

## **APPENDIX E.4 – Slug Test Data - No Change for Rev. 4**

Prepared by/Date: DA 3/5/14  
 Checked by/Date: PSA 3/6/14

Table E.4.1  
 SUMMARY OF SLUG TESTING  
 CLINCH RIVER SMR PROJECT  
 AMEC PROJECT NO. 6468-13-1072

WELL ID	SLUG TYPE	SOLID SLUG ID/ VOLUME, cu. ft. (1)	COMMENTS
OW-101D	Pneumatic	N/A	Initial rising head and falling head tests were rejected. The Rising/Falling Head tests were re-run as Rising/Falling Head Test 2. Files from initial test not plotted or included
OW-101L	Pneumatic	N/A	
OW-101U	Pneumatic	N/A	
OW-202D	Solid	SS-2/0.048	A pneumatic test was attempted, but the well was not holding pressure. The test method was changed to the solid slug method.
OW-202L	Solid	SS-1/0.051	A pneumatic test was attempted, but the well was not holding pressure. The test method was changed to the solid slug method.
OW-202U	N/A	N/A	Test not run due to low water level
OW-401D	Solid	SS-1/0.051	A pneumatic test was attempted, but the well exhibited very slow recovery. The test method was changed to the solid slug method.
OW-401L	Pneumatic	N/A	
OW-401U	Pneumatic	N/A	
OW-409L	Pneumatic	N/A	
OW-409U	Solid	SS-1/0.051	The water level was within the screened interval. The test method was assigned as a solid slug method.
OW-415L	Pneumatic	N/A	
OW-415U	Solid	SS-1/0.051	The water level was within the screened interval. The test method was assigned as a solid slug method.
OW-416L	Pneumatic	N/A	
OW-416U	Pneumatic	N/A	
OW-417L	Pneumatic	N/A	
OW-417U	Pneumatic	N/A	
OW-418L	Pneumatic	N/A	
OW-418U	Pneumatic	N/A	
OW-419L	Pneumatic	N/A	Initial rising head test rejected and re-run as Rising Head Test 2. Files from initial test not included or plotted.
OW-419U	Pneumatic	N/A	Initial rising head test rejected and re-run as Rising Head Test 2. Files from initial test not included or plotted.
OW-420L	Solid	SS-1/0.051	The well would not hold a vacuum; the test method was changed to the solid slug method, and the transducer was lowered to accommodate the solid slug.
OW-420U	N/A	N/A	Test not run due to low water level
OW-421D	Solid	SS-2/0.048	Test assigned as solid slug method
OW-421L	Solid	SS-1/0.051	Test assigned as solid slug method
OW-421U	Solid	SS-2/0.048	Test assigned as solid slug method
OW-423D	Pneumatic	N/A	
OW-423L	Solid	SS-1/0.051	A pneumatic test was attempted, but the well was not holding pressure. The test method was changed to the solid slug method.
OW-423U	Pneumatic	N/A	
OW-428D	N/A	N/A	Test not run due to variable water conditions
OW-428L	Solid	SS-2/0.048	Test assigned as solid slug method
OW-428U	Solid	SS-1/0.051	The water level was within the screened interval. The test method was assigned as a solid slug method.
OW-429L	N/A	N/A	Test not run due to low water level
OW-429U	Solid	SS-1/0.051	Test assigned as solid slug method

(1) Solid slug volume calculated from measured diameter and length

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-101U**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/15/2013; 9/16/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 101UBR 2013-09-15 10-52.44 (contains background and pressurization/equalization data for rising head test)
- 101UR 2013-09-15 10.49.20 (contains test data for rising head test)
- 101UBF 2013-09-16 10.43.51 (contains background and vacuum/equalization data for falling head test)
- 101UF 2013-09-16 14.04.03 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 20.84 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KHL 1/10/14

Checked by/Date: JS 1/10/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-101U

Date of Observation Well Installation: 7/31/13

Date of Well Development: 8/20/13

Observation Well Northing: 570235.5 US ft Easting: 2448339.3 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed approximately 5.0 and 25.0 feet below ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/7/13 through 8/20/13.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

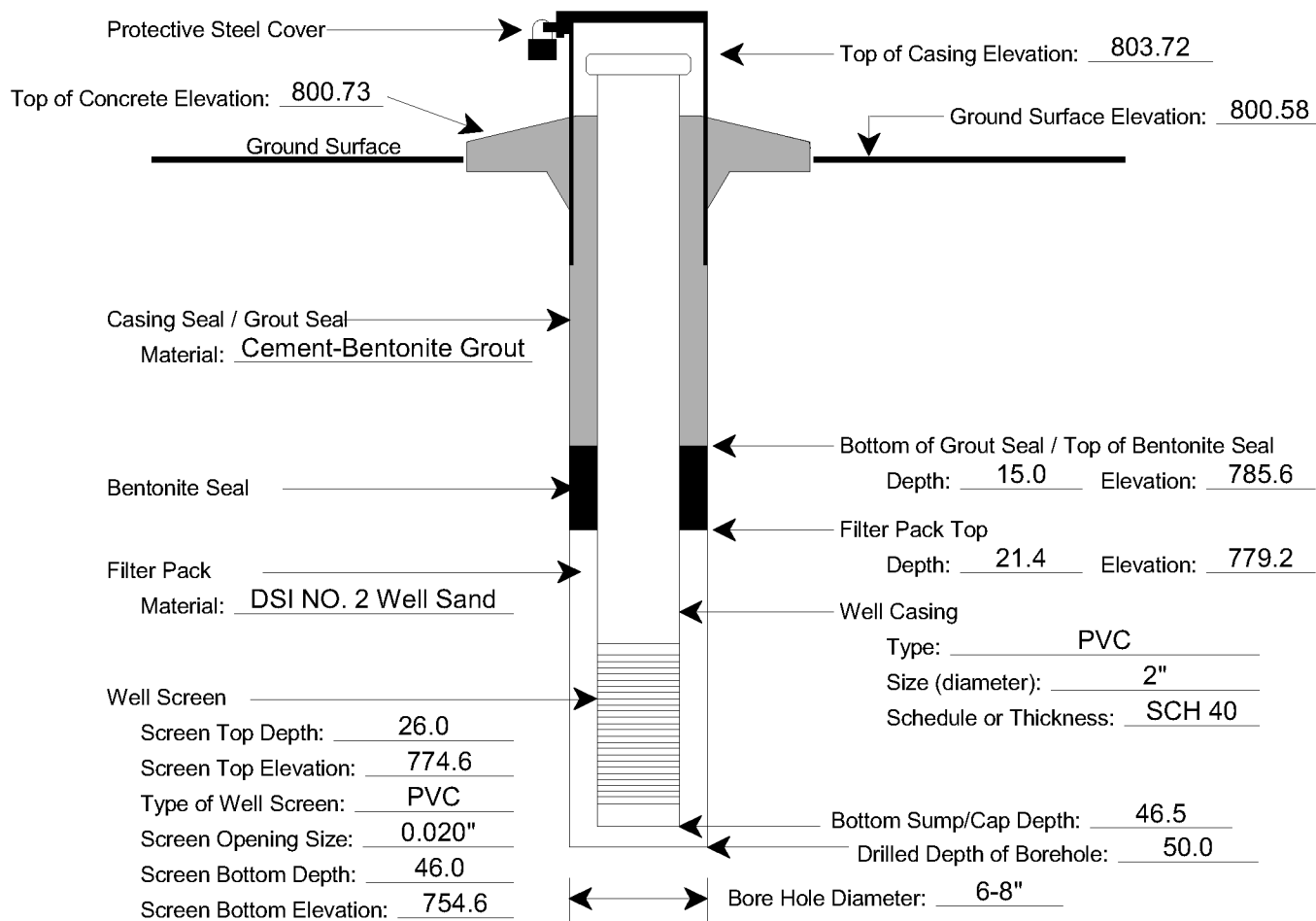
AMEC Inspector Supervising Well Installation: M. Lear

Static Water Level Elevation (NAVD88) collected December 9, 2013: 798.42

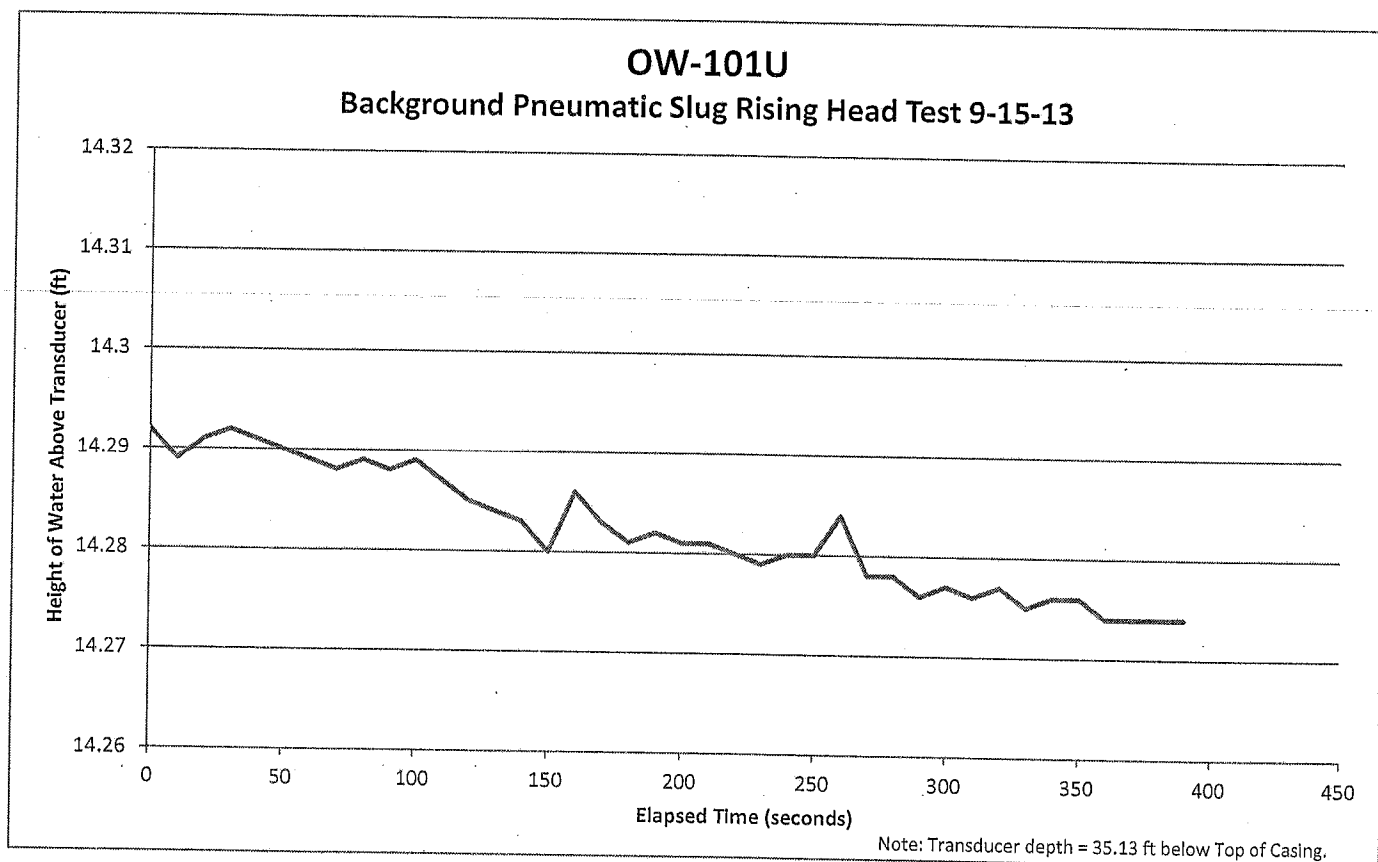
Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE

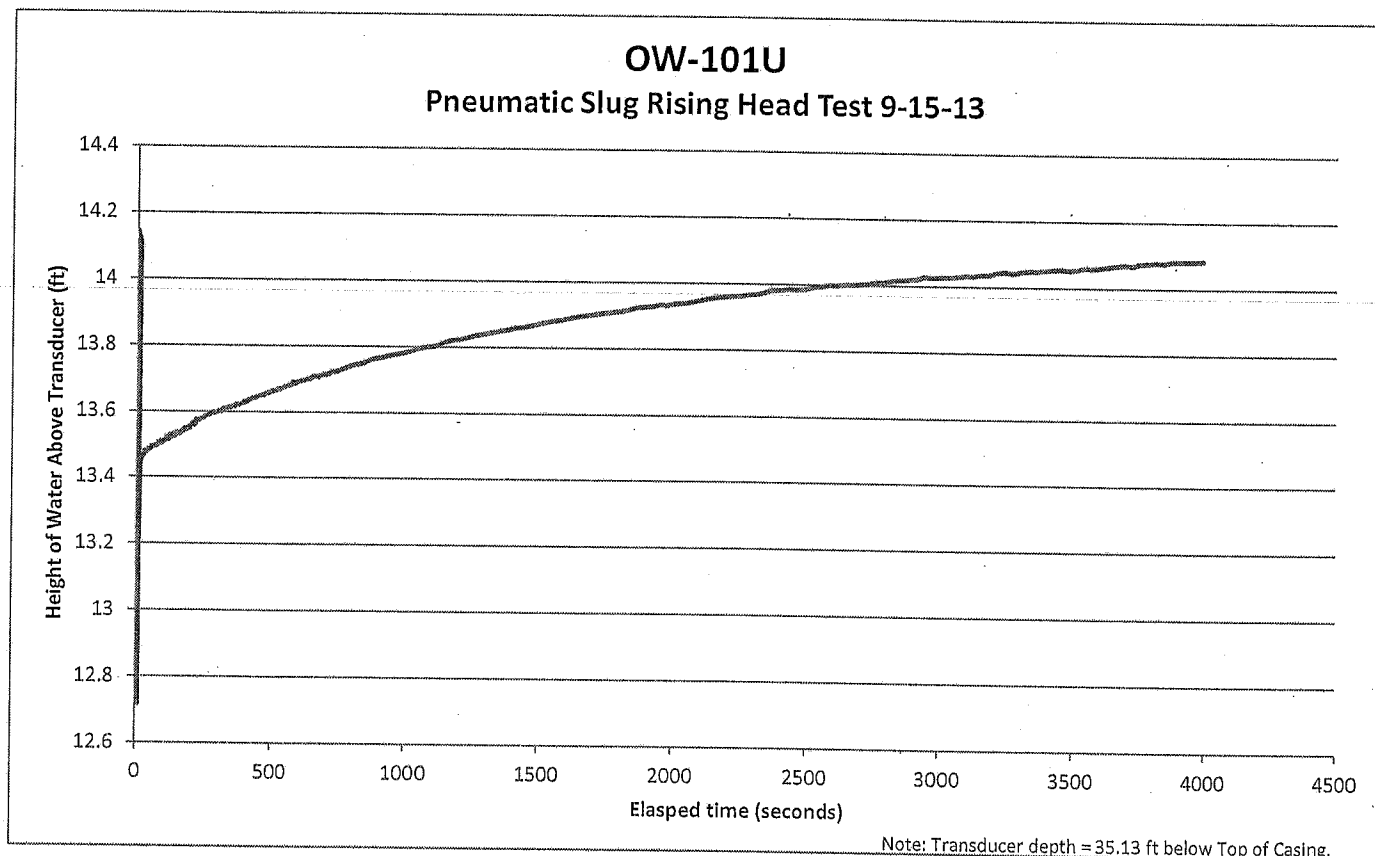






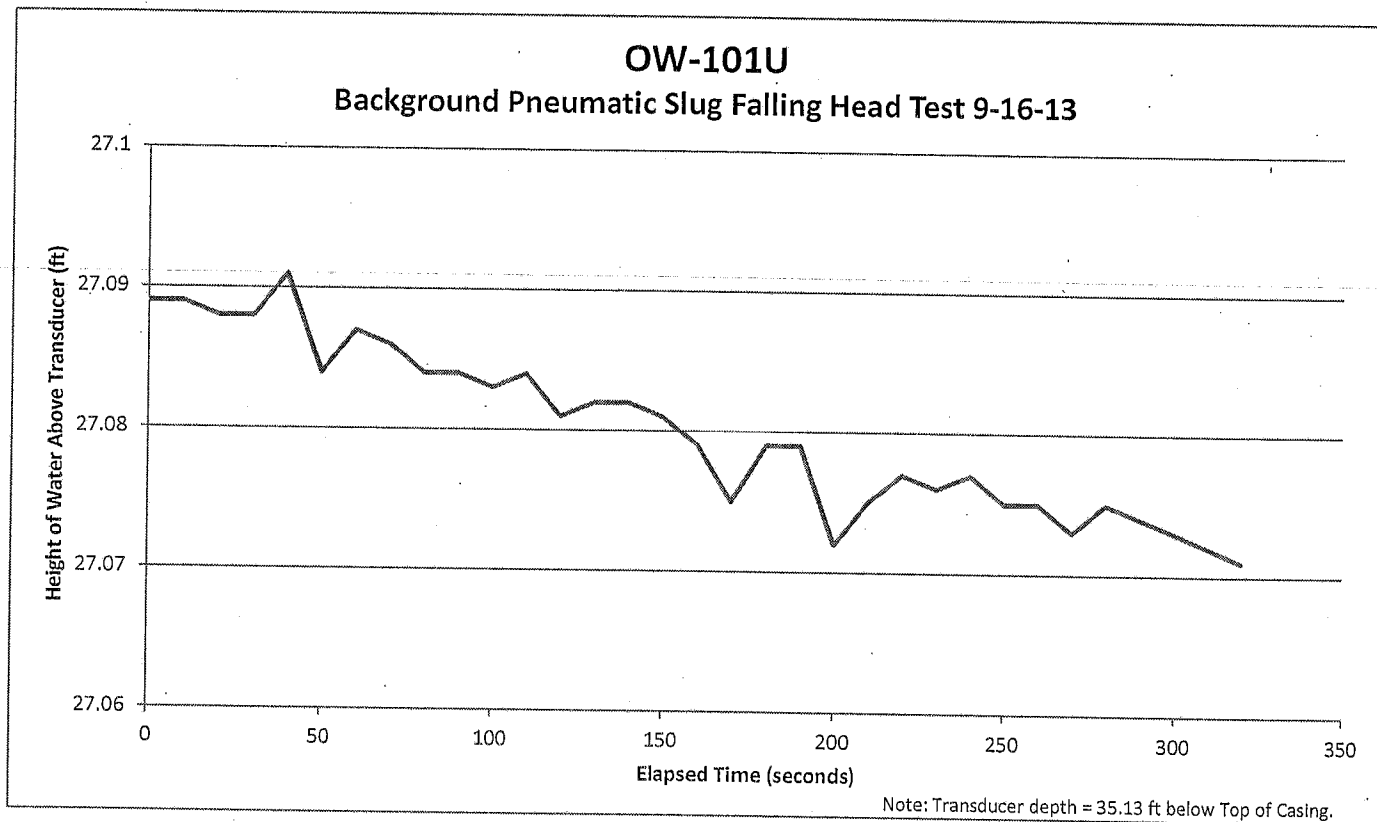
Prepared by/Date: KAC 1/10/14

Checked by/Date: JG 1/11/14



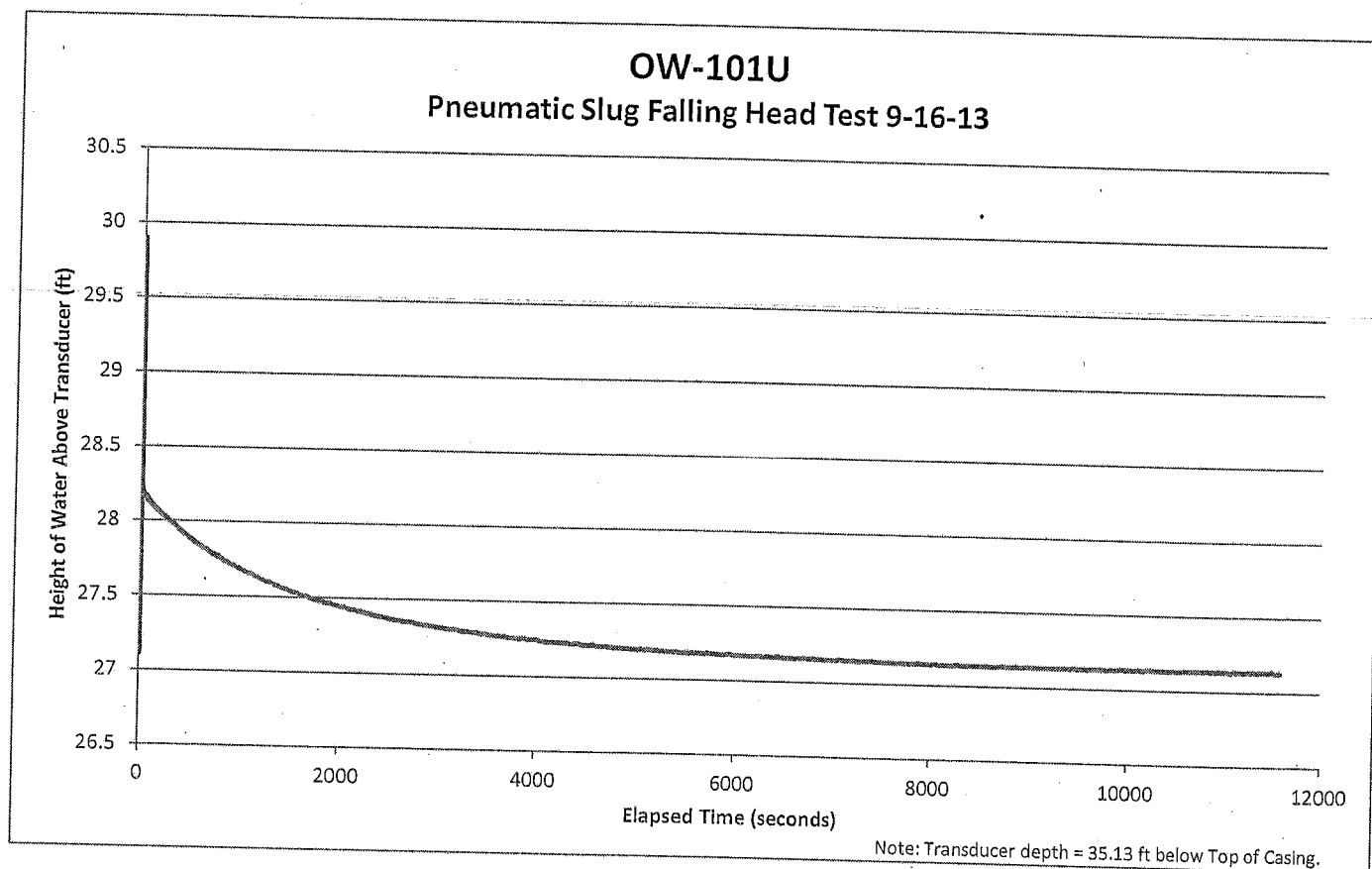
Prepared by/Date: RM 1/10/14

Checked by/Date: JS 1/10/14



Prepared by/Date: KAC 1/10/14

Checked by/Date: JAS 1/11/14



Prepared by/Date: KAC 1/10/14

Checked by/Date: JDS 1/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-101L**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/14/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test No. 1
- Rising head test No. 2
- Background water level for falling head test
- Falling head test No. 1
- Falling head test No. 2

