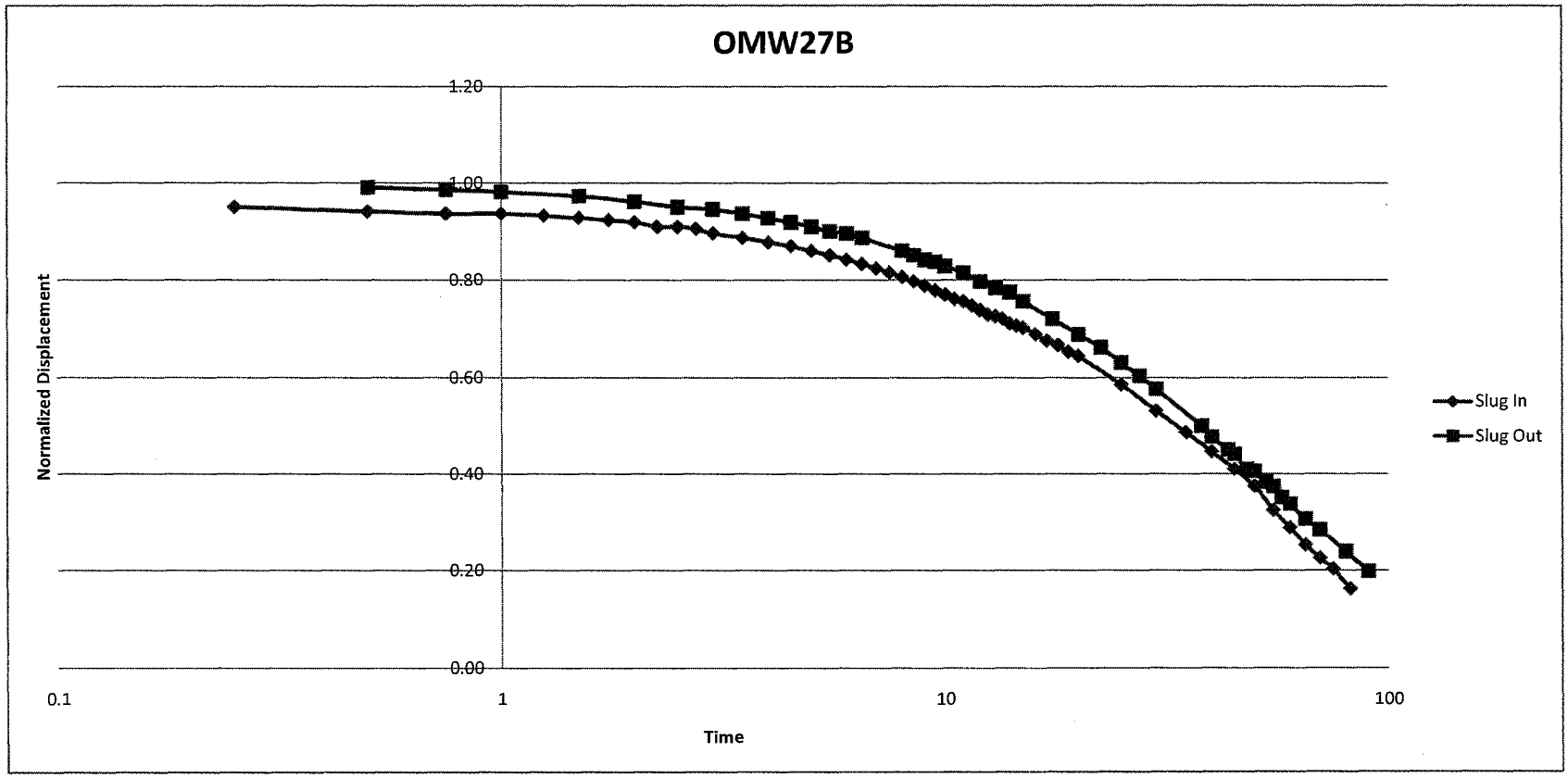
| Well Number | Well Diameter (in) | Well Radius (ft) (r(c)) | Total Well Depth | Screened Interval (ft BMP) | | Type of Test | Static WL | WL Below Top of Screen | Conf./Uncon. | Expected Displacement | Sat Aquifer Thickness (D) | Saturated Screen Length | Depth of Well Pentration (H) | Well Bore Radius (r(w)) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Top | Bottom | | | | | | | | | |
| NG3MW25B | 2 | 0.08 | 27.5 | 17 | 27 | Slug In | 3.51 | No | Confined | 1.95 | 16 | 10 | 11 | 0.42 |
| | | | | | | Slug Out | 3.51 | | | | | | | |
| | | | | | | Slug In | 3.54 | | | | | | | |
| | | | | | | Slug Out | 3.45 | | | | | | | |
| ND4MW24B | 2 | 0.08 | 27 | 21.5 | 26.5 | Slug In | 5.04 | No | Confined | 1.95 | 5 | 5 | 5 | 0.42 |
| | | | | | | Slug Out | 5.24 | | | | | | | |
| OMW27B | 2 | 0.08 | 27 | 24.5 | 27 | Slug In | 5.13 | No | Confined | 2.22 | 3 | 2.5 | 3 | 0.42 |
| | | | | | | Slug Out | 5.21 | | | | | | | |


NG3MW25B Slug Test
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Normal Displacement
0.1
1
10
100
Time (min)
Slug In+NG3MW25BI$B$4:$B$10
Slug Out
Slug In b
Slug Out b

171753


ND4MW24B
1.20
1.00
0.80
0.60
0.40
0.20
0.00
-0.20
Normal Displacement
0.1
1
10
100
Time (min)
Slug In
Slug Out

171754


OMW27B
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Normalized Displacement
0.1
1
10
100
Time
Slug In
Slug Out

# SLUG TEST FORM

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, Texas 78664
Phone: (512) 671-3434 Fax: (512) 671-3446

| | |
|---|---|
| Date Tested: 6-4-08 | Well No.: MW25B |
| Slug IN or OUT: IN | Measuring Point (MP): TOC |
| Well Diameter (in.): 2" | MP Height (ft. above ground level): |
| Well Depth (ft. BGL): 27.5 | Slug Type (stainless, PVC, Teflon): PVC |
| Screen Interval (ft. BGL): 17-27 | Slug Length (ft.): 5' |
| Starting WL (ft. BMP): 3.51 | Slug Diameter (ft.): 1.25" |
| Decon. Procedures: Alconox / DI | Slug Volume (cu. ft.): 0.043 |
| | Expected Well Response (+/- ft.): + 1.95 |
| Start Time: | End Time: |
| | Performed by: L. Mason |

| Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) |
|---|---|---|---|---|---|---|---|
| 0.25 | — | 6 | 3.51 | | | | |
| 0.5 | 3.87 | 6.5 | 3.51 | | | | |
| 0.75 | 3.50 | 7 | | | | | |
| 1.0 | 3.45 | 7.5 | | | | | |
| 1.5 | 3.40 | 8 | | | | | |
| 2 | 3.46 | 8.5 | | | | | |
| 2.5 | 3.48 | 9 | | | | | |
| 3 | 3.49 | 9.5 | | | | | |
| 3.5 | 3.50 | 10 | | | | | |
| 4 | 3.50 | | | | | | |
| 4.5 | 3.50 | | | | | | |
| 5 | 3.50 | | | | | | |
| 5.5 | 3.50 | | | | | | |

k:\forms\field\Slug Test Form.xls

# SLUG TEST FORM

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, Texas 78664
Phone: (512) 671-3434 Fax: (512) 671-3446