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 101LBR 2013-09-14 18.48.15 (contains background and pressurization/equalization data for rising head tests)
- 101LR 2013-09-14 18.49.18 (contains test data for rising head test No. 1)
- 101LR2 2013-09-14 18.50.39 (contains test data for rising head test No. 2)
- 101LBF 2013-09-14 18.49.34 (contains background and vacuum/equalization data for falling head tests)
- 101LF 2013-09-14 18.49.58 (contains test data for falling head test No. 1)
- 101LF2 2013-09-14 18.50.19 (contains test data for falling head test No. 2)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 44.09 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAL 1/16/14

Checked by/Date: GCJ 1/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-101L

Date of Observation Well Installation: 7/31/13

Date of Well Development: 8/7/13

Observation Well Northing: 570262.0 US ft Easting: 2448370.8 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/6/2013 through 8/7/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

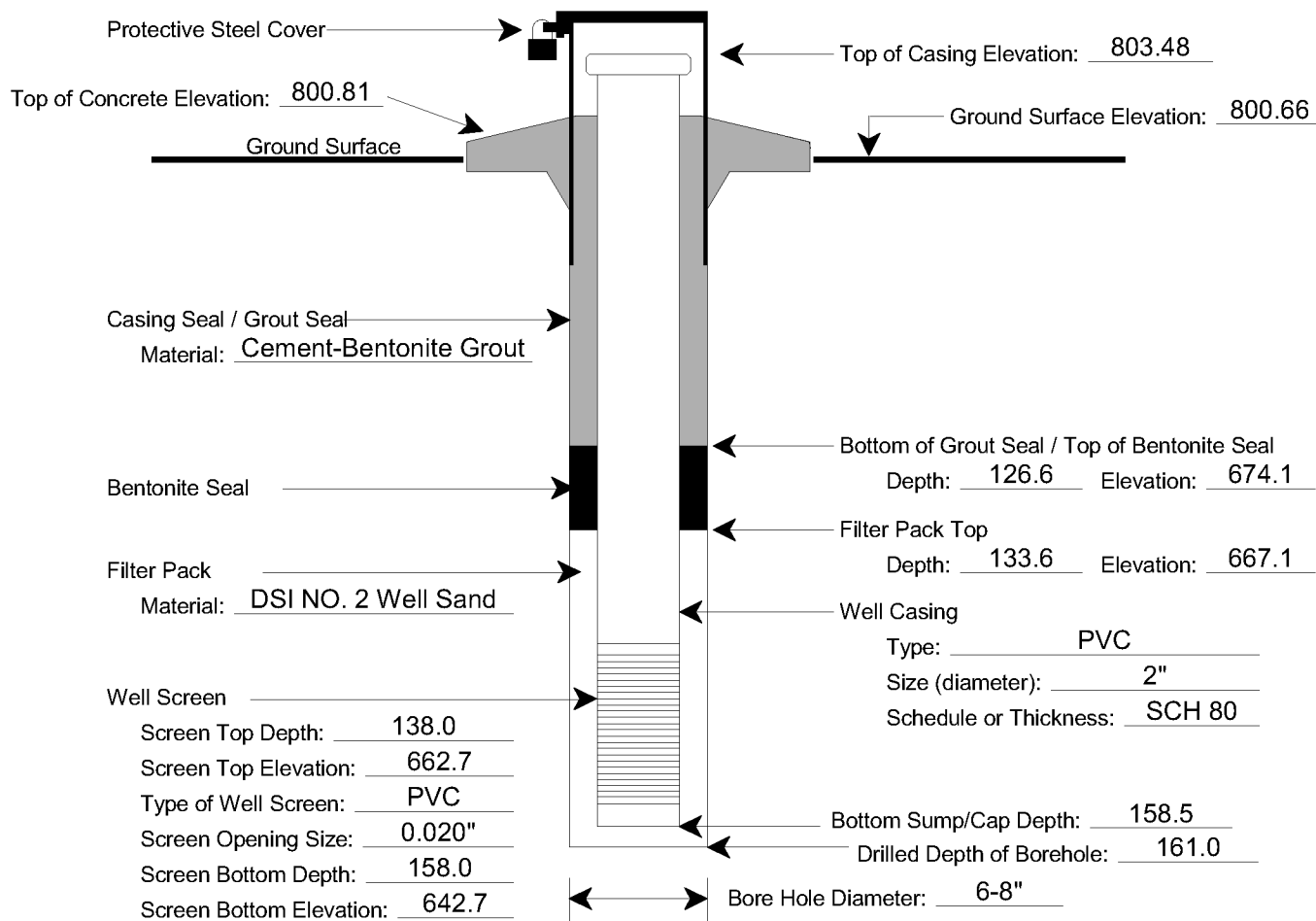
AMEC Inspector Supervising Well Installation: M. Lear

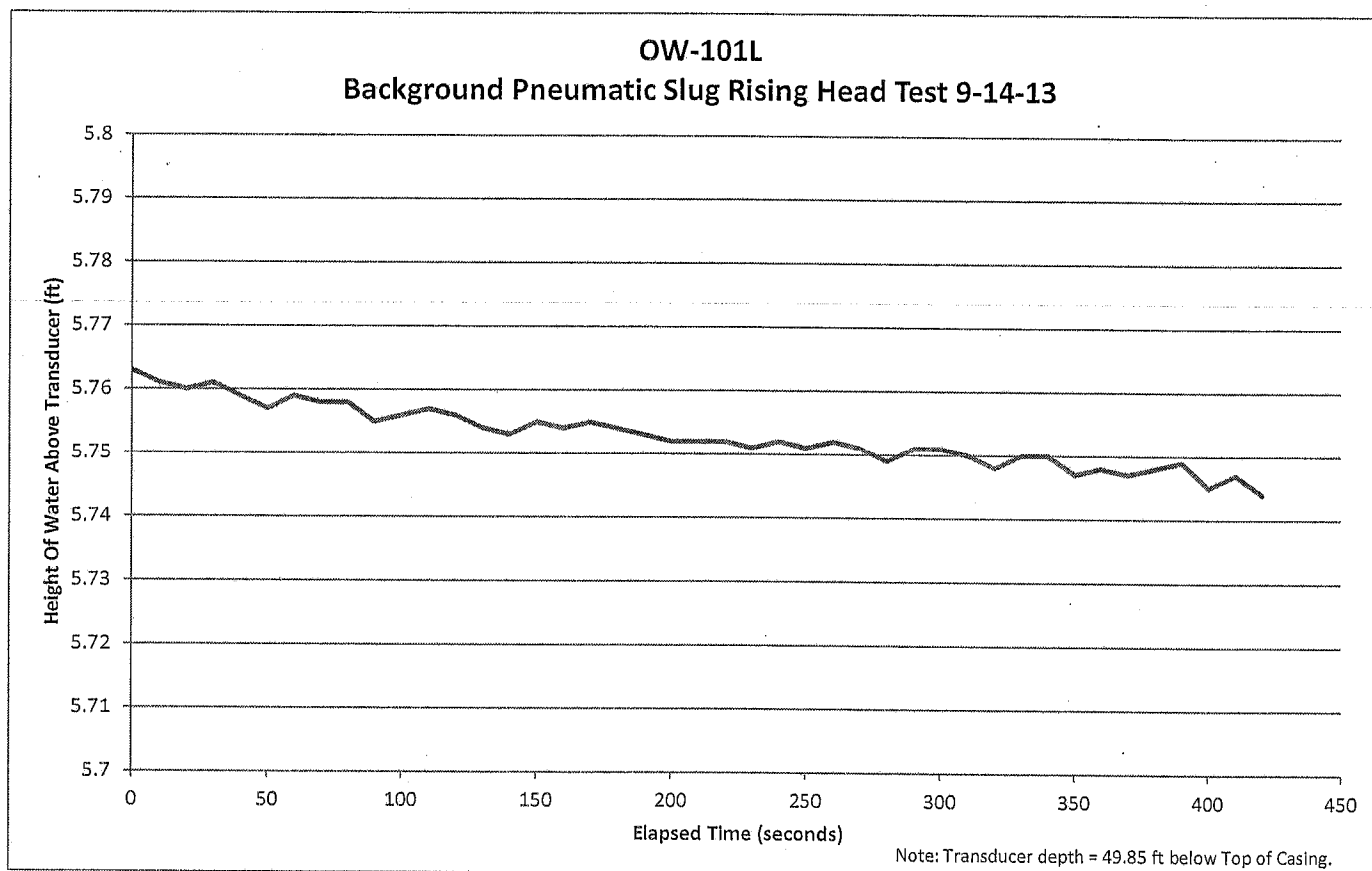
Static Water Level Elevation (NAVD88) collected December 9, 2013: 773.47