| | |
|---|---|
| Date Tested: 6-5-08 | Well No.: MW25B |
| Slug IN or OUT: OUT | Measuring Point (MP): TOC |
| Well Diameter (in.): 2" | MP Height (ft. above ground level): |
| Well Depth (ft. BGL): 27.5 | Slug Type (stainless, PVC, Teflon): PVC |
| Screen Interval (ft. BGL): 17-27 | Slug Length (ft.): 5' |
| Starting WL (ft. BMP): 3.57 | Slug Diameter (ft.): ~~8~~ 1.25" |
| Decon. Procedures: Alconox, DI Water | Slug Volume (cu. ft.): 0.043 |
| slug in well overnight | Expected Well Response (+/- ft.): ~~6~~ 95 |
| Start Time: | End Time: |
| | Performed by: L. Mason |

| Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) |
|---|---|---|---|---|---|---|---|
| 0.25 | 4.62 | ~~3.25~~ | | 8 | 3.54 | | |
| 0.5 | 4.21 | 3.5 | 3.56 | ~~8.5~~ | | | |
| 0.75 | 3.98 | ~~3.75~~ | | 9 | 3.54 | | |
| 1 | 3.84 | 4 | 3.56 | ~~9.5~~ | | | |
| 1.25 | ~~4~~ 3.74 | ~~4.25~~ | | 10 | 3.54 | | |
| 1.5 | 3.68 | 4.5 | 3.55 | ~~11~~ | | | |
| 1.75 | 3.64 | ~~4.75~~ | | 12 | 3.54 | | |
| 2 | 3.61 | 5 | 3.55 | | | | |
| 2.5 | 3.59 | 5.5 | 3.55 | | | | |
| ~~2.25~~ | | 6 | 3.55 | | | | |
| ~~7.5~~ | | ~~6.5~~ | | | | | |
| ~~2.75~~ | | 7 | 3.54 | | | | |
| 3.0 | 3.57 | ~~7.5~~ | | | | | |

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171756

# SLUG TEST FORM

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, Texas 78664
Phone: (512) 671-3434 Fax: (512) 671-3446

| | |
|---|---|
| Date Tested: 6-5-08 | Well No.: MW-25 B |
| Slug IN or OUT: In | Measuring Point (MP): TOC |
| Well Diameter (in.): 2" | MP Height (ft. above ground level): |
| Well Depth (ft. BGL): 27.5 | Slug Type (stainless, PVC, Teflon): PVC |
| Screen Interval (ft. BGL): 17.27 | Slug Length (ft.): 5' |
| Starting WL (ft. BMP): 3.54 | Slug Diameter (ft.): 1.25" |
| Decon. Procedures: Alconox / DI | Slug Volume (cu. ft.): 0.043 |
| CIT @ 30 ft at ~9 min (25 ft) | Expected Well Response (+/- ft.): +1.95 |
| Start Time: | End Time: |
| | Performed by: L. Mann |

| Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) |
|---|---|---|---|---|---|---|---|
| 0.25 | 2.50 | ~~3.53~~ 3.5 | 3.51 | 10.0 | 3.46 | | |
| .5 | ~~2.80~~ 2.86 | 4.0 | 3.52 | ~~11.0~~ | | | |
| .75 | 3.10 | 4.5 | 3.52 | 12.0 | 3.48 | | |
| 1 | 3.26 | 5.0 | 3.53 | ~~13.0~~ | | | |
| 1.25 | 3.35 | 5.5 | 3.53 | 14.0 | 3.50 | | |
| 1.5 | 3.40 | 6.0 | 3.53 | 16.0 | 3.51 | | |
| 1.75 | 3.44 | ~~6.5~~ | | 18.0 | 3.51 | | |
| 2.0 | 3.47 | ~~7.0~~ | | 20.0 | 3.52 | | |
| 2.25 | 3.49 | ~~7.5~~ | | 22 | 3.51 | | |
| 2.5 | 3.50 | 8.0 | 3.45 | ~~24~~ | | | |
| 2.75 | 3.50 | ~~8.5~~ | | | | | |
| 3.0 | 3.51 | 9.0 | 3.45 | | | | |
| 3.25 | 3.51 | ~~9.5~~ | | | | | |