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

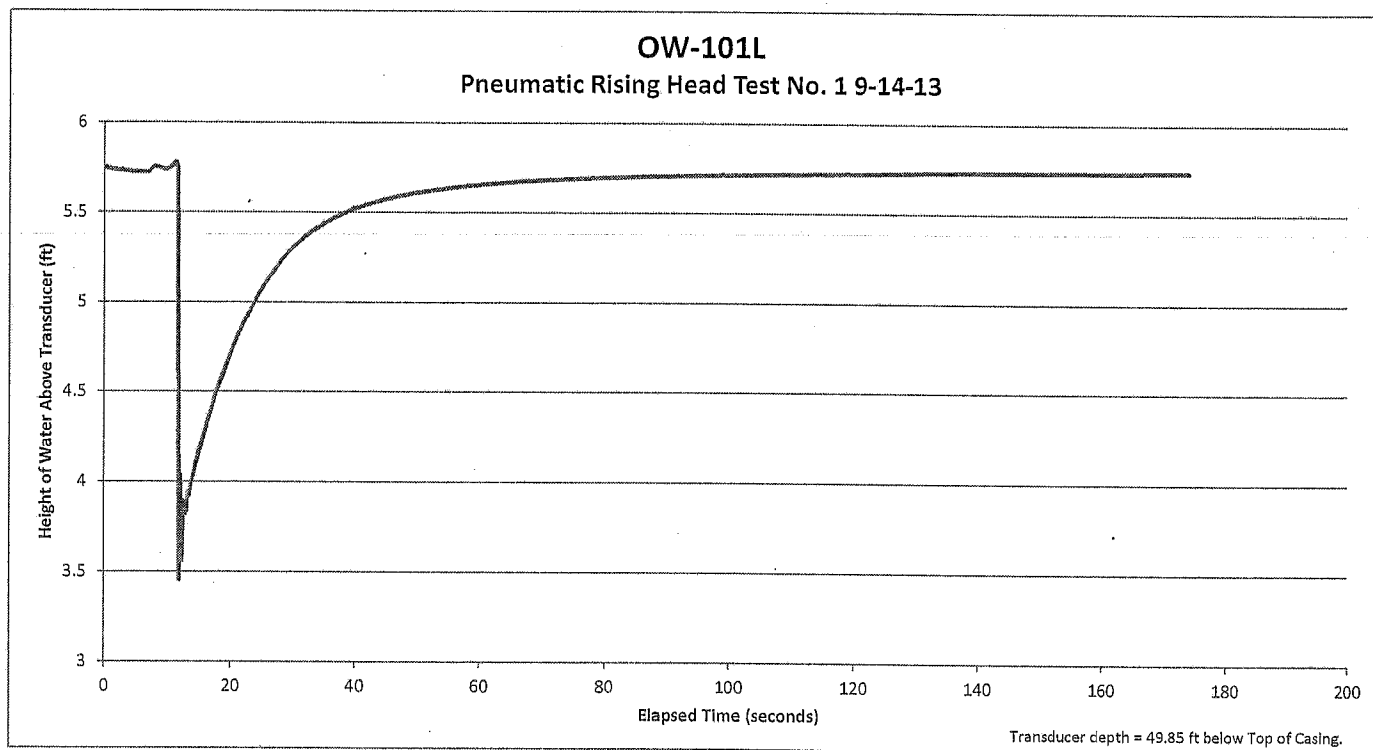
DIAGRAM NOT TO SCALE





Prepared by/Date: KHL 1/10/14

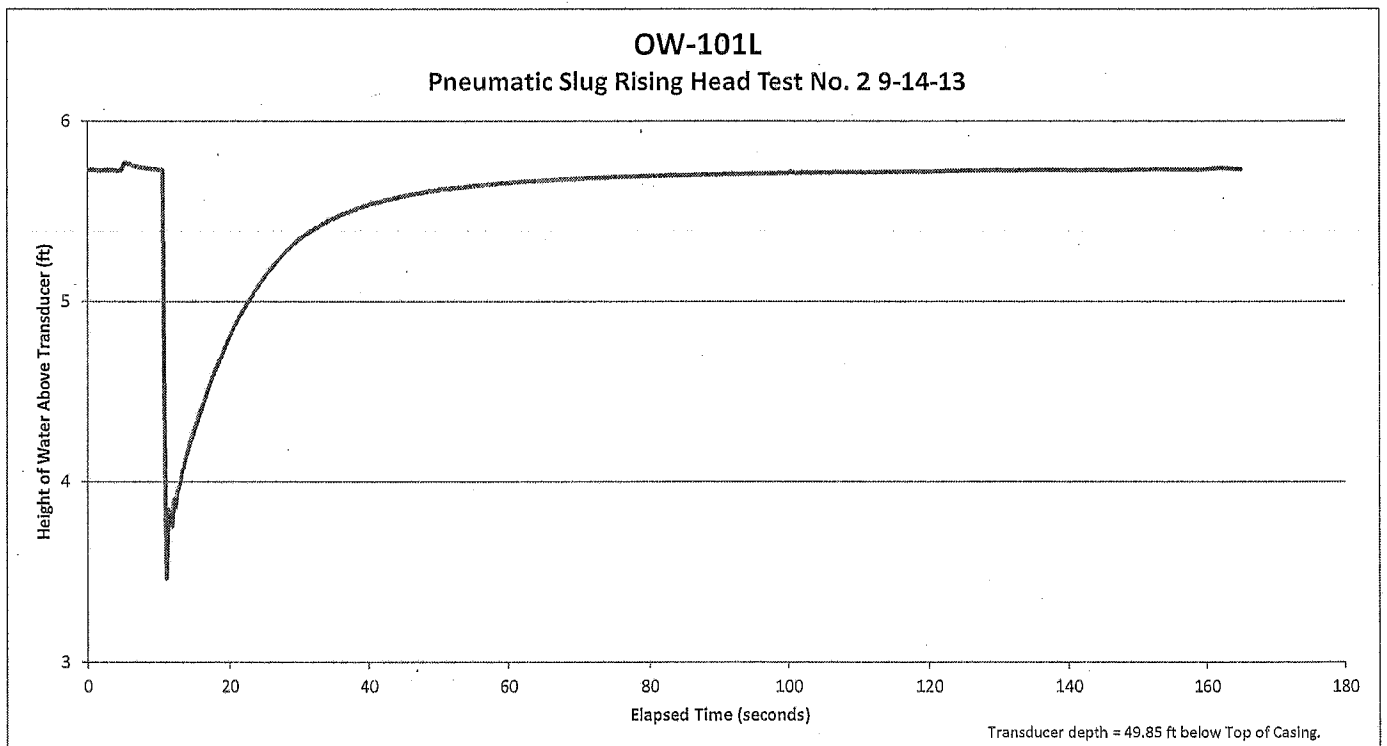
Checked by/Date: JAS 1/11/14



Prepared by/Date: KAL 1/10/14

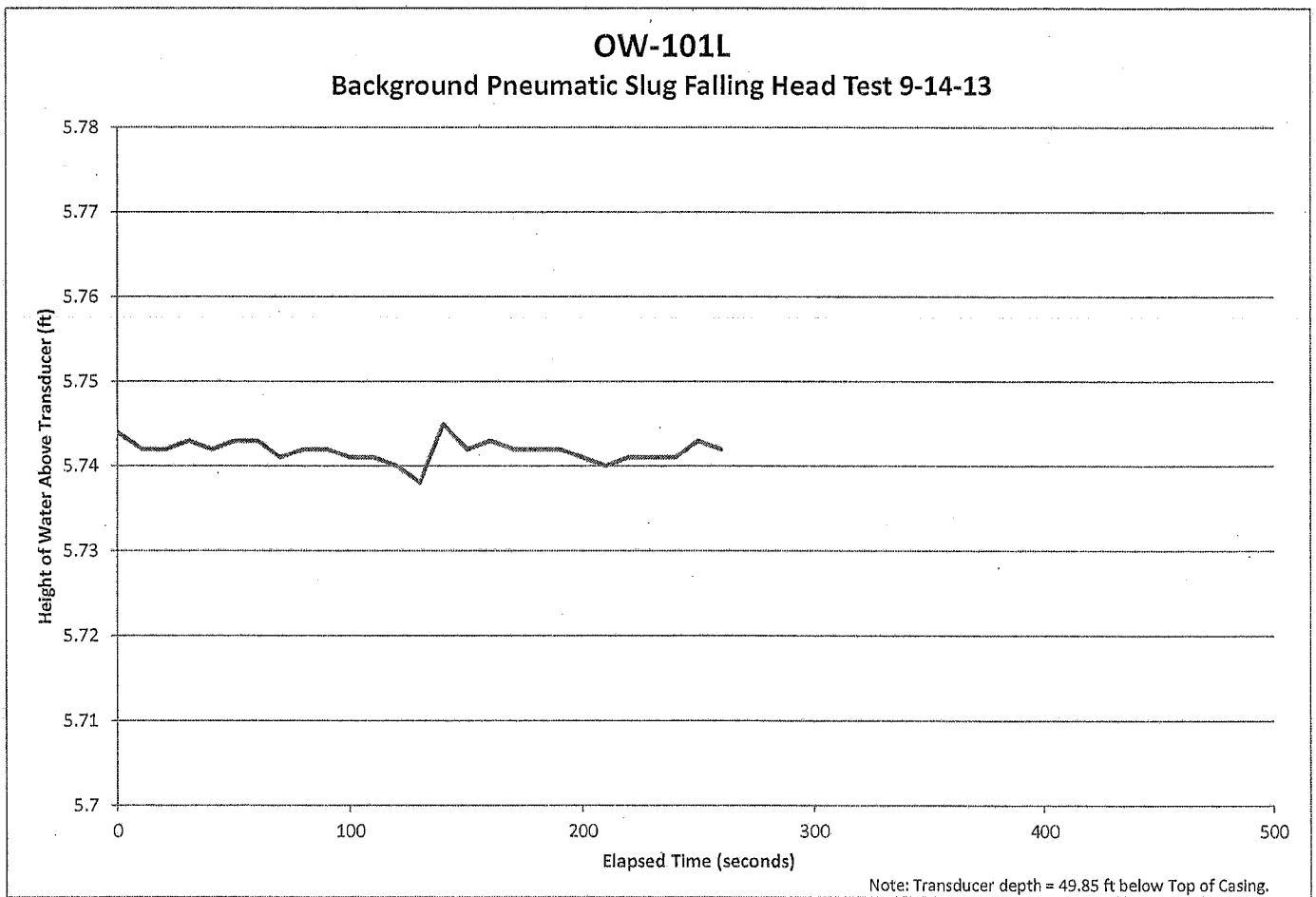
Checked by/Date: JG 1/10/14





Prepared by/Date: KML 1/10/14

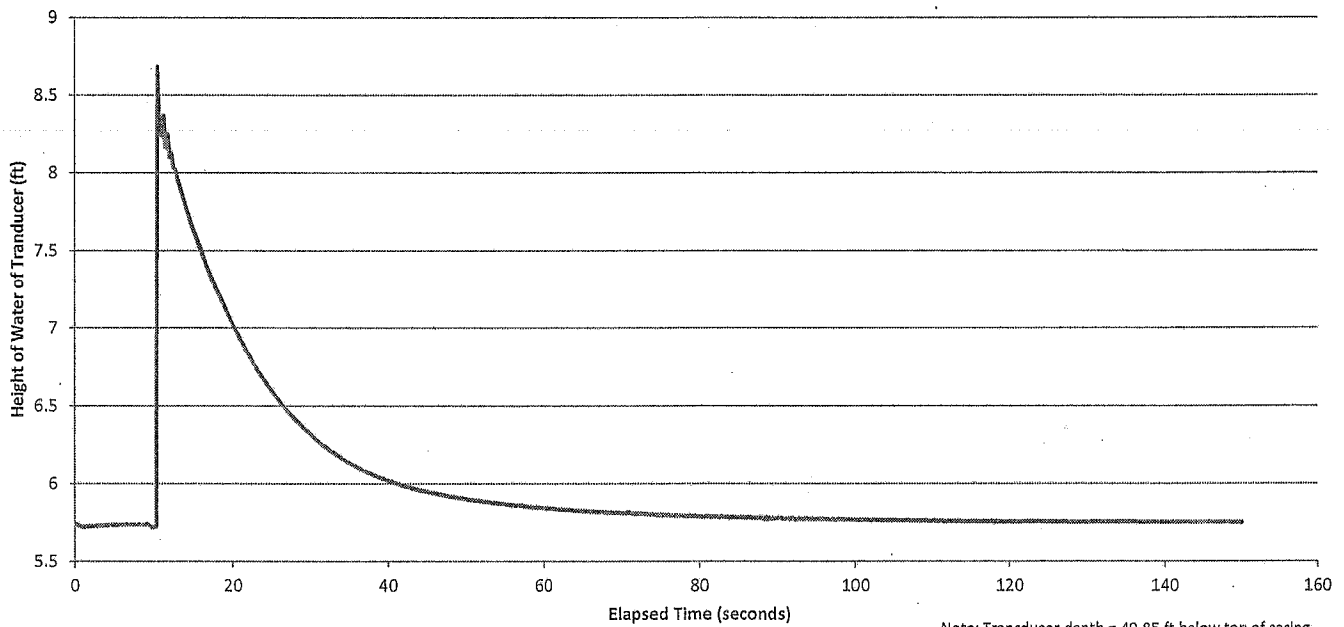
Checked by/Date: JLO 7/1/14



Prepared by/Date: KAL 1/10/14

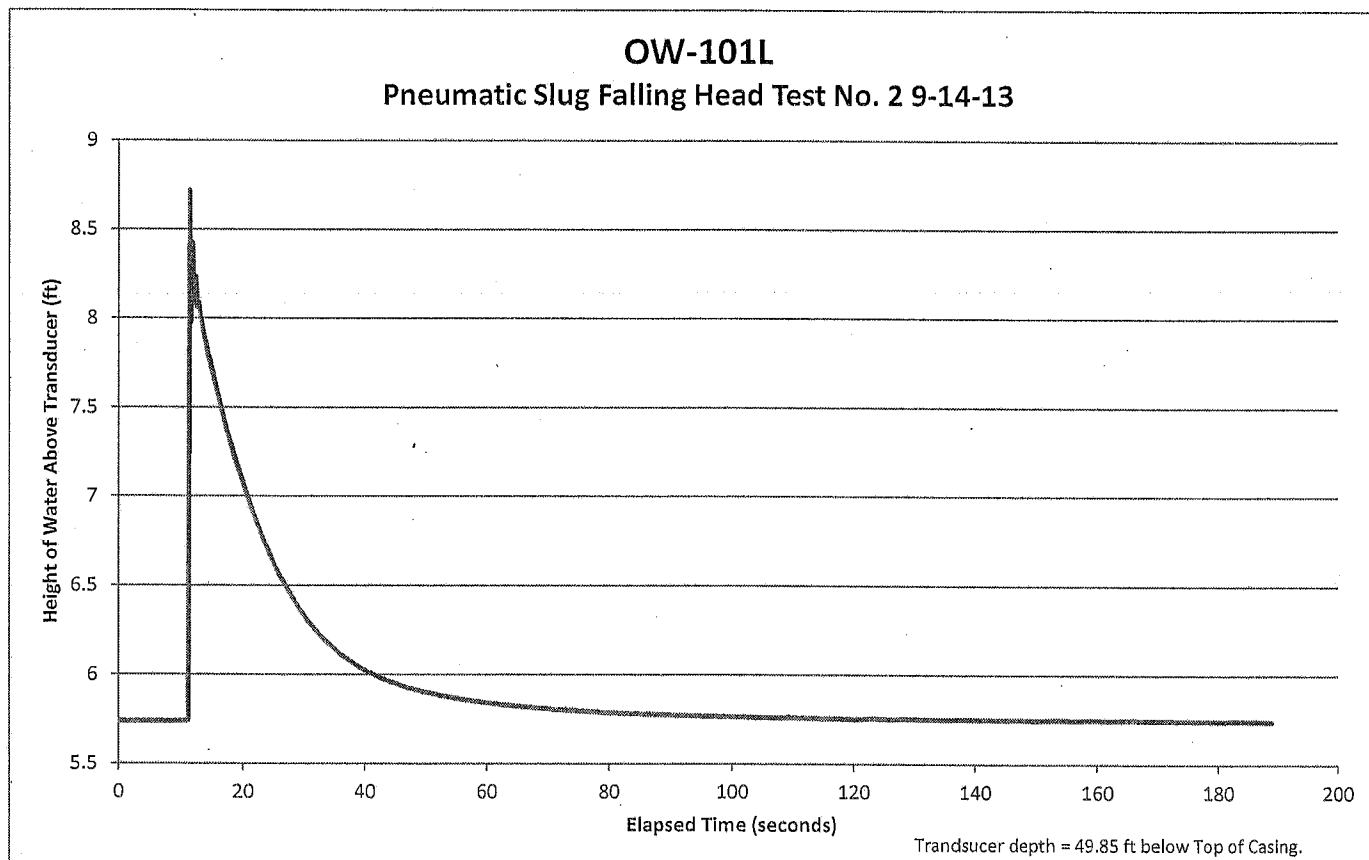
Checked by/Date: JS 1/10/14

OW-101L  
Pneumatic Falling Head Test No. 1 9-14-13



Prepared by/Date: KAL 1/10/14

Checked by/Date: JJ 1/6/14



Prepared by/Date: KWC 1/10/14

Checked by/Date: [Signature] 1/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-101D**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/29/2013; 9/30/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 101DBR 2013-09-29 14.58.49 (contains background and pressurization/equalization data for rising head test)
- 101DR 2013-09-29 16.49.19 (contains test data for rising head test)
- 101DBF 2013-09-30 11.22.17 (contains background and vacuum/equalization data for falling head test)
- 101DF 2013-09-30 12.22.58 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 60.74 ft
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KBL 1/10/14  
Checked by/Date: JS 1/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-101D

Date of Observation Well Installation: 7/30/13

Date of Well Development: 9/4/13

Observation Well Northing: 570274.9 US ft Easting: 2448386.4 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/2/2013 through 9/4/13.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

Well borehole over-drilled per SDDR CRP-19.

Over-drilled portion of borehole filled with DSI No. 2 Well Sand prior to well installation per SDDR CRP-19.

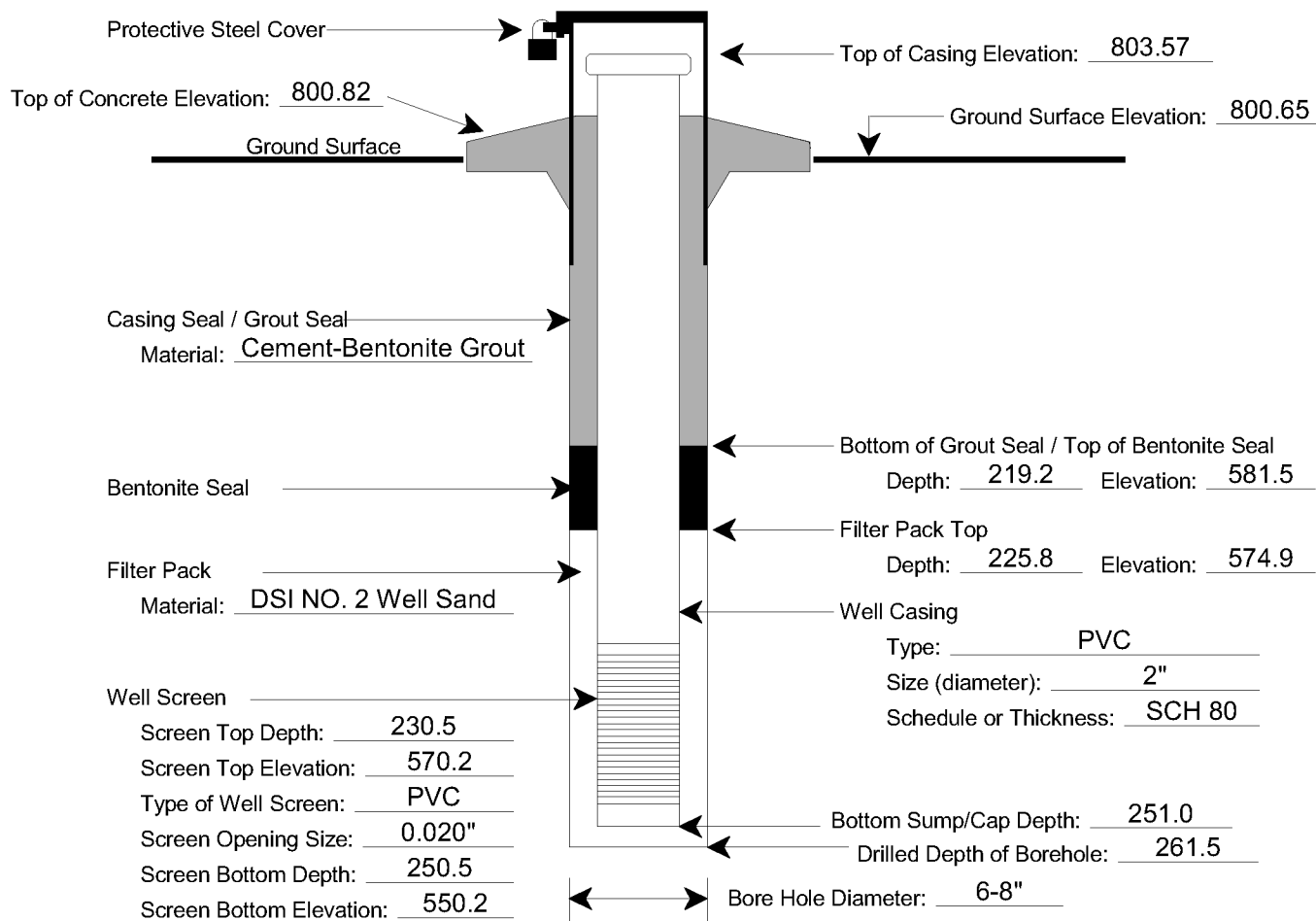
AMEC Inspector Supervising Well Installation: M. Lear

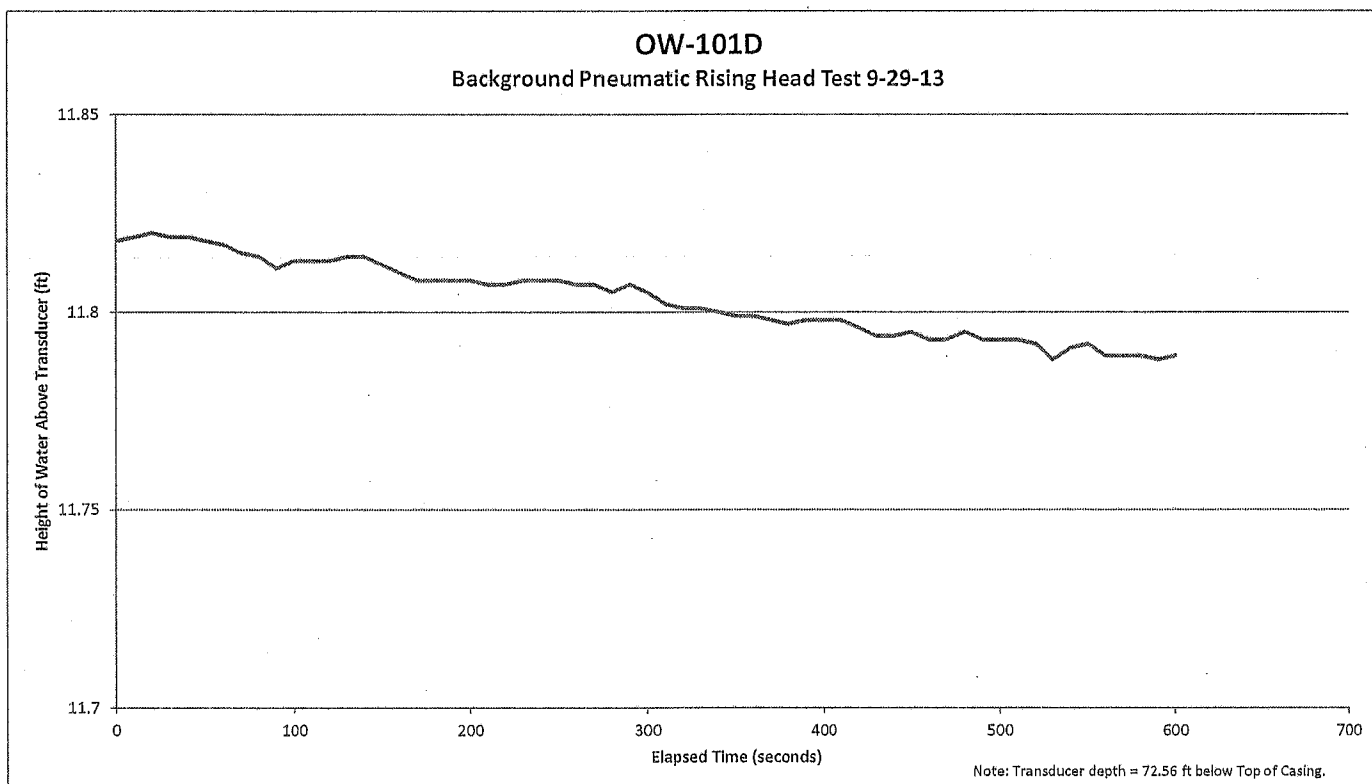
Static Water Level Elevation (NAVD88) collected December 9, 2013: 749.39

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

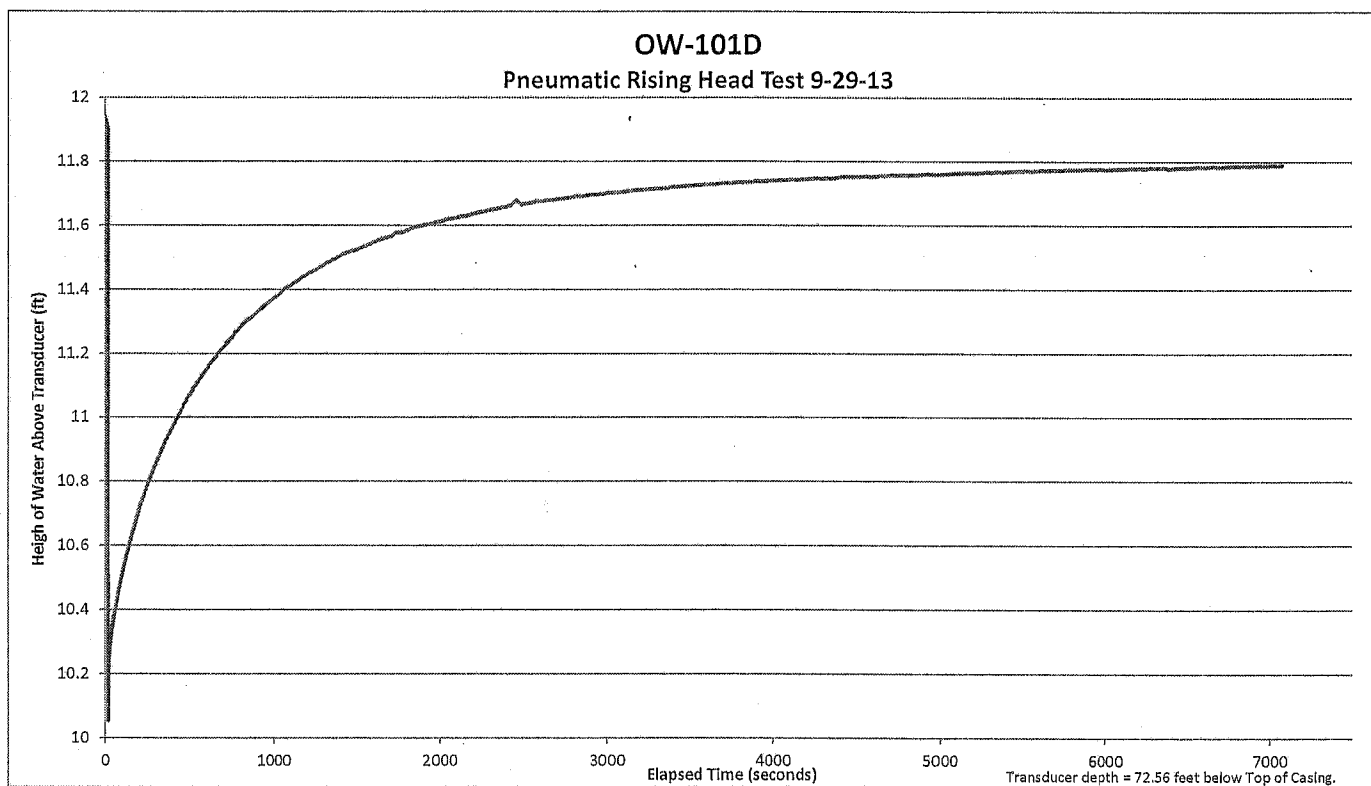
DIAGRAM NOT TO SCALE





Prepared by/Date: KAL 1/10/14

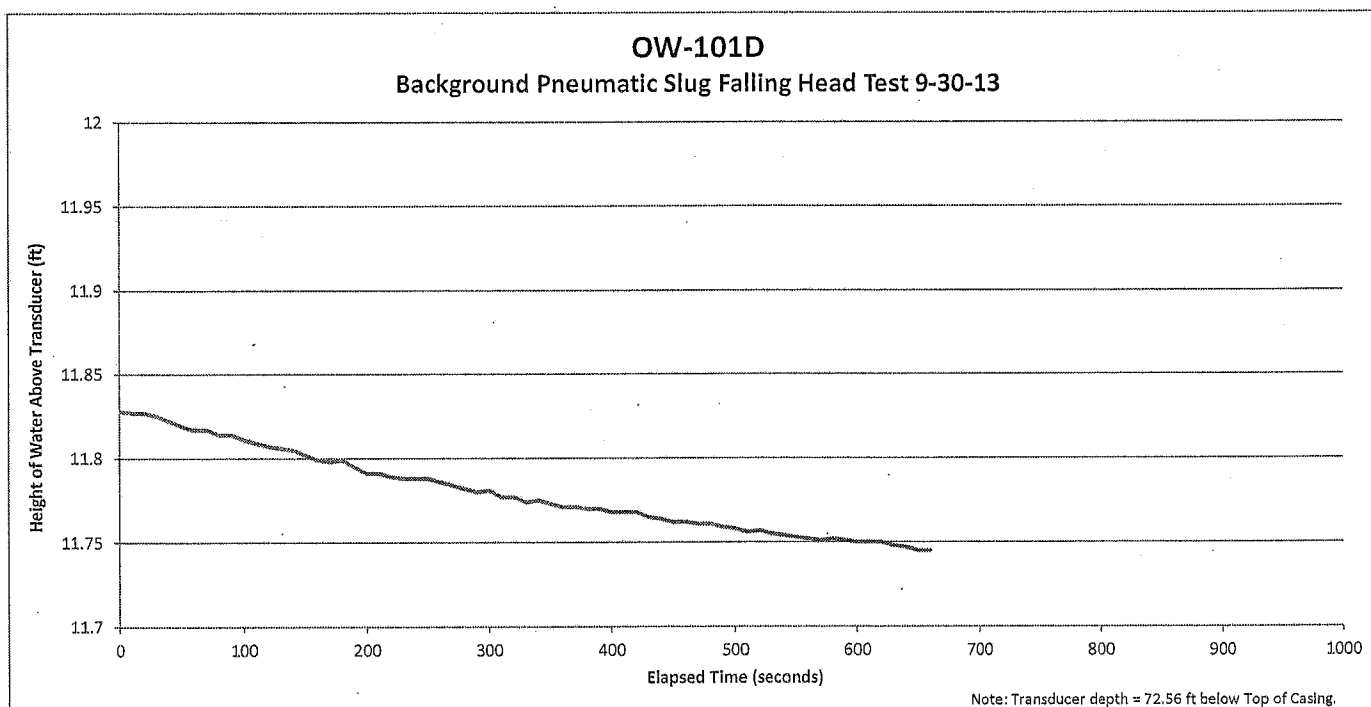
Checked by/Date: JGJ 1/11/14



Prepared by/Date: km 1/10/14

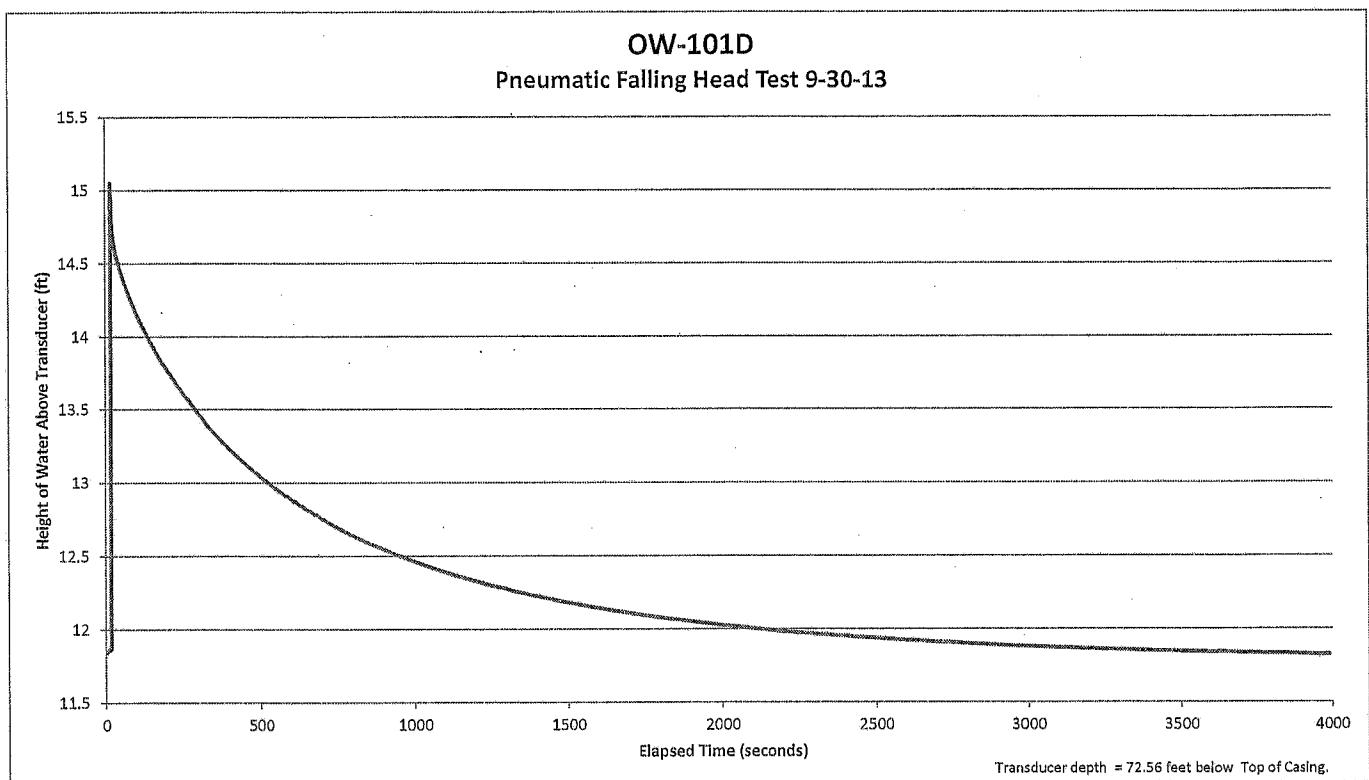
Checked by/Date: JW 1/10/14





Prepared by/Date: KAC 1/10/14

Checked by/Date: JV 1/14



Prepared by/Date: KHL 1/10/14

Checked by/Date: JL 1/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-202L**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Solid**

**Test Dates: 9/29/2013; 9/30/2013; 10/2/2013**

Well Construction Diagram

Plots:

- Background water level for solid slug falling head test (see note 1 below)
- Falling head test
- Background water level for rising head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 202LBF 2013-09-29 17.00.37 (contains background data for falling head test)
- 202LF 2013-09-30 07.57.06 (contains test data for falling head test)
- 202LBR 2013-09-30 08.41.00 (contains background data for rising head test)
- 202LR 2013-10-2 07.29.44 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background" file prior to initiating a test. For this test, an unexplained increase in water level between ending the background check and starting the falling head test occurred. The data for the background file is considered questionable. AMEC recommends using the portion of the falling head test file immediately prior to the slug insertion to obtain the reference head for the test analysis.
2. Static water level (below top of casing) prior to testing = 48.21 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.
5. A pneumatic test was attempted, but the well was not holding pressure. The test method was changed to the solid slug method.

Prepared by/Date: AD 4/9/14  
Checked by/Date: CDT 4/9/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-202L

Date of Observation Well Installation: 8/20/13

Date of Well Development: 9/15/13

Observation Well Northing: 570934.2 US ft Easting: 2448064.9 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/14/2013 through 9/15/2013.

Seep holes drilled into protective steel stick up upon completion of well installation.

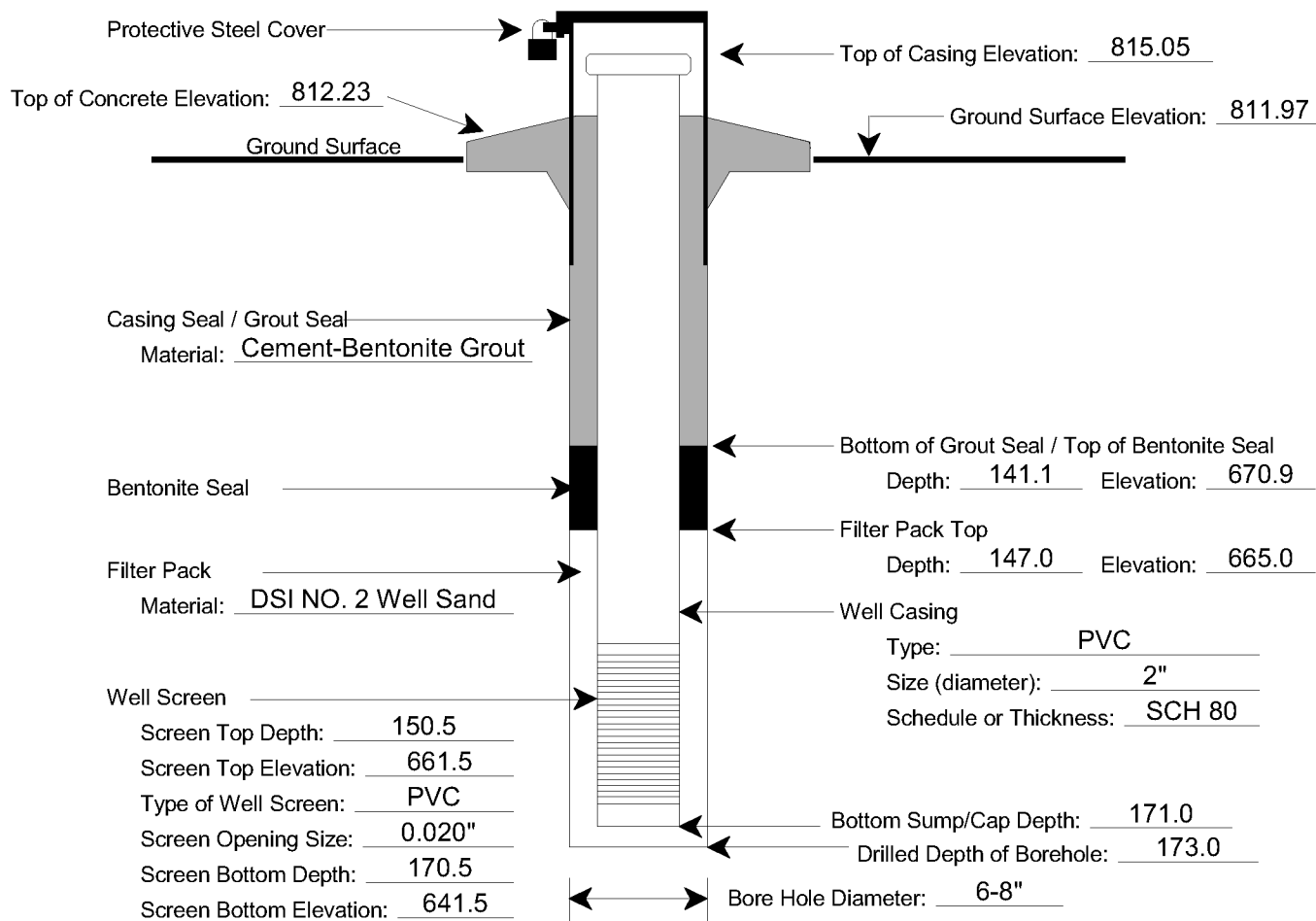
AMEC Inspector Supervising Well Installation: J. Goddard

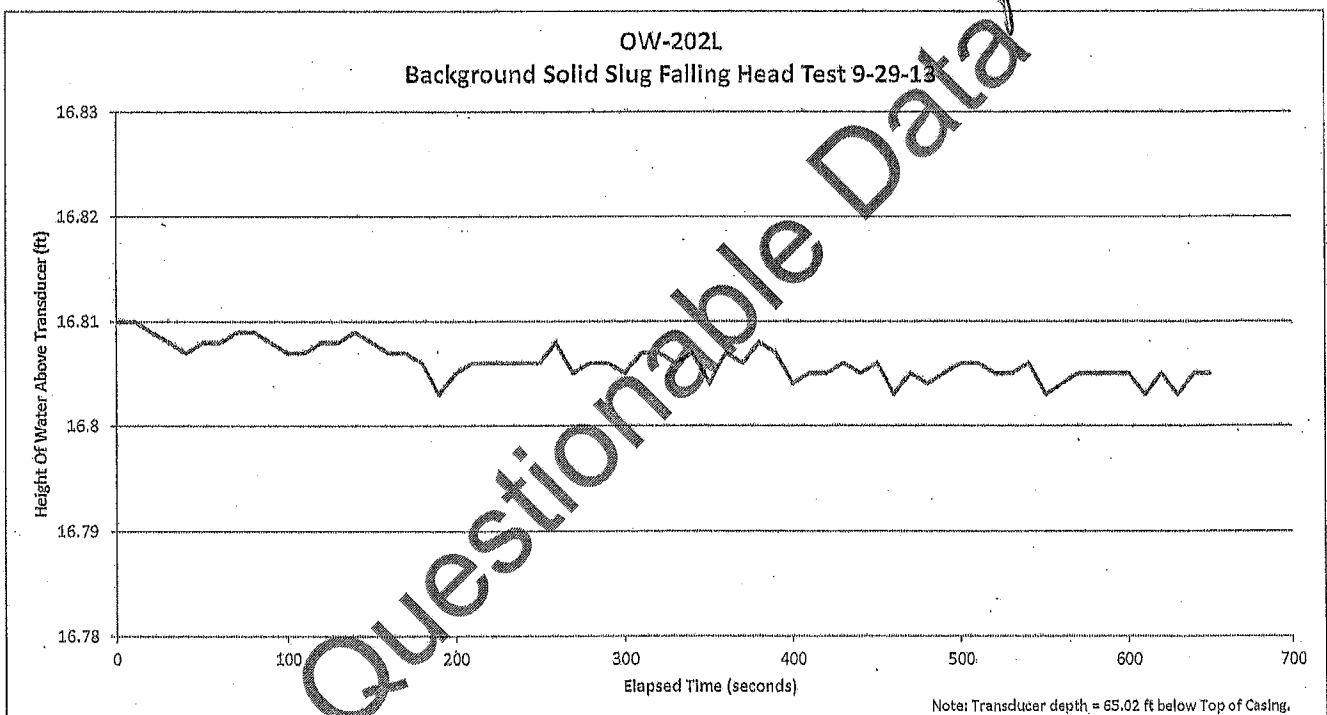
Static Water Level Elevation (NAVD88) collected December 9, 2013: 778.27

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE

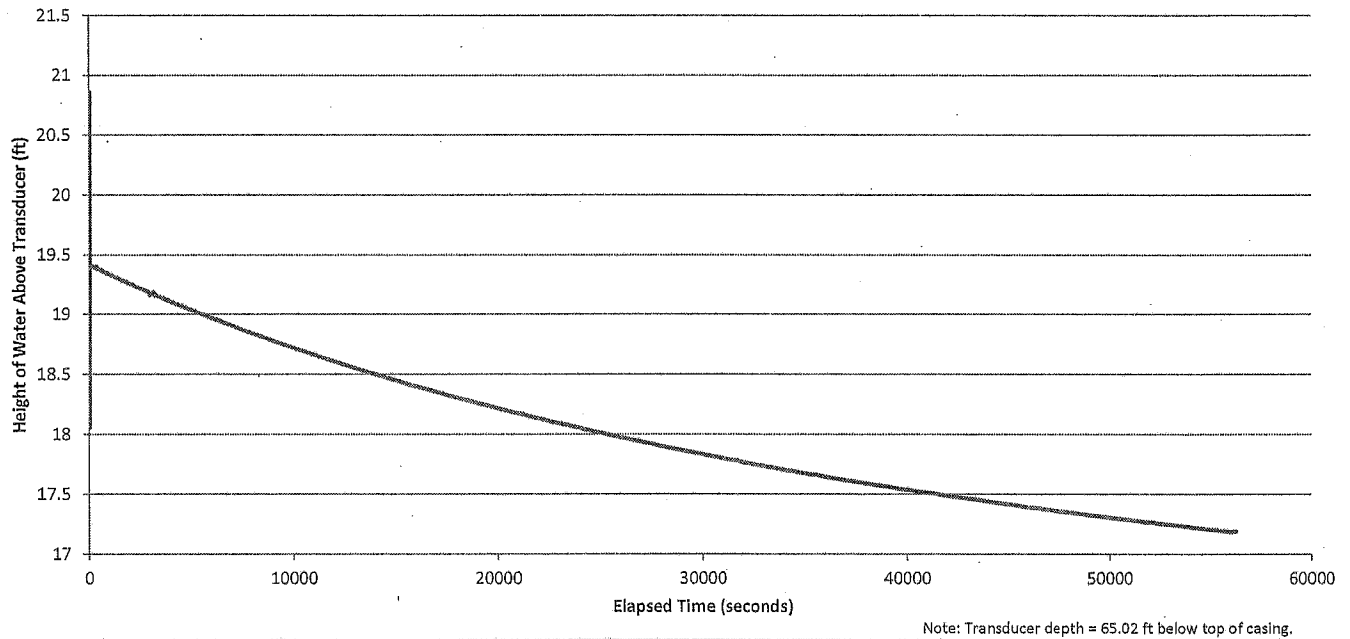




Prepared by/Date: K.M. 1/10/14

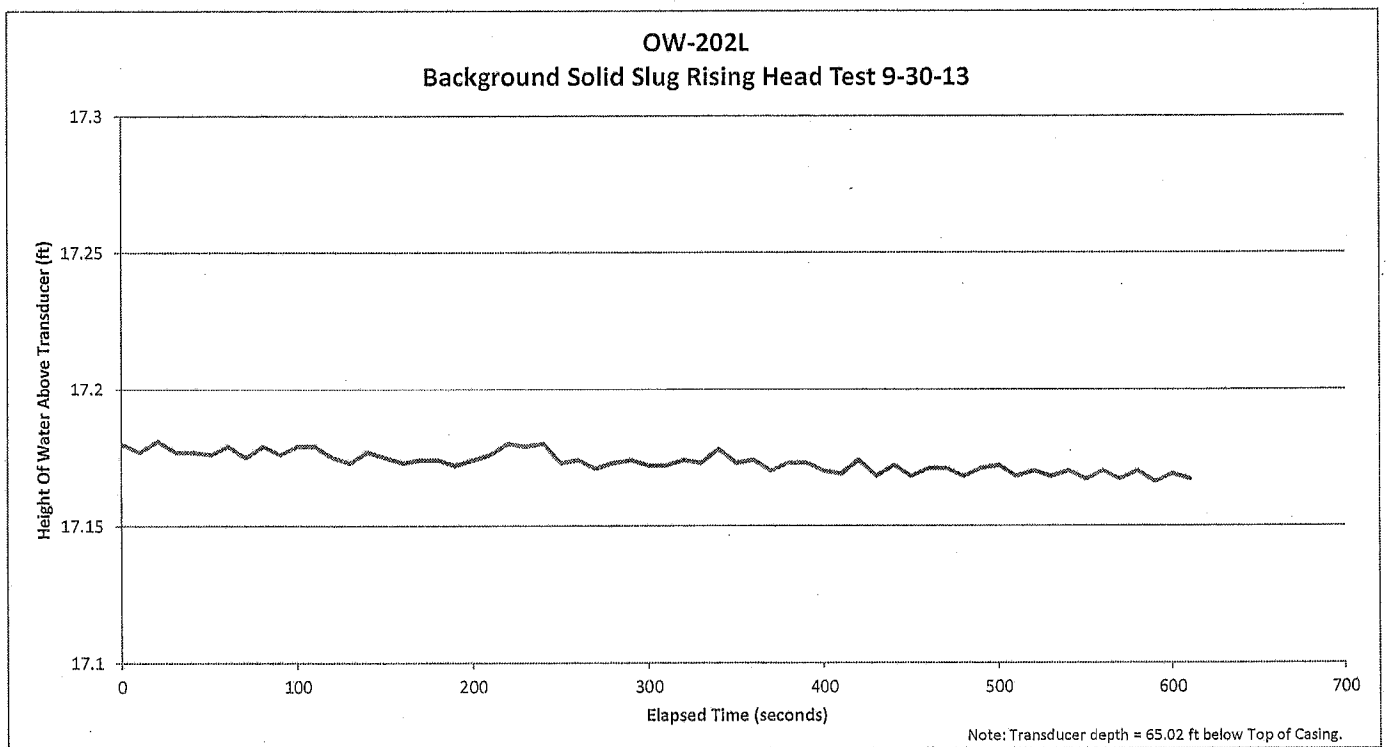
Checked by/Date: J.D. 7/11/14

**OW-202L**  
**Solid Slug Falling Head Test 9-29-13**



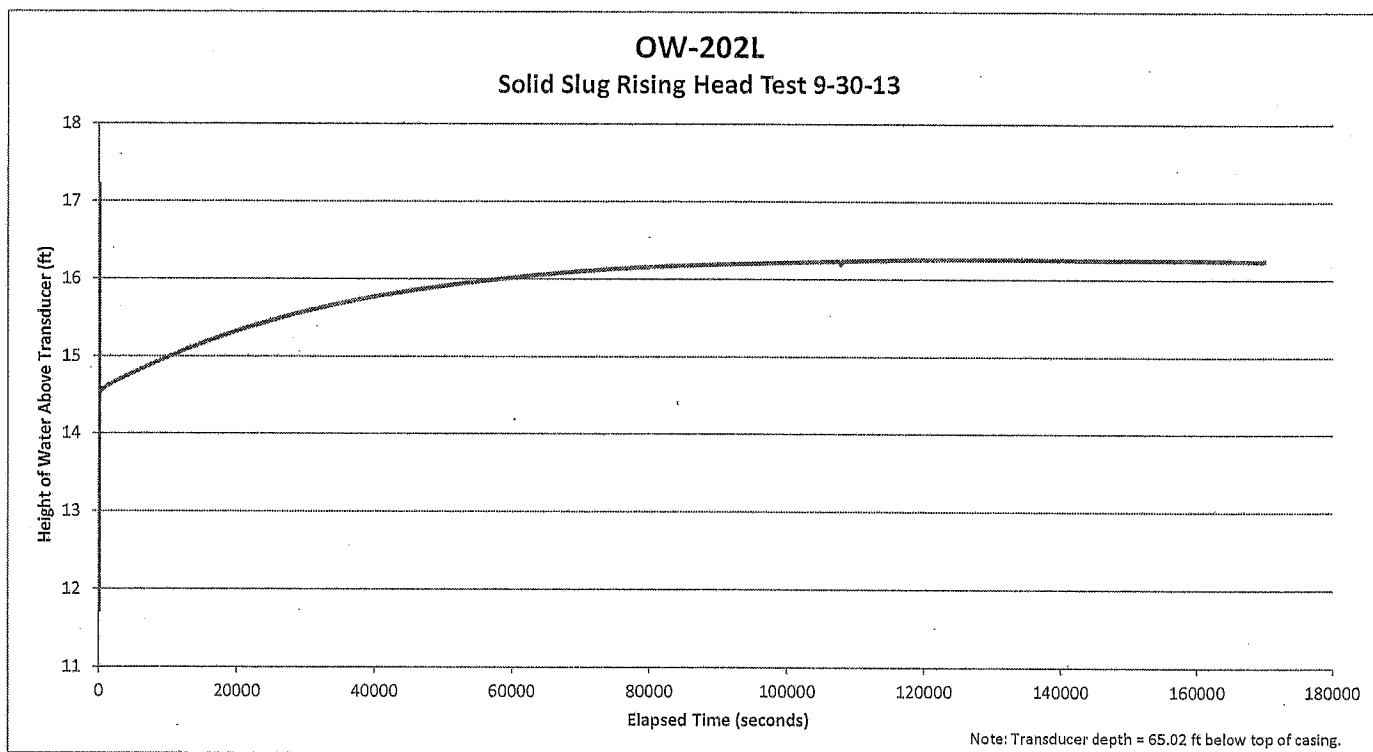
Prepared by/Date: KAL 1/10/14

Checked by/Date: JOS 7/11/14



Prepared by/Date: ICW 1/10/14

Checked by/Date: JS 1/11/14



Prepared by/Date: KWL 1/10/14

Checked by/Date: gas 1/11/14



**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-202D  
Test Method: ASTM D 4044-96 (2008), Sections 8 and 9  
Test Type: Solid  
Test Dates: 9/29/2013; 9/30/2013**

Well Construction Diagram

Plots:

- Background water level for falling head test
- Falling head test
- Background water level for rising head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 202DBF 2013-09-29 17.05.00 (contains background data for falling head test)
- 202DF 2013-09-30 08.13.20 (contains test data for falling head test)
- 202DBR 2013-09-30 08.52.44 (contains background data for rising head test)
- 202DR 2013-09-30 12.05.03 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 55.77 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.
5. A pneumatic test was attempted, but the well was not holding pressure. The test method was changed to the solid slug method.

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Prepared by/Date: KBL 4/10/14

Checked by/Date: JCS 7/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-202D

Date of Observation Well Installation: 8/19/13

Date of Well Development: 9/16/13

Observation Well Northing: 570909.7 US ft Easting: 2448033.7 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/14/2013 through 9/16/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

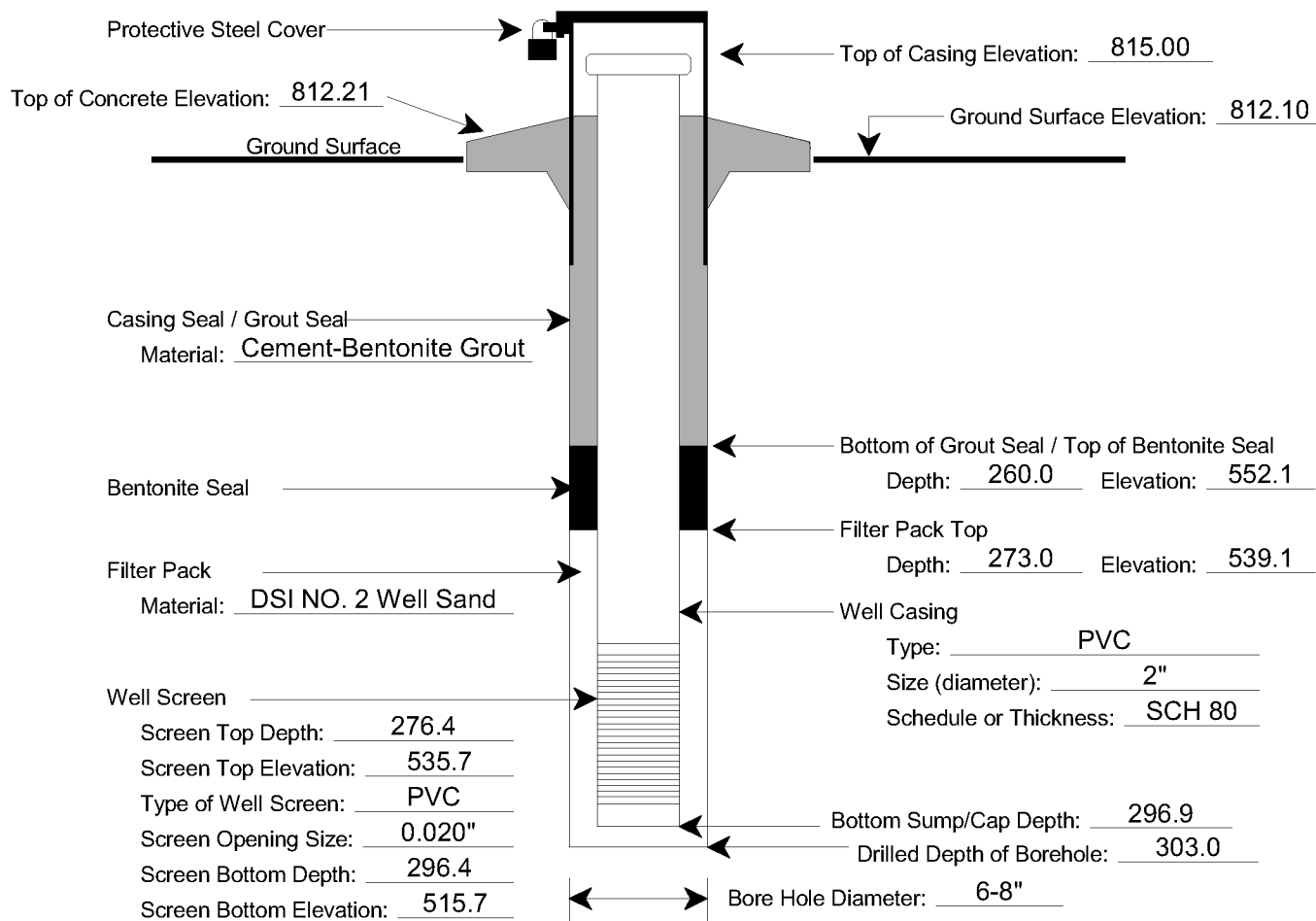
AMEC Inspector Supervising Well Installation: J. Goddard