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# SLUG TEST FORM

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, Texas 78664
Phone: (512) 671-3434 Fax: (512) 671-3446

| | |
|---|---|
| Date Tested: 8-5-08 | Well No.: MW25B |
| Slug IN or OUT: OUT | Measuring Point (MP): TOC |
| Well Diameter (in.): 2" | MP Height (ft. above ground level): |
| Well Depth (ft. BGL): 27.5 | Slug Type (stainless, PVC, Teflon): PVC |
| Screen Interval (ft. BGL): 17-27 | Slug Length (ft.): 5' |
| Starting WL (ft. BMP): 3.45 | Slug Diameter (ft.): 1.25" |
| Decon. Procedures: Alcomex/DI | Slug Volume (cu. ft.): 0.043 |
| Slug in from Morning | Expected Well Response (+/- ft.): +1.95 |
| Start Time: | End Time: |
| | Performed by: C. Mason |

| Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) |
|---|---|---|---|---|---|---|---|
| 0.25 | 4.65 | 3.5 | 3.49 | 9 | 3.47 | | |
| 0.5 | 4.23 | 3.75 | 3.49 | 10 | 3.47 | | |
| 0.75 | 3.97 | 4 | 3.49 | 11 | 3.47 | | |
| 1 | 3.80 | ~~4.25~~ | | 12 | 3.47 | | |
| 1.25 | 3.70 | 4.5 | 3.48 | | | | |
| 1.5 | 3.63 | ~~4.75~~ | | | | | |
| 1.75 | 3.58 | 5 | 3.48 | | | | |
| 2 | 3.56 | 5.5 | 3.48 | | | | |
| 2.25 | 3.53 | 6 | 3.48 | | | | |
| 2.5 | 3.52 | 6.5 | 3.48 | | | | |
| 2.75 | 3.51 | 7 | 3.48 | | | | |
| 3 | 3.50 | 7.5 | 3.47 | | | | |
| 3.25 | 3.50 | 8 | 3.47 | | | | |

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# SLUG TEST FORM

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, Texas 78664
Phone: (512) 671-3434 Fax: (512) 671-3446

| | |
|---|---|
| Date Tested: 6-4-08 | Well No.: MW-24B |
| Slug IN or OUT: IN | Measuring Point (MP): TOC |
| Well Diameter (in.): 2" | MP Height (ft. above ground level): |
| Well Depth (ft. BGL): 27 | Slug Type (stainless, PVC, Teflon): PVC |
| Screen Interval (ft. BGL): 21.5-26.5 | Slug Length (ft.): 5' |
| Starting WL (ft. BMP): 5.04 | Slug Diameter (ft.): 1.25" |
| Decon. Procedures: Alconox / DI water | Slug Volume (cu. ft.): 0.043 |
| | Expected Well Response (+/- ft.): +1.95 |
| Start Time: | End Time: |
| | Performed by: L. Mason |

| Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) |
|---|---|---|---|---|---|---|---|
| 0.25 | 3.10 | 6 | 4.55 | 12.5 | 5.01 | | |
| 0.5 | 3.20 | 6.5 | 4.61 | 13 | 5.03 | | |
| 0.75 | 3.35 | 7. | 4.66 | 13.5 | 5.04 | | |
| 1 | 3.40 | 7.5 | 4.71 | 14 | 5.06 | | |
| 1.5 | 3.61 | 8 | 4.75 | | | | |
| 2 | 3.78 | 8.5 | 4.79 | | | | |
| 2.5 | 3.91 | 9 | 4.83 | | | | |
| 3 | 4.04 | 9.5 | 4.86 | | | | |
| 3.5 | 4.15 | 10 | 4.89 | | | | |
| 4 | 4.24 | 10.5 | 4.92 | | | | |
| 4.5 | 4.33 | 11 | 4.95 | | | | |
| 5 | 4.41 | 11.5 | 4.97 | | | | |
| 5.5 | 4.48 | 12 | 4.99 | | | | |