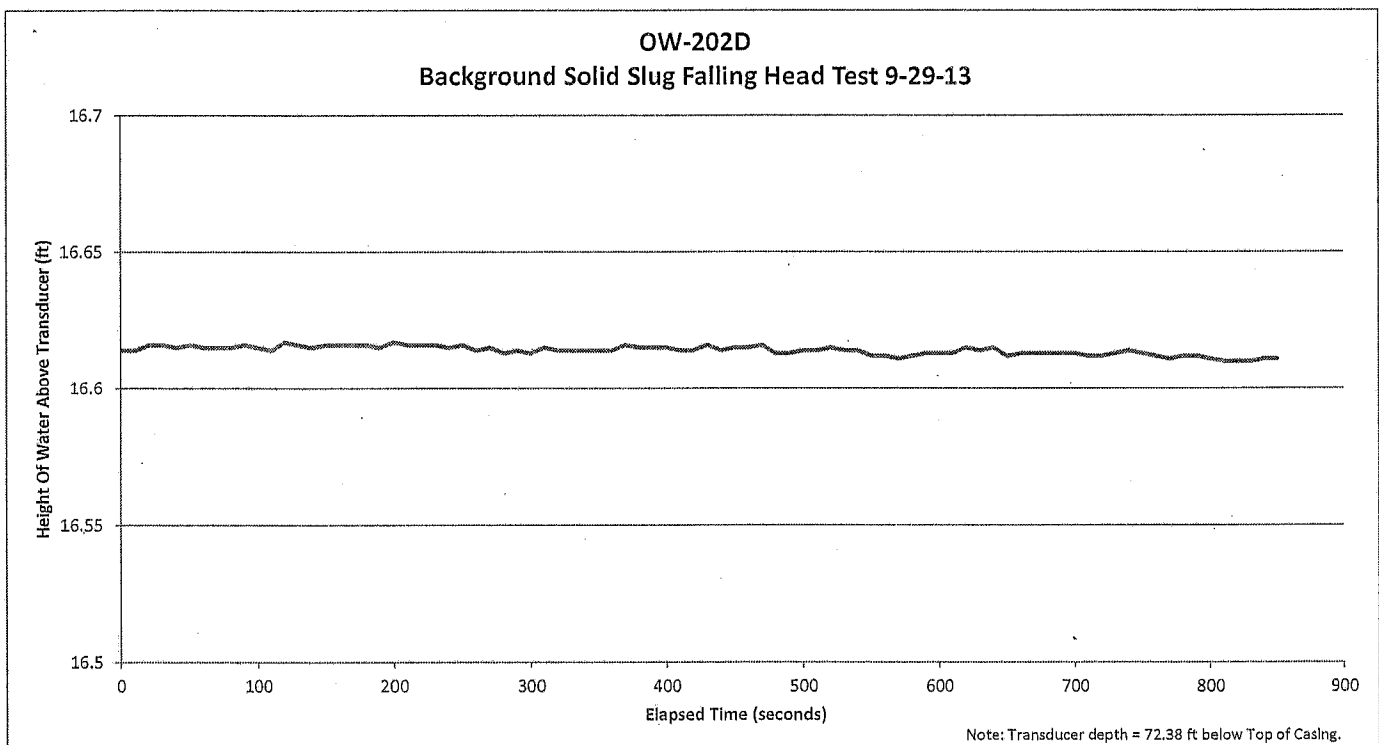
Static Water Level Elevation (NAVD88) collected December 9, 2013: 763.64

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

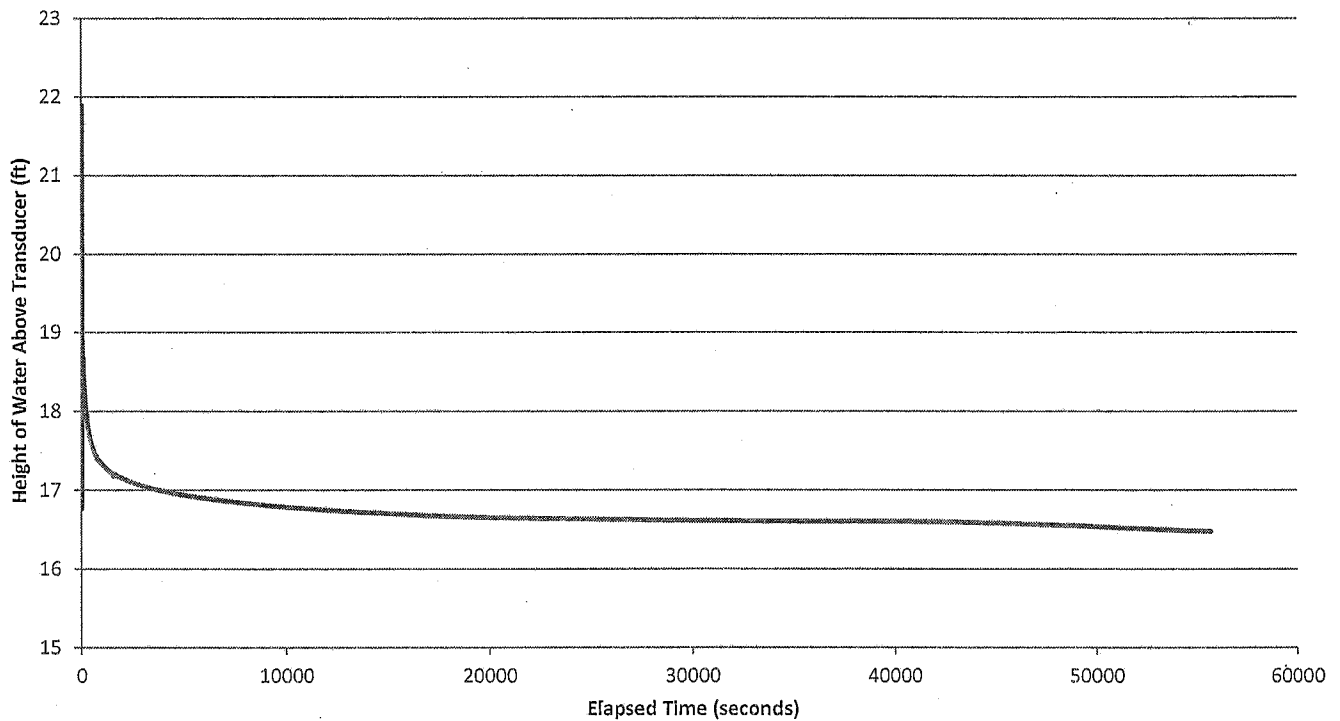
DIAGRAM NOT TO SCALE





Prepared by/Date: KWC 1/10/14  
Checked by/Date: JDS 7/11/14

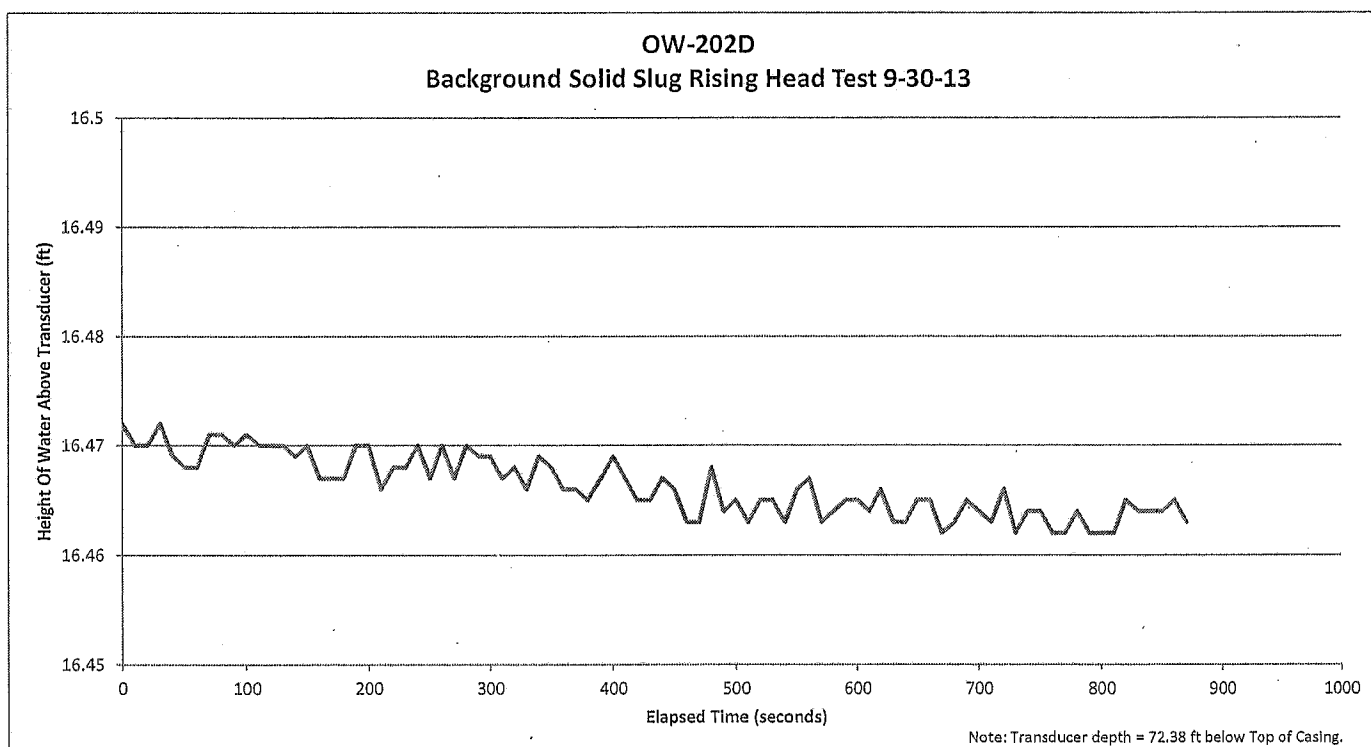
**OW-202D**  
**Solid Slug Falling Head Test 9-29-13**



Note: Transducer depth = 72.38 ft below top of casing.

Prepared by/Date: KHL 1/10/14

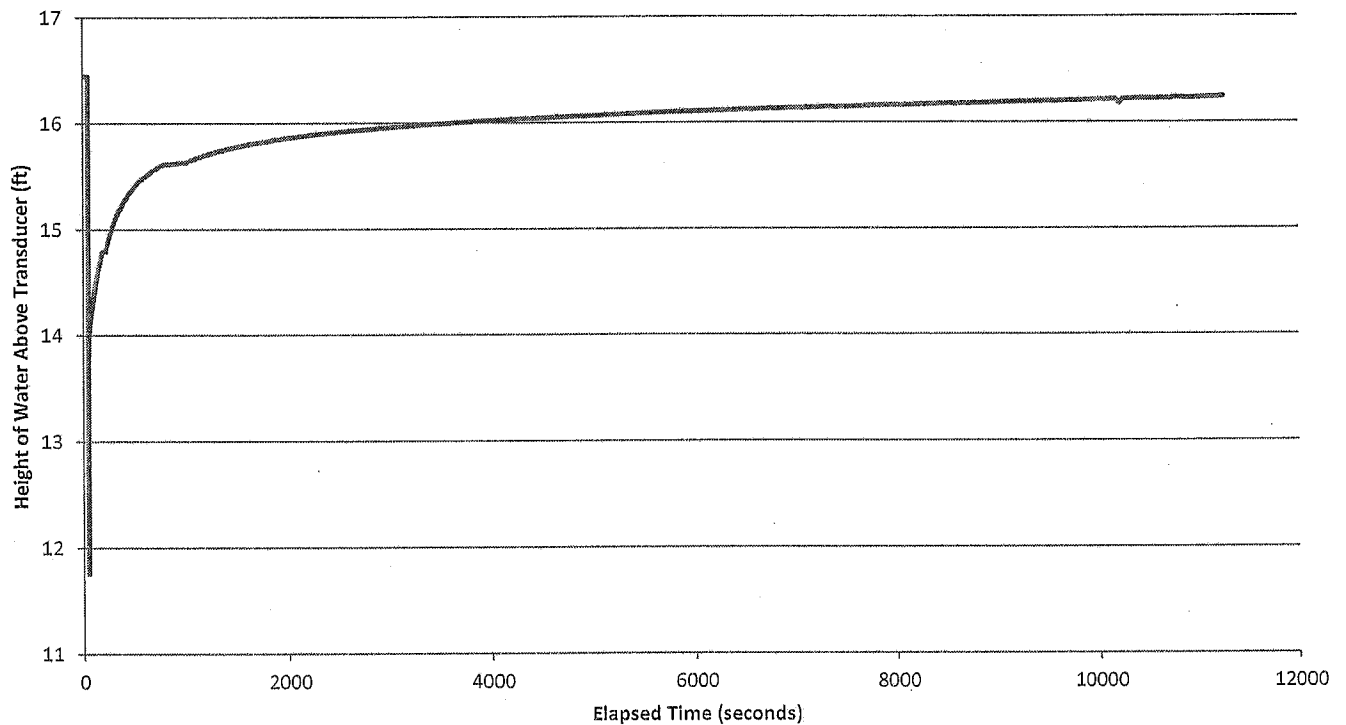
Checked by/Date: JBJ 1/11/14



Prepared by/Date: KAL 1/10/14

Checked by/Date: JDL 1/11/14

**OW-202D**  
**Solid Slug Rising Head Test 9-30-13**



Note: Transducer depth = 72.38 ft below top of casing.

Prepared by/Date: KNL 1/10/14

Checked by/Date: JAJ 7/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-401U**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/17/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 401UBR 2013-09-17 14.38.44 (contains background data for rising head test)
- 401UR 2013-09-17 14.40.28 (contains test data for rising head test)
- 401UBF 2013-09-17 15.30.48 (contains background data for falling head test)
- 401UF 2013-09-17 16.17.50 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 10.41 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KHL 1/10/14

Checked by/Date: Jas 7/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-401U

Date of Observation Well Installation: 8/4/13

Date of Well Development: 9/18/13

Observation Well Northing: 571967.9 US ft Easting: 2447619.9 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: N. Dempsey (TSD)

## NOTES:

License No.: TN #936

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizer installed approximately 12.0 feet below ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/12/2013 through 9/18/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

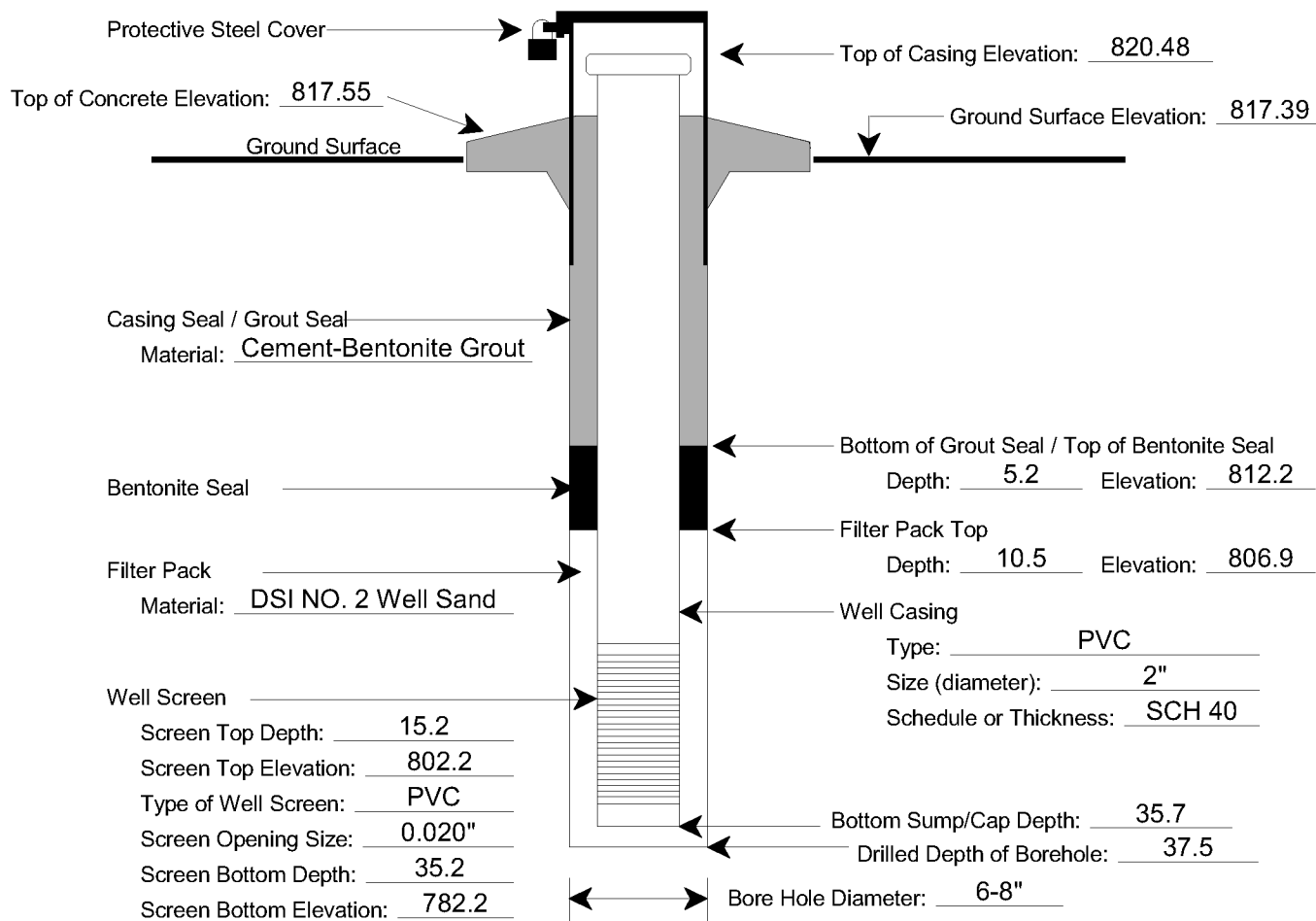
AMEC Inspector Supervising Well Installation: J. Hensberry

Static Water Level Elevation (NAVD88) collected December 9, 2013: 813.14

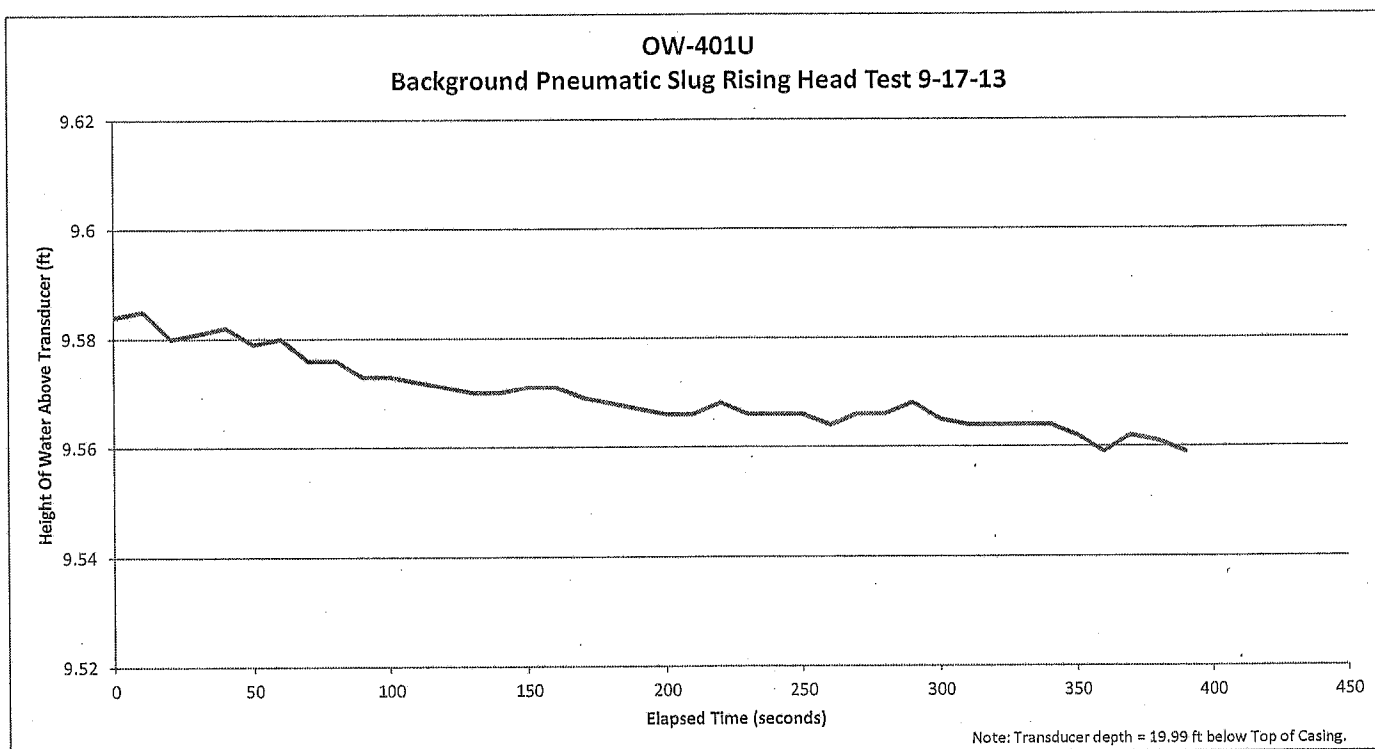
Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE



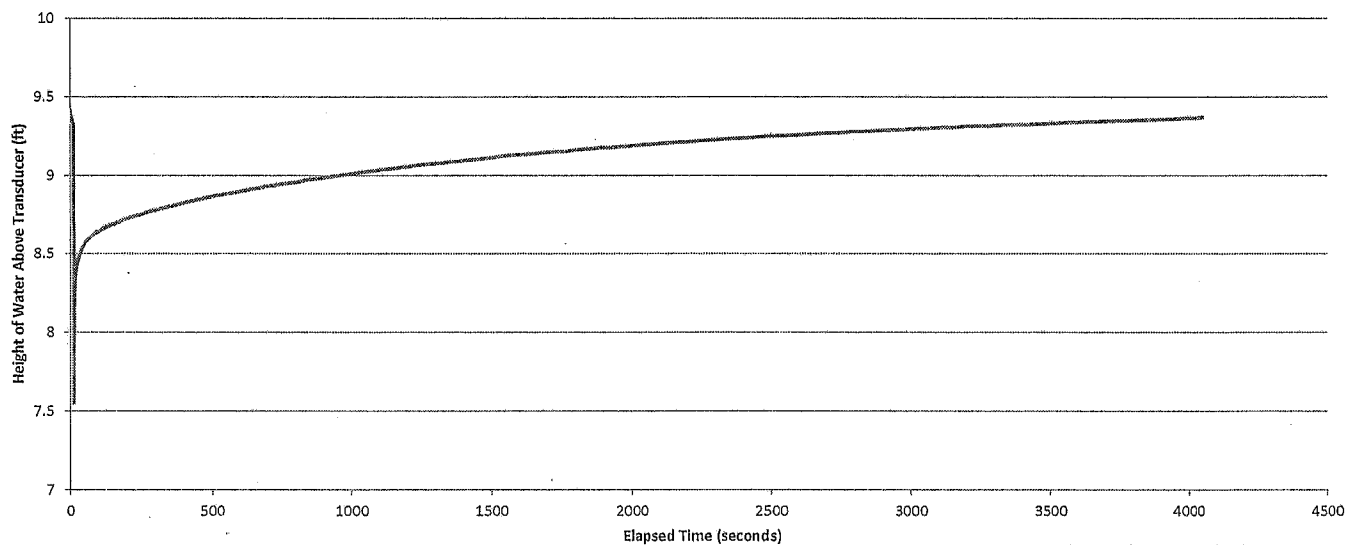




Prepared by/Date: KRL 2/10/14

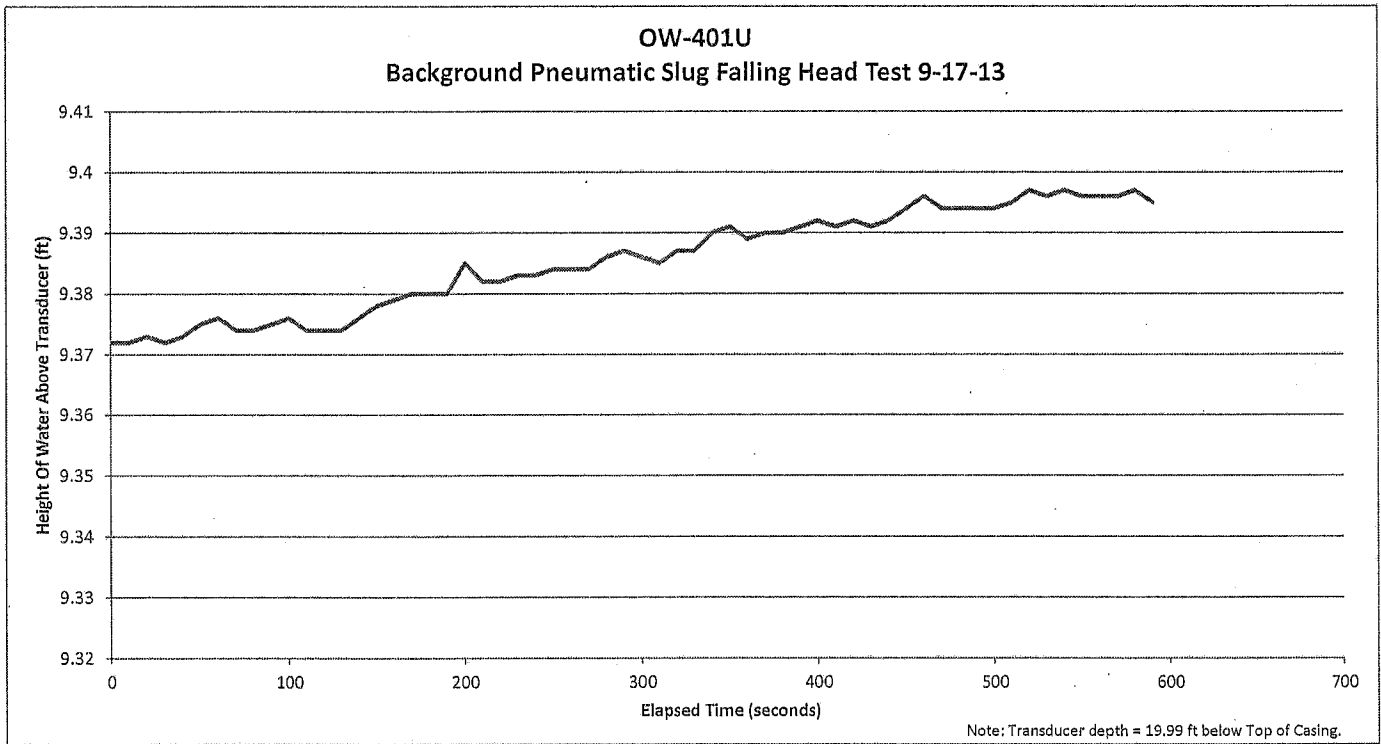
Checked by/Date: [Signature] 2/11/14

OW-401U  
Pneumatic Slug Rising Head Test 9-17-13



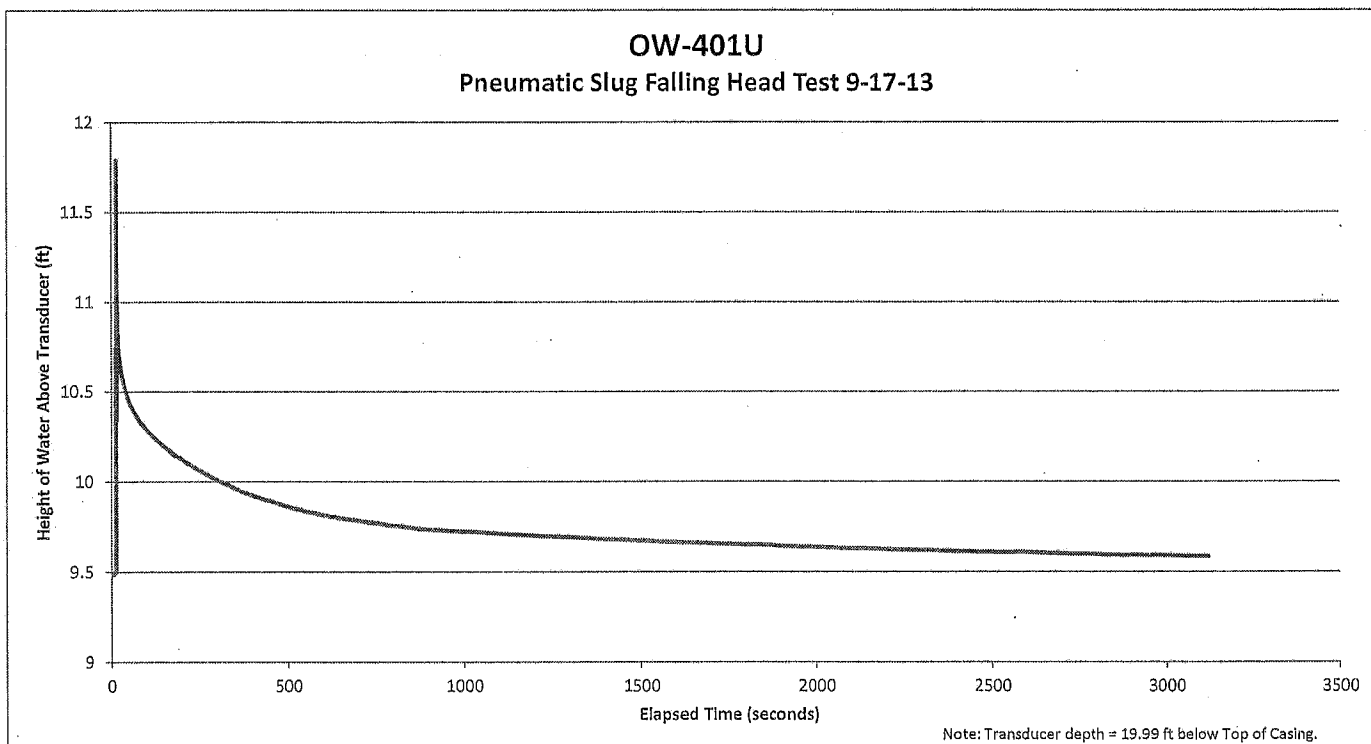
Prepared by/Date: KAL 1/10/14

Checked by/Date: JCS 1/11/14



Prepared by/Date: KAL 1/10/14

Checked by/Date: gas 7/11/14



Prepared by/Date: KBL 1/10/14

Checked by/Date: JRS 1/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-401L**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/17/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 401LBR 2013-09-17 09.56.10 (contains background and pressurization/equalization data for rising head test)
- 401LR 2013-09-17 10.35.04 (contains test data for rising head test)
- 401LBF 2013-09-17 11.43.44 (contains background and vacuum/equalization data for falling head test)
- 401LF 2013-09-17 12.35.49 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 40.46 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAC 1/10/14

Checked by/Date: JOS 1/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-401L

Date of Observation Well Installation: 8/3/13

Date of Well Development: 8/13/13

Observation Well Northing: 571973.8 US ft Easting: 2447628.0 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: N. Dempsey (TSD)

## NOTES:

License No.: TN #936

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/7/2013 through 8/13/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

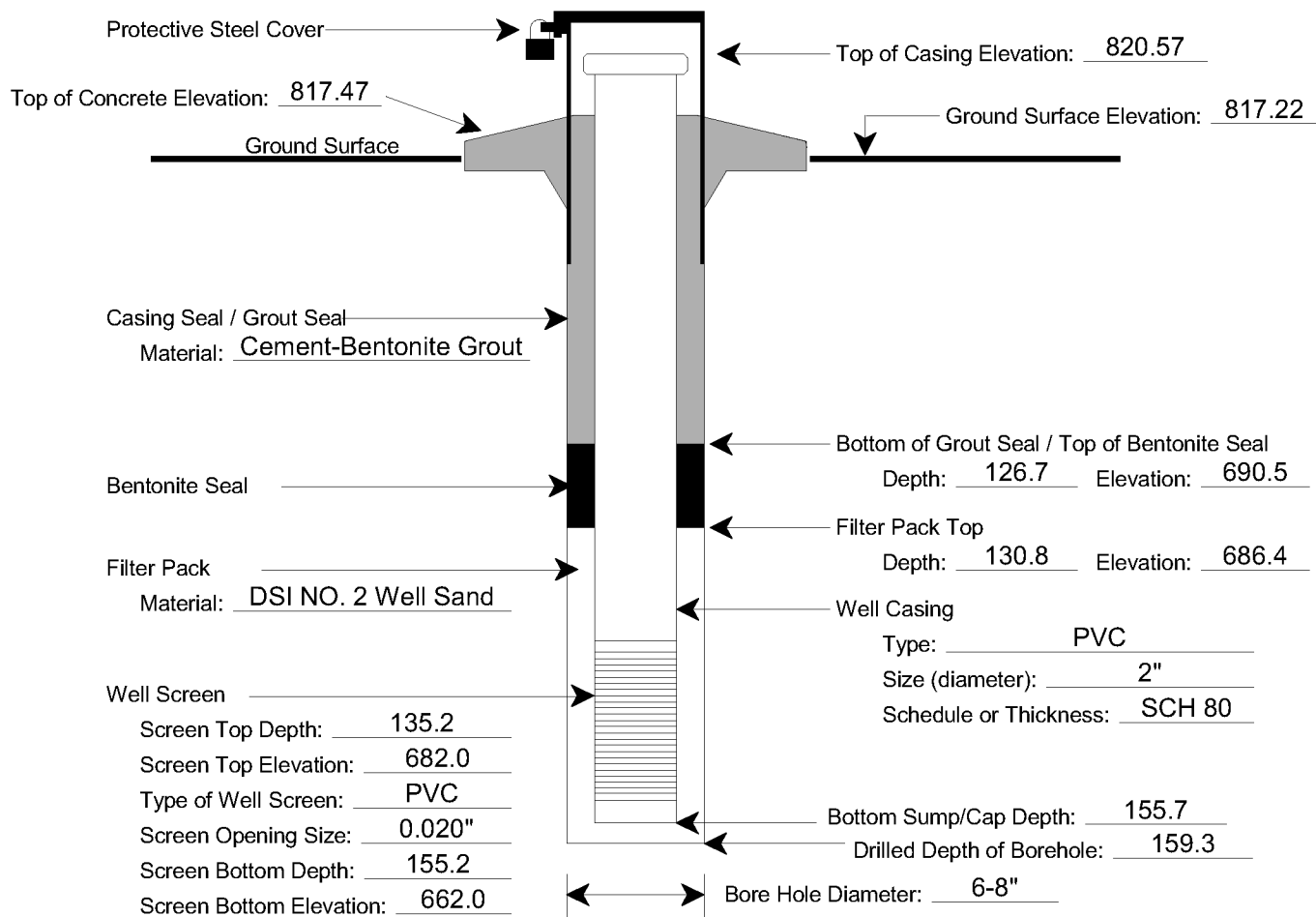
AMEC Inspector Supervising Well Installation: J. Hensberry

Static Water Level Elevation (NAVD88) collected December 9, 2013: 791.75

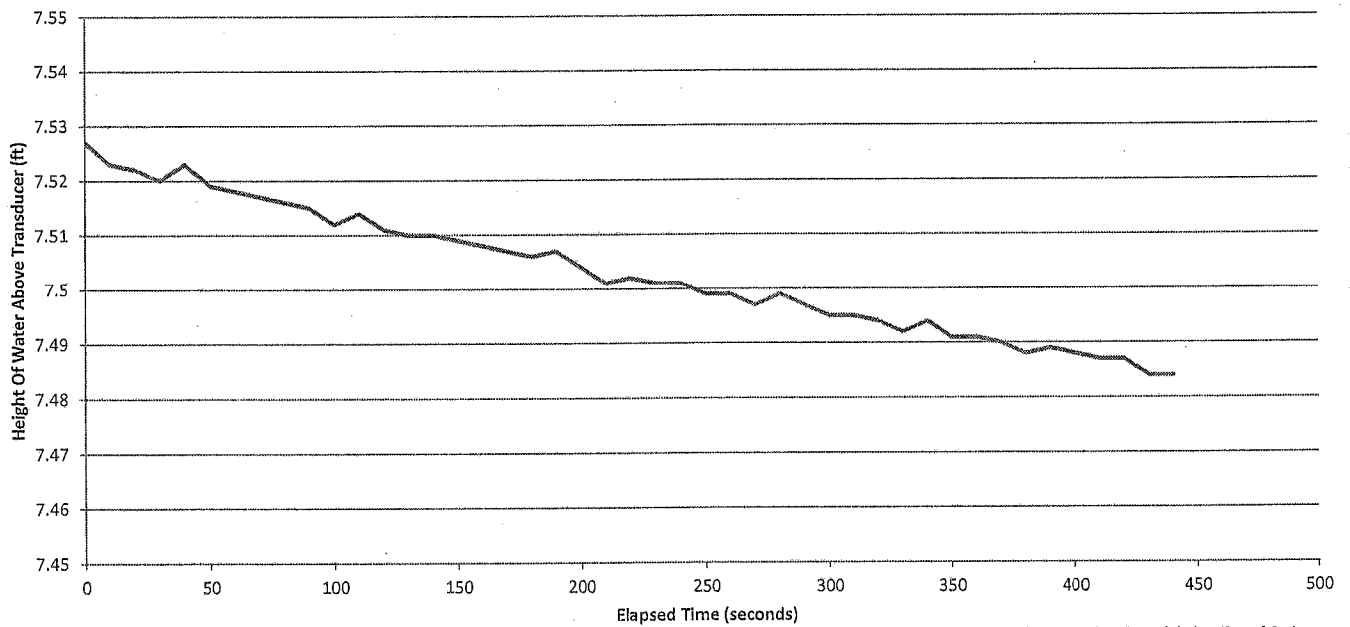
Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE

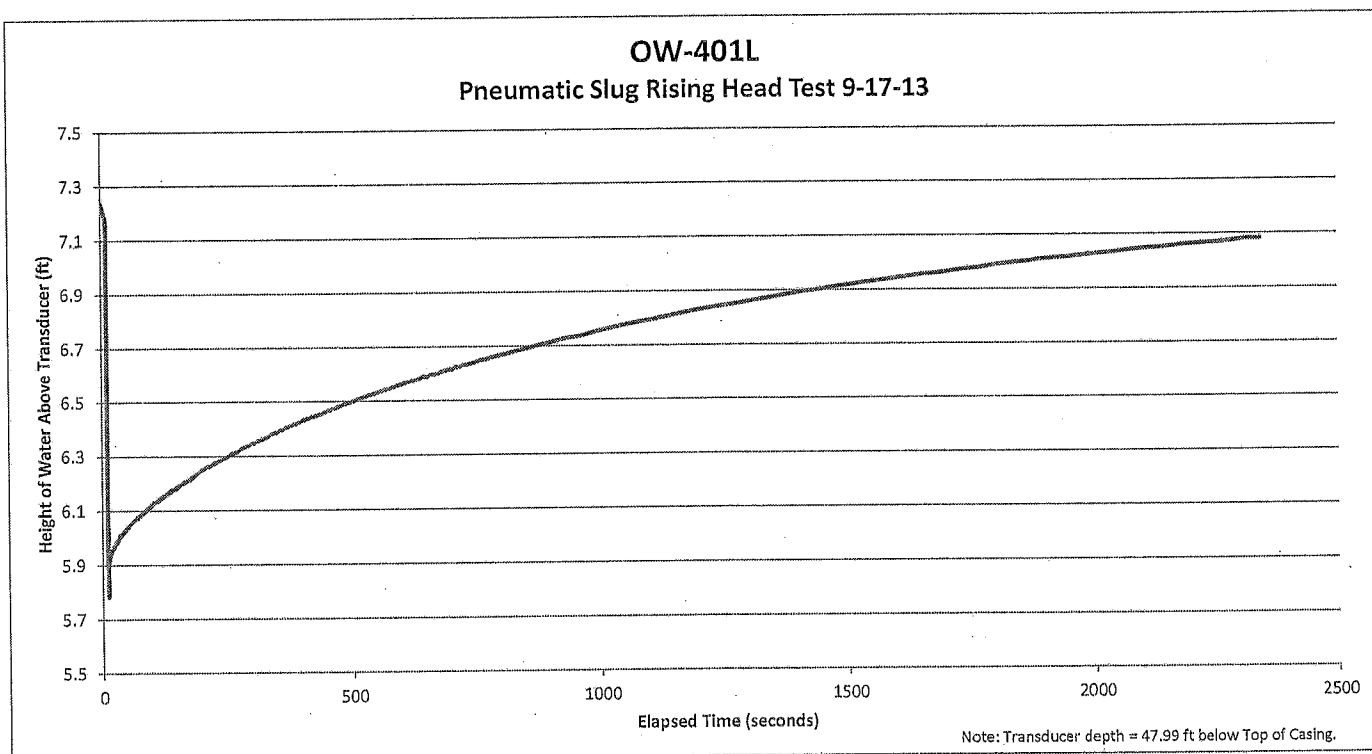


**OW-401L**  
**Background Pneumatic Slug Rising Head Test 9-17-13**



Prepared by/Date: KAL 1/10/14

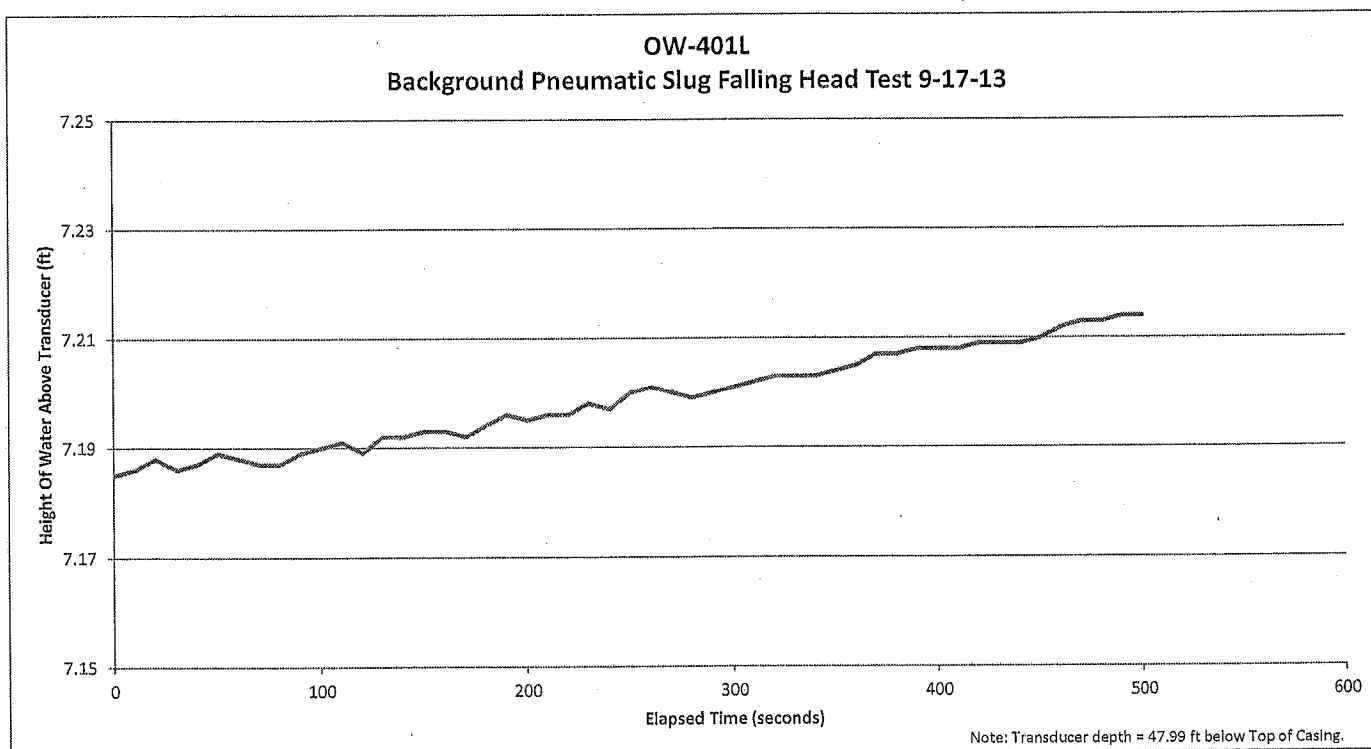
Checked by/Date: [Signature] 1/16/14



Prepared by/Date: KHL 1/10/14

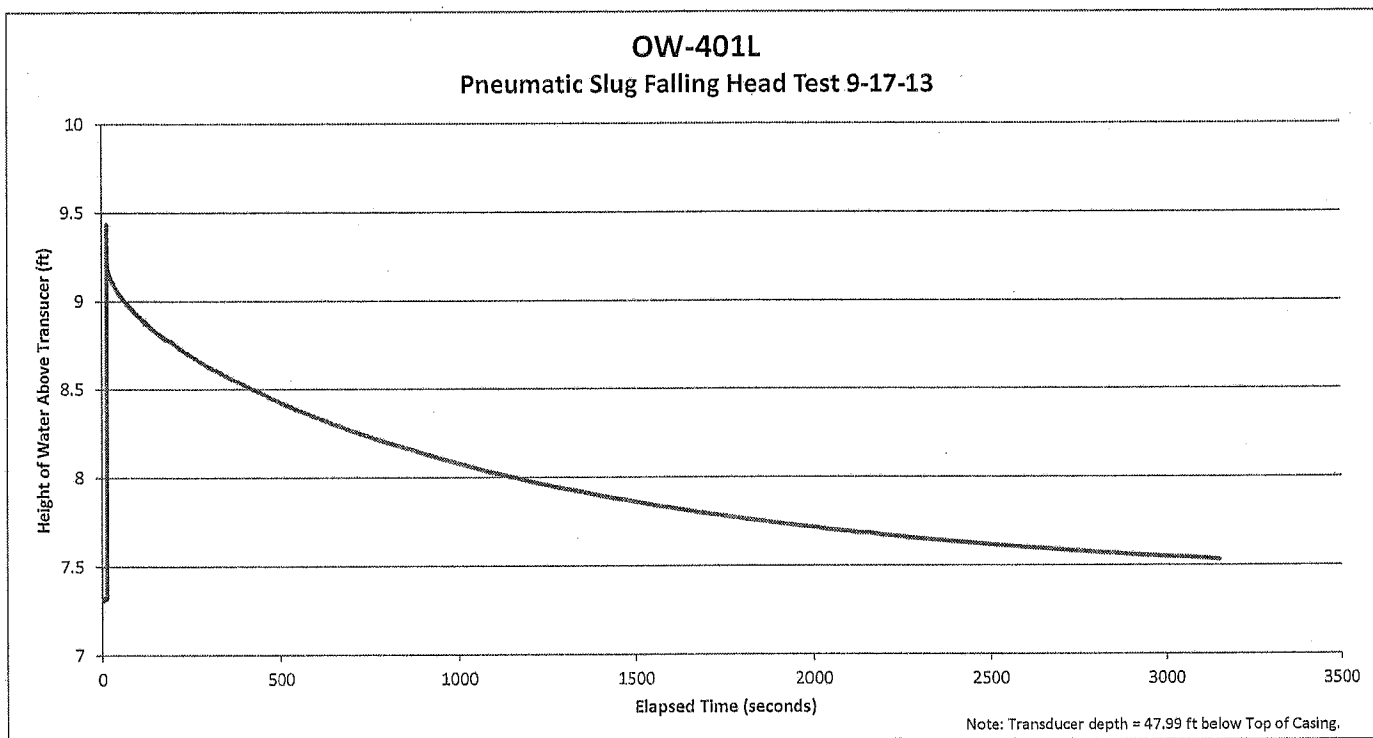
Checked by/Date: JR 1/4/14





Prepared by/Date: KH 1/10/14

Checked by/Date: JG 7/1/14



Prepared by/Date: KHL 1/10/14

Checked by/Date: gas 1/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST FIELD DATA SHEETS**