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# SLUG TEST FORM

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, Texas 78664
Phone: (512) 671-3434 Fax: (512) 671-3446

| | |
|---|---|
| Date Tested: 6-5-08 | Well No.: MW24B |
| Slug IN or OUT: Out | Measuring Point (MP): |
| Well Diameter (in.): 2" | MP Height (ft. above ground level): |

| | |
|---|---|
| Well Depth (ft. BGL): 27 | Slug Type (stainless, PVC, Teflon): PVC |
| Screen Interval (ft. BGL): 21.5 -26.5 | Slug Length (ft.): 5' |
| Starting WL (ft. BMP): 5.27 | Slug Diameter (ft.): 1.25" |
| Decon. Procedures: Alconox, DI | Slug Volume (cu. ft.): 0.093 |
| Slug in well overnight | Expected Well Response (+/- ft.): ~1.95 |
| Start Time: / End Time: | Performed by: L. Mason |

| Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) |
|---|---|---|---|---|---|---|---|
| 0.25 | 7.38 | 3.5 | 6.80 | 8.5 | 6.22 | 15 | 5.77 |
| 0.5 | 7.32 | 3.75 | 6.77 | 9 | 6.18 | 16 | 5.72 |
| 0.75 | 7.27 | 4 | 6.73 | 9.5 | 6.13 | 17 | 5.58 |
| 1 | 7.22 | 4.25 | 6.70 | 10 | 6.09 | 18 | 5.64 |
| 1.25 | 7.18 | 4.5 | 6.67 | 10.5 | 6.05 | 19 | 5.60 |
| 1.5 | 7.13 | 4.75 | 6.64 | 11 | 6.02 | 20 | 5.57 |
| 1.75 | 7.08 | 5 | 6.60 | 11.5 | 5.98 | 21 | 5.53 |
| 2 | 7.04 | 5.5 | 6.54 | ~~12~~ | | 22 | 5.50 |
| 2.25 | 7.00 | 6 | 6.48 | 12.5 | 5.91 | 23 | 5.48 |
| 2.5 | 6.96 | 6.5 | 6.42 | 13 | 5.88 | 24 | 5.46 |
| 2.75 | 6.92 | 7 | 6.37 | 13.5 | 5.85 | ~~26~~ 25 | 5.44 |
| 3 | 6.88 | 7.5 | 6.32 | 14 | 5.82 | ~~28~~ 26 | 5.42 |
| 3.25 | 6.84 | 8 | 6.27 | 14.5 | 5.80 | ~~30~~ 27 | 5.40 |

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# SLUG TEST FORM

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, Texas 78664
Phone: (512) 671-3434 Fax: (512) 671-3446

| | |
|---|---|
| Date Tested: 6-4-08 | Well No.: OMW27B |
| Slug IN or OUT: IN | Measuring Point (MP): TOC |
| Well Diameter (in.): 2" | MP Height (ft. above ground level): |
| Well Depth (ft. BGL): 27.5' | Slug Type (stainless, PVC, Teflon): Stainless |
| Screen Interval (ft. BGL): 24.5-27' | Slug Length (ft.): 5.1 |
| Starting WL (ft. BMP): 5.13 | Slug Diameter (ft.): 0.11 |
| Decon. Procedures: Alconox, DI | Slug Volume (cu. ft.): 0.048 |
| | Expected Well Response (+/- ft.): +2.25 |
| Start Time: | End Time: |
| | Performed by: L. Mas- |

| Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) |
|---|---|---|---|---|---|---|---|
| 0.25 | 3.02 | 4 | 3.18 | 10.5 | 3.44 | 19 | 3.68 |
| 0.5 | 3.04 | 4.5 | 3.20 | 11 | 3.45 | 20 | 3.70 |
| 0.75 | 3.05 | 5 | 3.22 | 11.5 | 3.47 | 25 | 3.83 |
| 1 | 3.05 | 5.5 | 3.24 | 12 | 3.49 | ~~27~~ 30 | 3.95 |
| 1.25 | 3.06 | 6 | 3.26 | 12.5 | 3.51 | ~~27~~ 35 | 4.05 |
| 1.5 | 3.07 | 6.5 | 3.28 | 13 | 3.52 | ~~30~~ 40 | 4.14 |
| 1.75 | 3.08 | 7 | 3.30 | 13.5 | 3.53 | ~~27~~ 45 | 4.22 |
| 2.0 | 3.09 | 7.5 | 3.32 | 14 | 3.55 | ~~27~~ 50 | 4.30 |
| 2.25 | 3.11 | 8 | 3.34 | 14.5 | 3.56 | ~~27~~ 55 | 4.41 |
| 2.5 | 3.11 | 8.5 | 3.36 | 15 | 3.57 | ~~28~~ 60 | 4.49 |
| 2.75 | 3.12 | 9 | 3.38 | 16 | 3.60 | ~~30~~ 65 | 4.57 |
| 3 | 3.14 | 9.5 | 3.40 | 17 | 3.63 | 70 | 4.63 |
| 3.5 | 3.16 | 10 | 3.42 | 18 | 3.65 | 75 | 4.28 |
| | | | | | | 82 | 4.77 |

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171761

# SLUG TEST FORM

Pastor, Behling & Wheeler, LLC
2201 Double Creek Dr., Suite 4004
Round Rock, Texas 78664
Phone: (512) 671-3434 Fax: (512) 671-3446

| | |
|---|---|
| Date Tested: 6-5-08 | Well No.: OMW27B |
| Slug IN or OUT: OUT | Measuring Point (MP): TOC |
| Well Diameter (in.): 2" | MP Height (ft. above ground level): |
| Well Depth (ft. BGL): ~~27.75~~ 27.5 | Slug Type (stainless, PVC, Teflon): Stainless Steel |
| Screen Interval (ft. BGL): 24.5-27' | Slug Length (ft.): 5.1 |
| Starting WL (ft. BMP): 5.21 | Slug Diameter (ft.): 0.11 |
| Decon. Procedures: Alconox DI water | Slug Volume (cu. ft.): 0.048 |
| Slug in well over night | Expected Well Response (+/- ft.): 2 - 2.25 |
| Start Time: | End Time: |
| | Performed by: L. Mcson |

| Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) | Minutes Since Start | Water Level (ft. BMP) |
|---|---|---|---|---|---|---|---|
| 0.25 | | 6 | 7.20 | 15 | 6.89 | 53 | 6.06 |
| 0.5 | 7.41 | 6.5 | 7.18 | 17.5 | 6.81 | 55 | 6.04 |
| 0.75 | 7.40 | 7 | — | 20 | 6.74 | 57.5 | 5.99 |
| 1 | 7.39 | 7.5 | — | 22.5 | 6.68 | 60. | 5.96 |
| 1.5 | 7.37 | 8 | 7.12 | 25 | 6.61 | 65 | 5.89 |
| 2 | 7.35 | 8.5 | 7.10 | 27.5 | 6.55 | 70 | 5.84 |
| 2.5 | 7.32 | 9 | 7.08 | 30 | 6.49 | 80 | 5.74 |
| 3 | 7.31 | 9.5 | 7.07 | 38 | 6.32 | 90 | 5.65 |
| 3.5 | 7.29 | 10 | 7.05 | 46 | 6.27 | | |
| 4 | 7.27 | 11 | 7.02 | 43.5 | 6.21 | | |
| 4.5 | 7.25 | 12 | 6.98 | 45 | 6.16 | | |
| 5 | 7.23 | 13 | 6.95 | 48 | 6.12 | | |
| 5.5 | 7.21 | 14 | 6.93 | 50 | 6.11 | | |