**Observation Well OW-401D  
Test Method: ASTM D 4044-96 (2008), Sections 8 and 9  
Test Type: Solid  
Test Dates: 9/19/2013; 9/24/2013; 9/26/2013**

Well Construction Diagram

Plots:

- Background water level for falling head test
- Falling head test
- Background water level for rising head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 401DBF 2013-09-4 09.44.30 (contains background data for falling head test)
- 401DF 2013-09-26 10.57.13 (contains test data for falling head test)
- 401DBR 2013-09-19 07.17.40 (contains background data for rising head test)
- 401DR 2013-09-24 09.22.58 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 41.97 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KHL 11/10/14

Checked by/Date: JCS 11/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-401D

Date of Observation Well Installation: 8/2/13

Date of Well Development: 8/15/13

Observation Well Northing: 571941.2 US ft Easting: 2447589.7 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: N. Dempsey (TSD)

## NOTES:

License No.: TN #936

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/14/2013 through 8/15/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

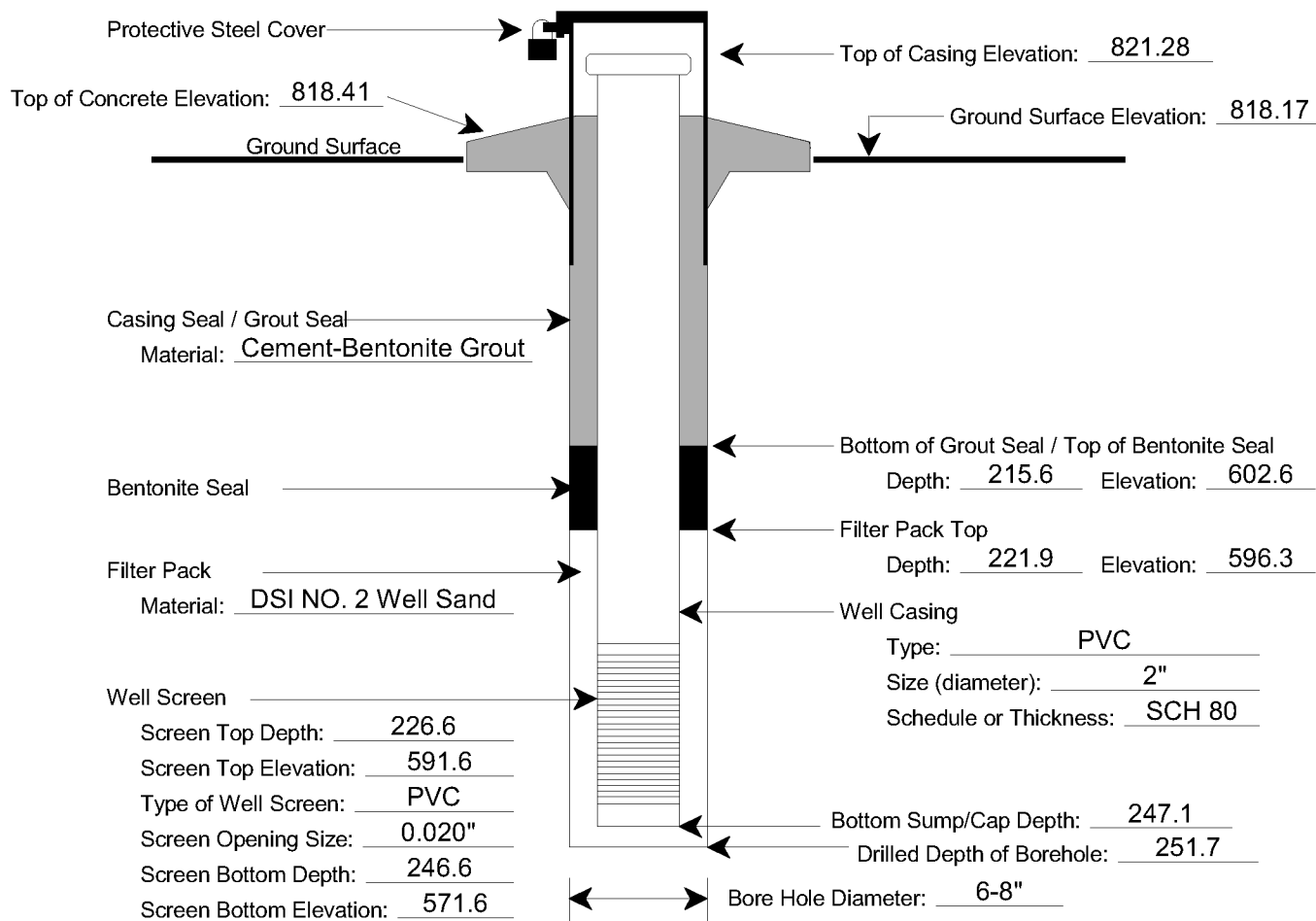
AMEC Inspector Supervising Well Installation: J. Hensberry

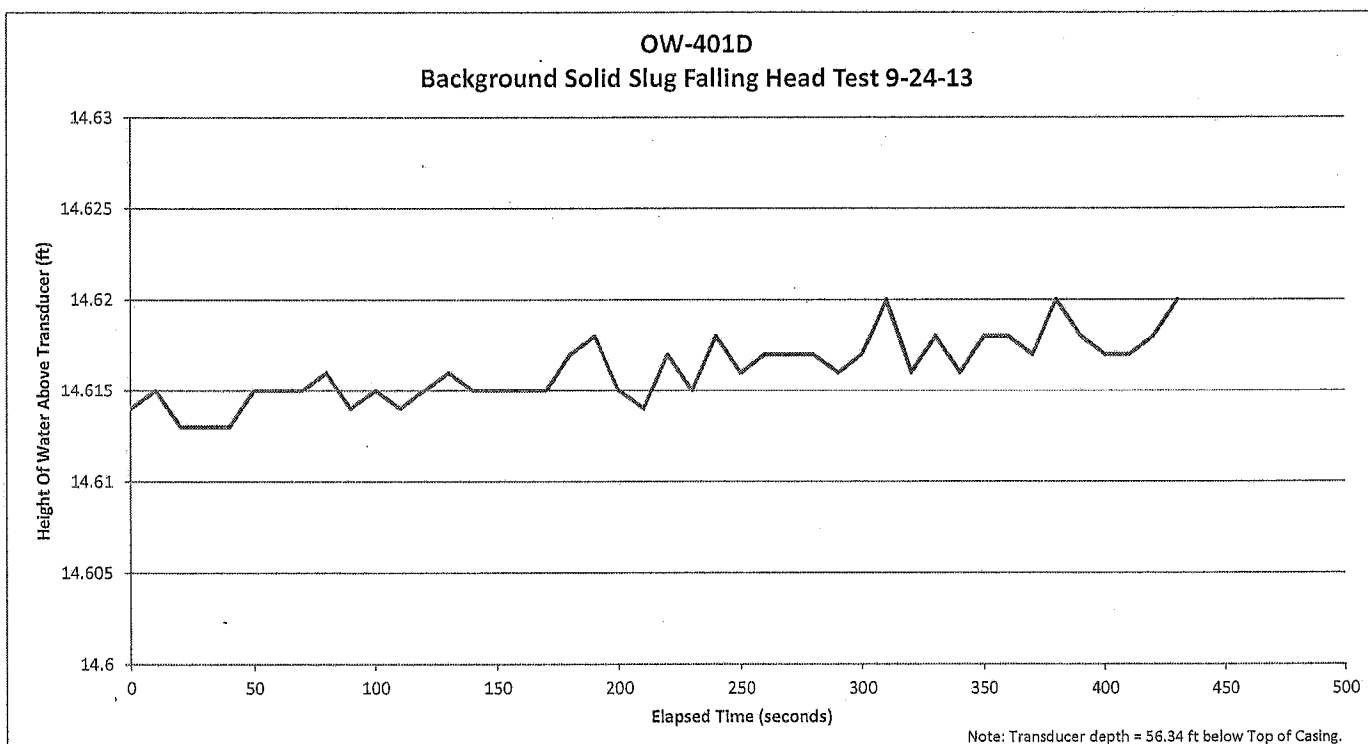
Static Water Level Elevation (NAVD88) collected December 9, 2013: 786.87

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE

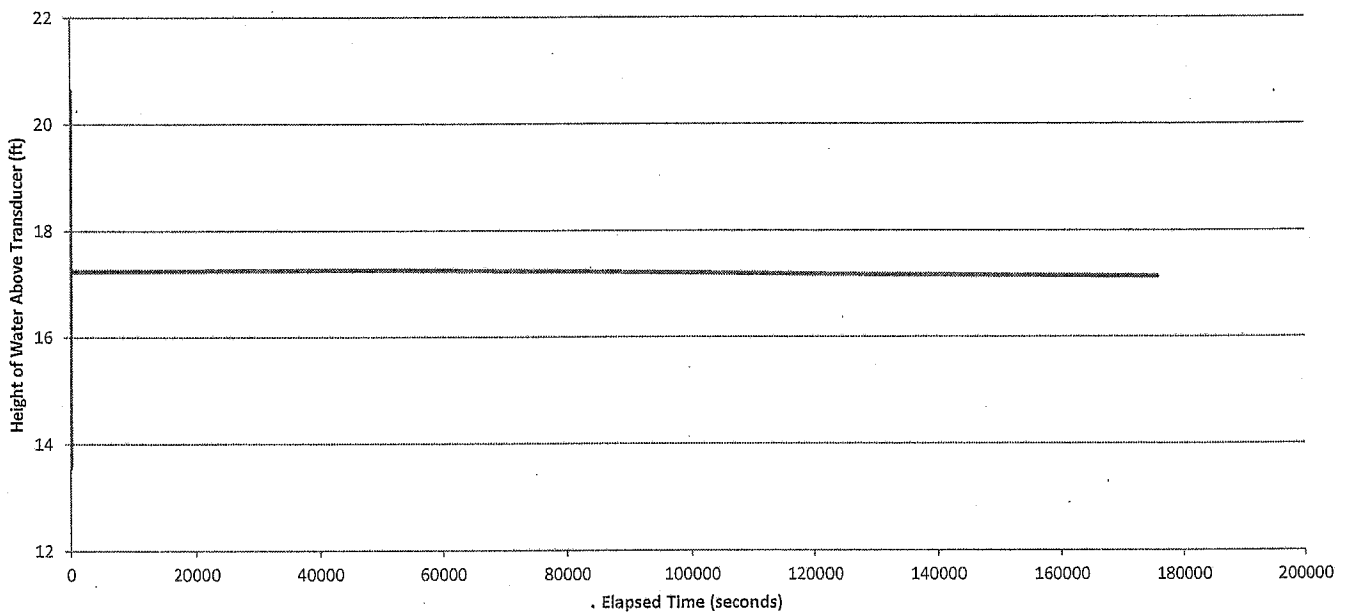




Prepared by/Date: KHL 1/10/14

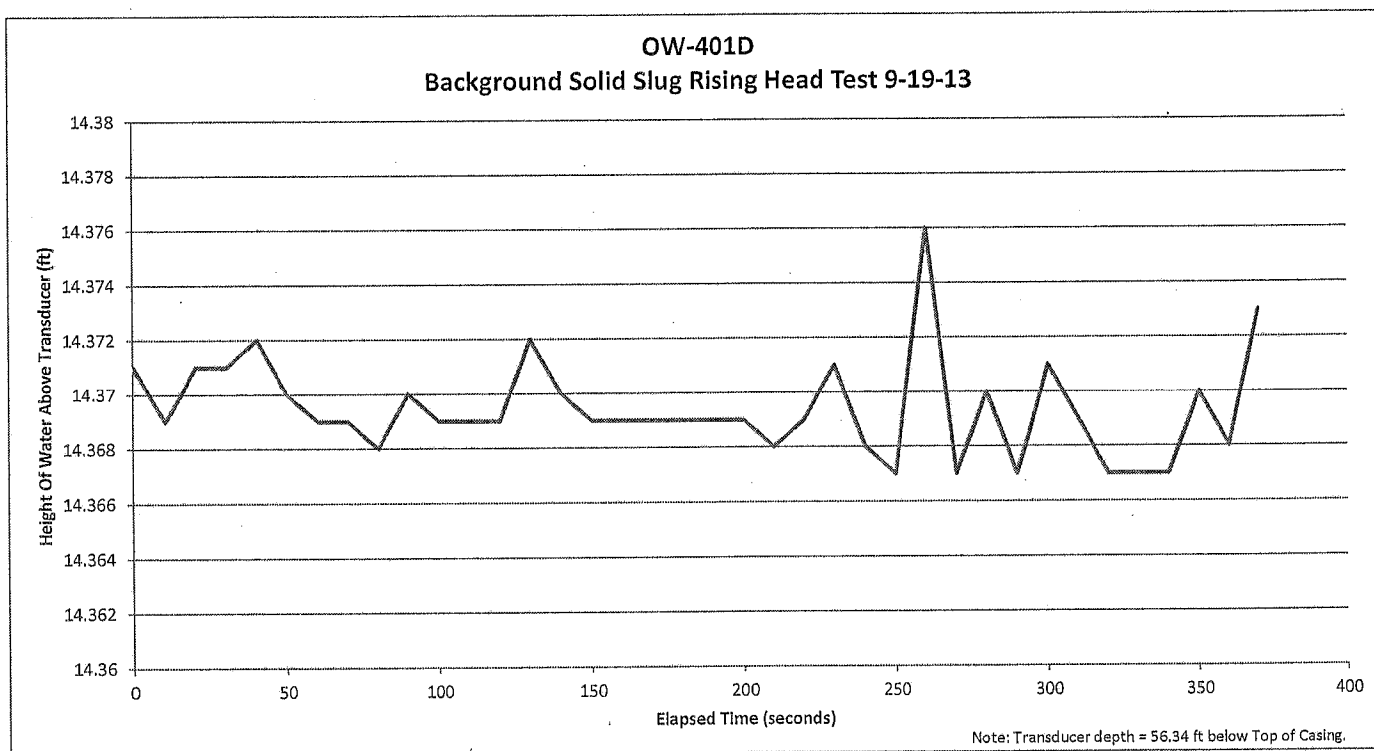
Checked by/Date: JAS 1/11/14

**OW-401D**  
**Solid Slug Falling Head Test 9-24-13**

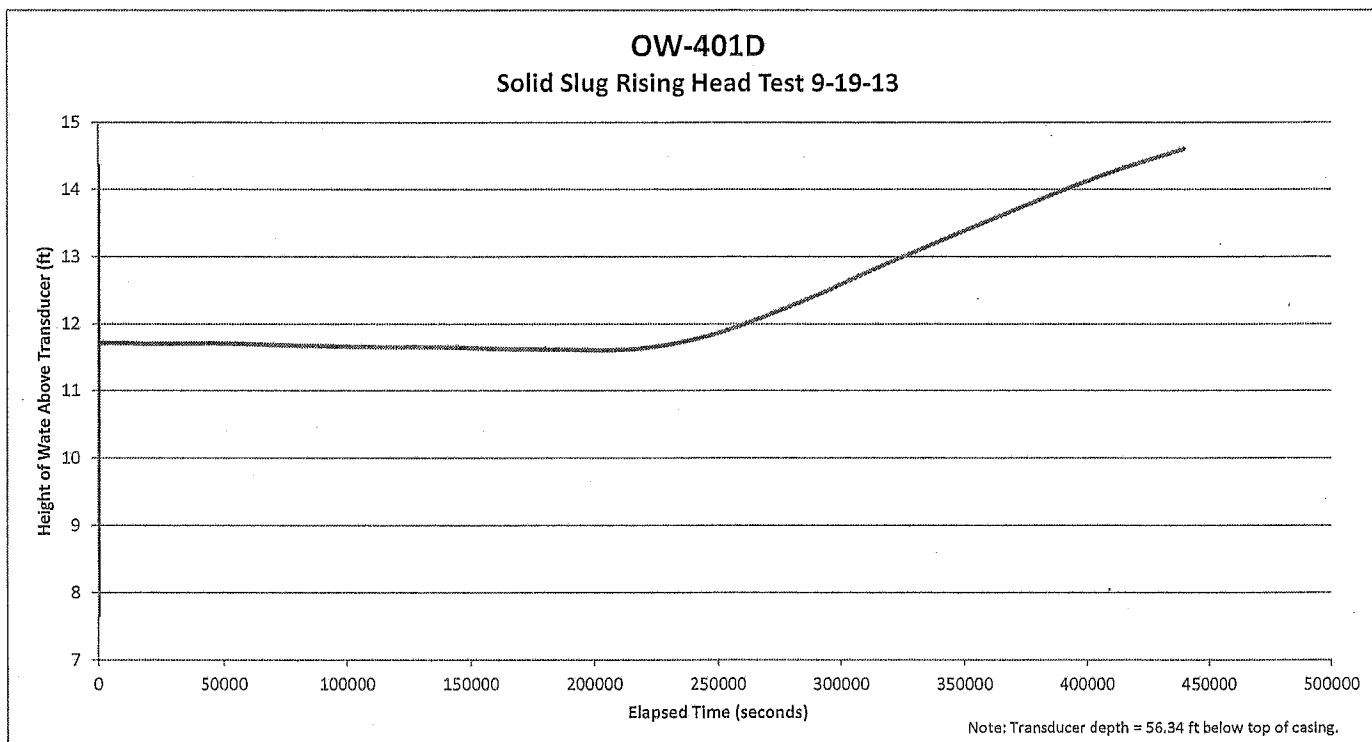


Prepared by/Date: KHL 1/10/14

Checked by/Date: JDS 1/16/14



Prepared by/Date: KAL 1/10/14  
Checked by/Date: JAL 1/10/14



Prepared by/Date: KHL 1/16/14

Checked by/Date: JRJ 1/14/14



**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-409U**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Solid**

**Test Dates: 9/26/2013; 9/27/2013**

Well Construction Diagram

Plots:

- Background water level for falling head test
- Falling head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 409UBF 2013-09-26 12.43.19 (contains background data for falling head test)
- 409UF 2013-09-26 16.20.58 (contains test data for falling head test)
- 409UR 2013-09-27 08.16.08 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 64.70 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.
5. Background for rising head test is last portion of falling head test which was allowed to continue overnight due to very slow well response.

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Prepared by/Date: KH2 1/18/14

Checked by/Date: GC2 1/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-409U

Date of Observation Well Installation: 8/31/13

Date of Well Development: 9/18/13

Observation Well Northing: 570557.1 US ft Easting: 2448130.3 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed approximately 14.0 and 54.0 feet below ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/12/2013 through 9/18/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

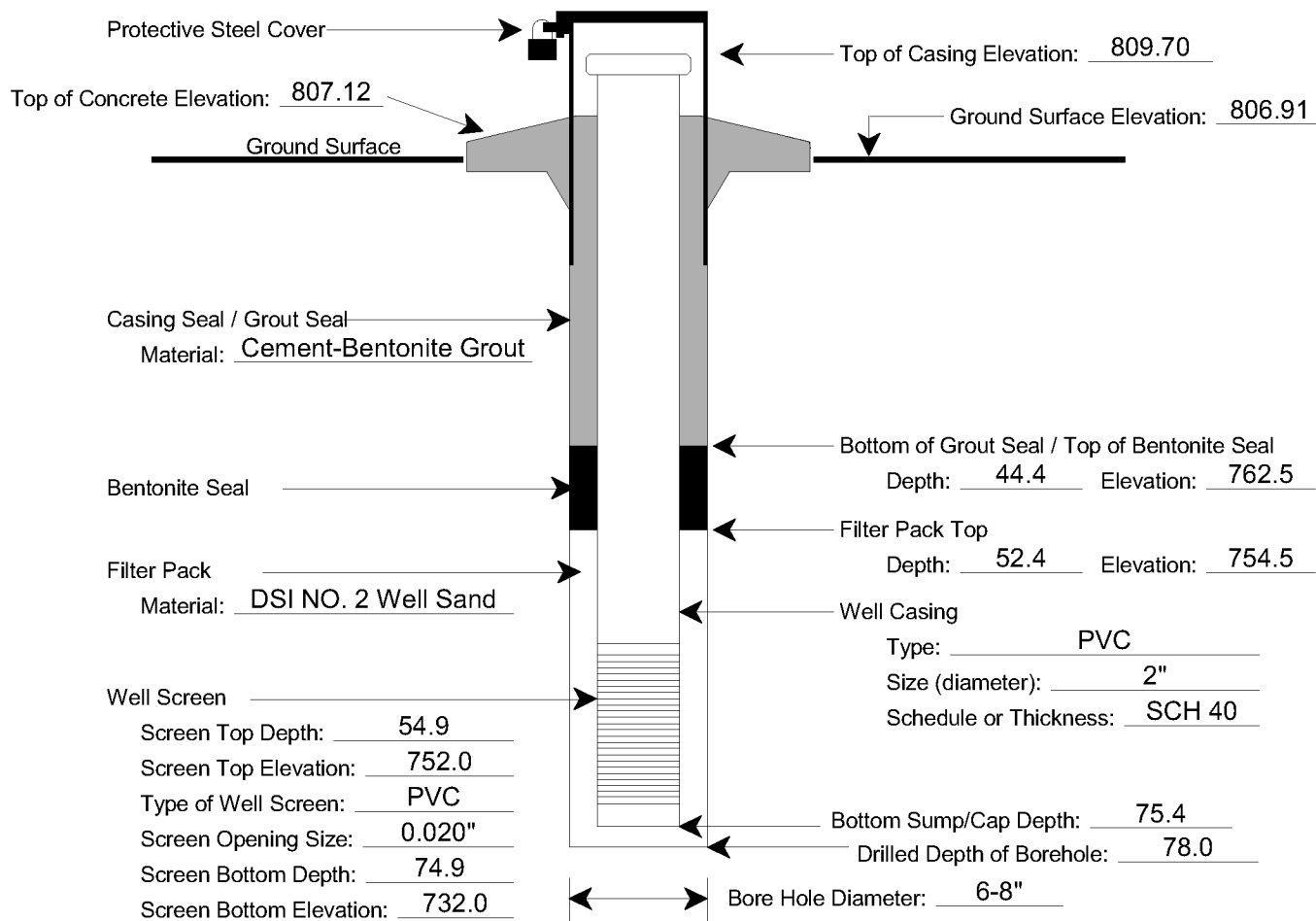
AMEC Inspector Supervising Well Installation: K. Lloyd

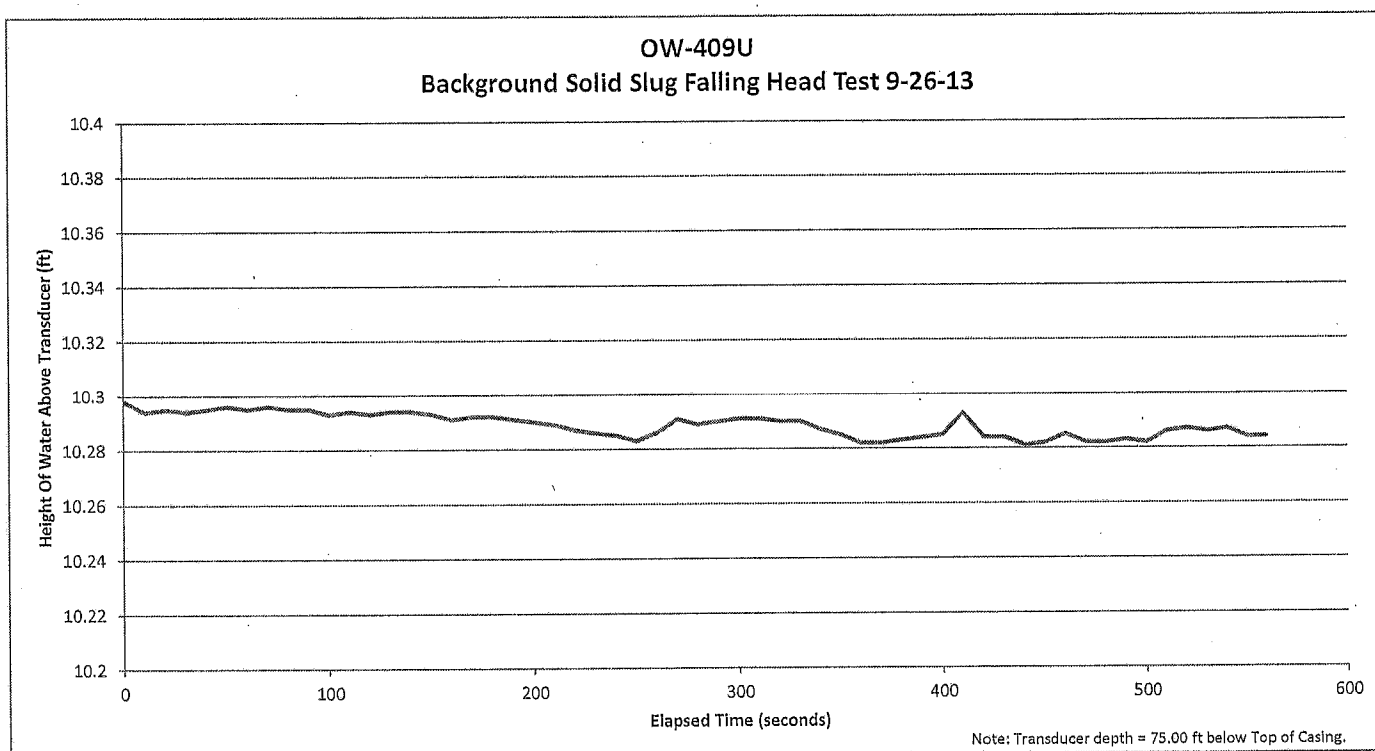
Static Water Level Elevation (NAVD88) collected December 9, 2013: 762.56

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

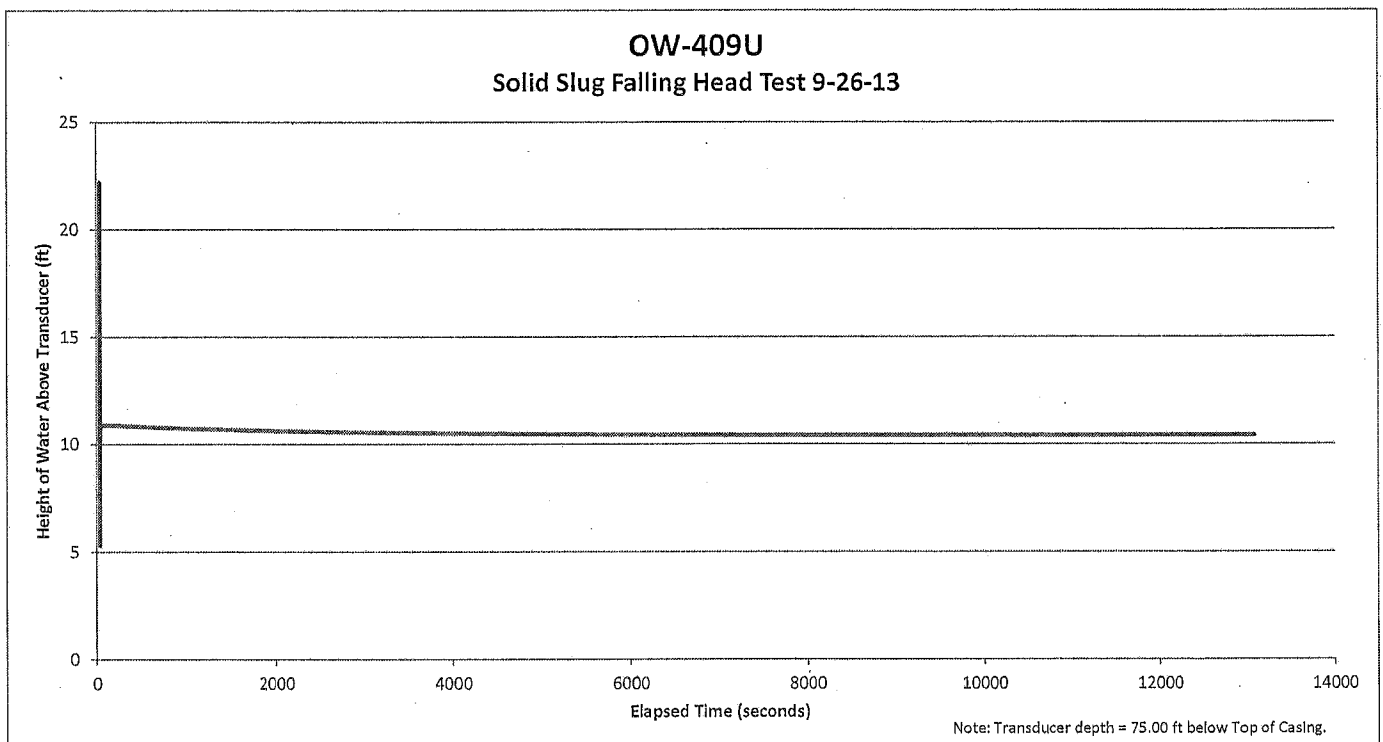
DIAGRAM NOT TO SCALE





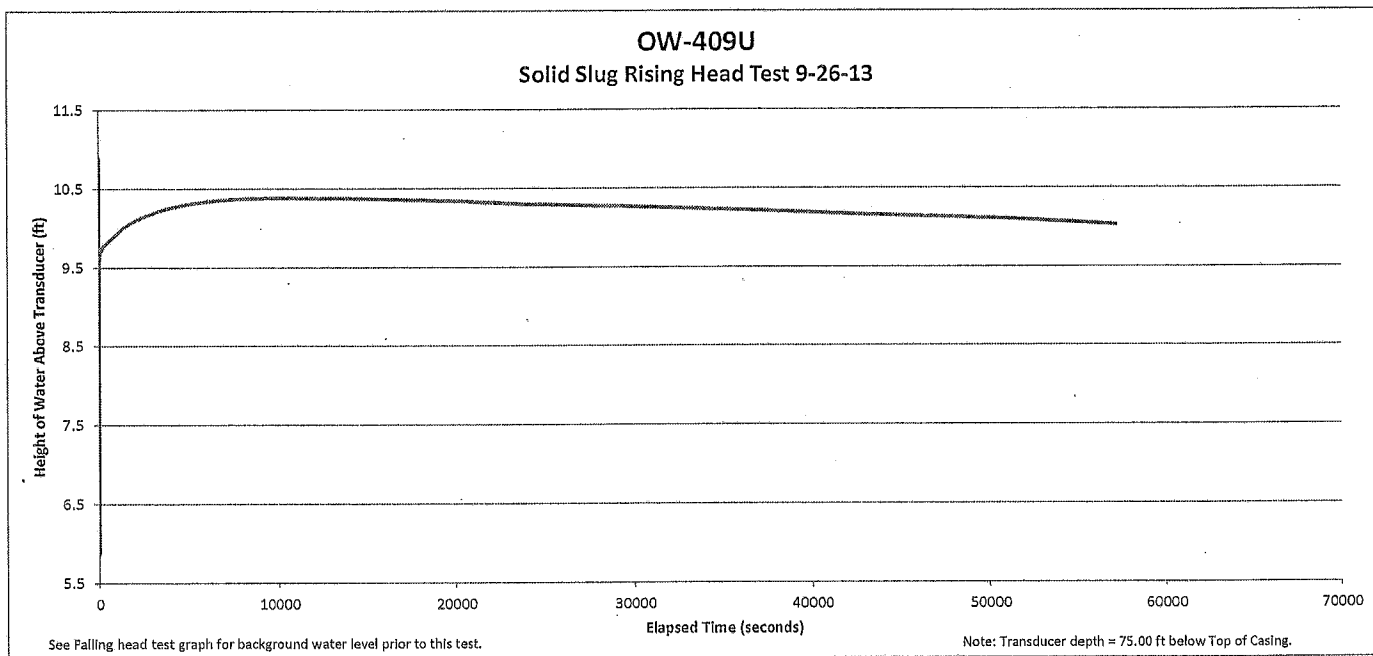
Prepared by/Date: ICHL 1/10/14

Checked by/Date: JDS 1/11/14



Prepared by/Date: KAC 11/10/14

Checked by/Date: JOS 1/11/14



Prepared by/Date: KAL 1/10/14

Checked by/Date: JW 1/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-409L**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/26/2013; 9/27/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 409LBR 2013-09-26 12.49.38 (contains background and pressurization/equalization data for rising head test)
- 409LR 2013-09-29 6 16.20.00 (contains test data for rising head test)
- 409LBF 2013-09-27 11.49.06 (contains background and vacuum/equalization data for falling head test)
- 409LF 2013-09-27 15.45.56 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 36.50 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KLK 1/10/14

Checked by/Date: QAS 1/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-409L

Date of Observation Well Installation: 8/30/13

Date of Well Development: 9/15/13

Observation Well Northing: 570570.8 US ft Easting: 2448143.3 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed approximately 47.0 and 87.0 feet below ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/12/2103 through 9/15/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

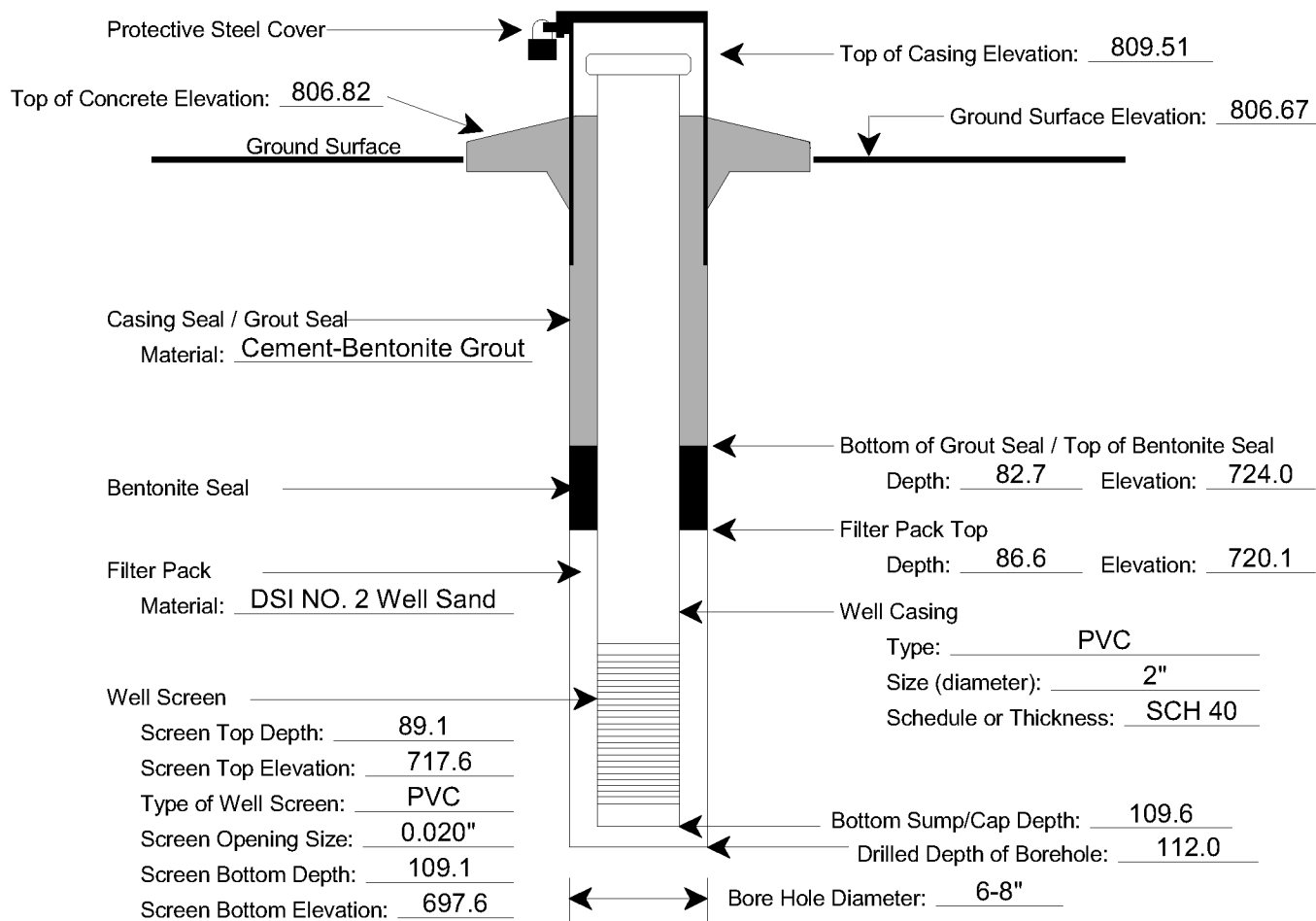
AMEC Inspector Supervising Well Installation: K. Lloyd

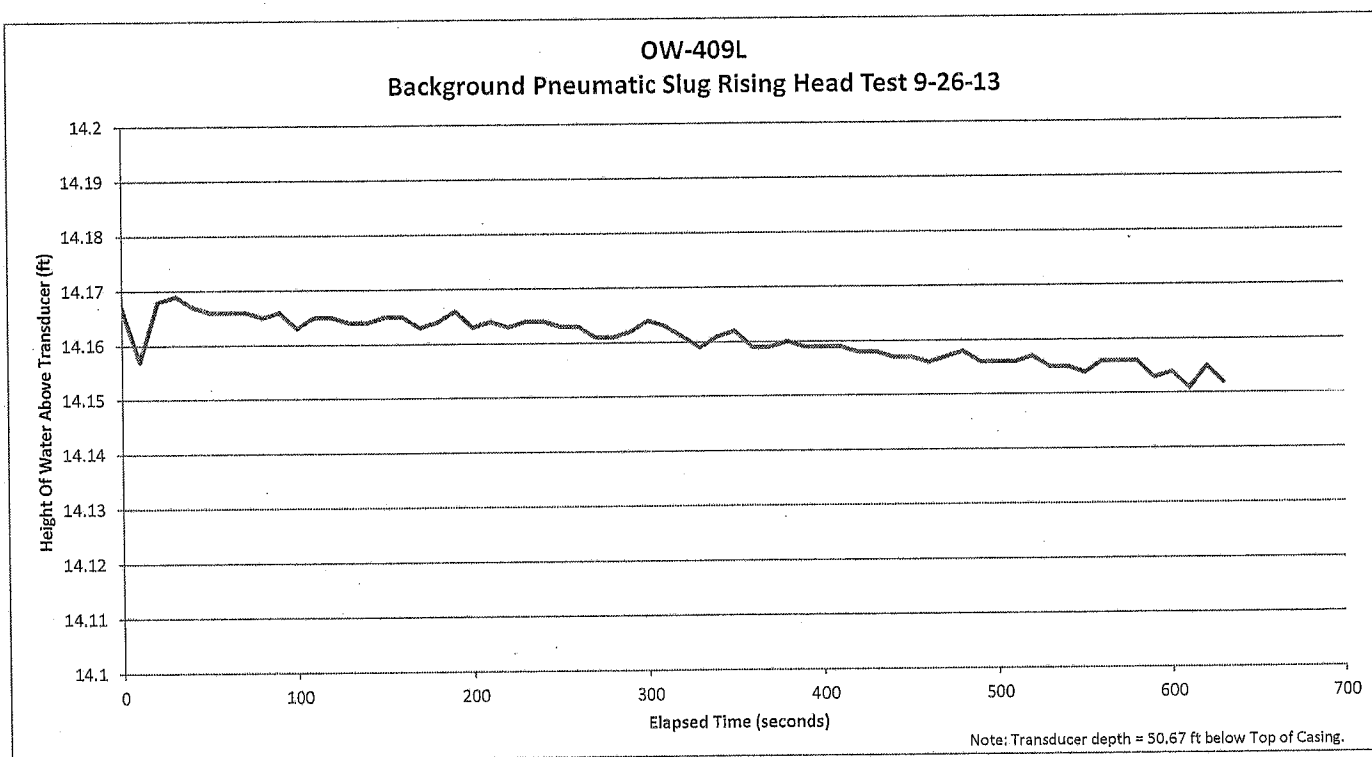
Static Water Level Elevation (NAVD88) collected December 9, 2013: 779.22

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE

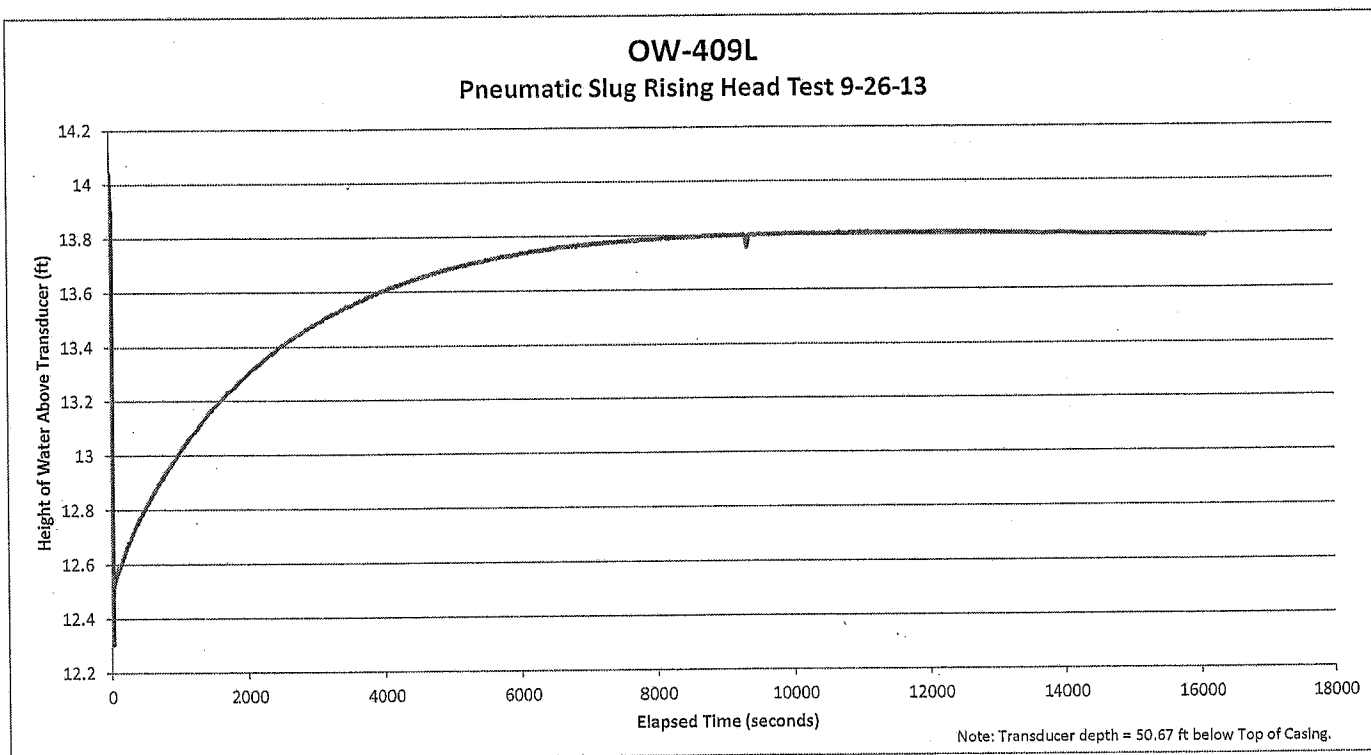




Prepared by/Date: KHL 1/12/14

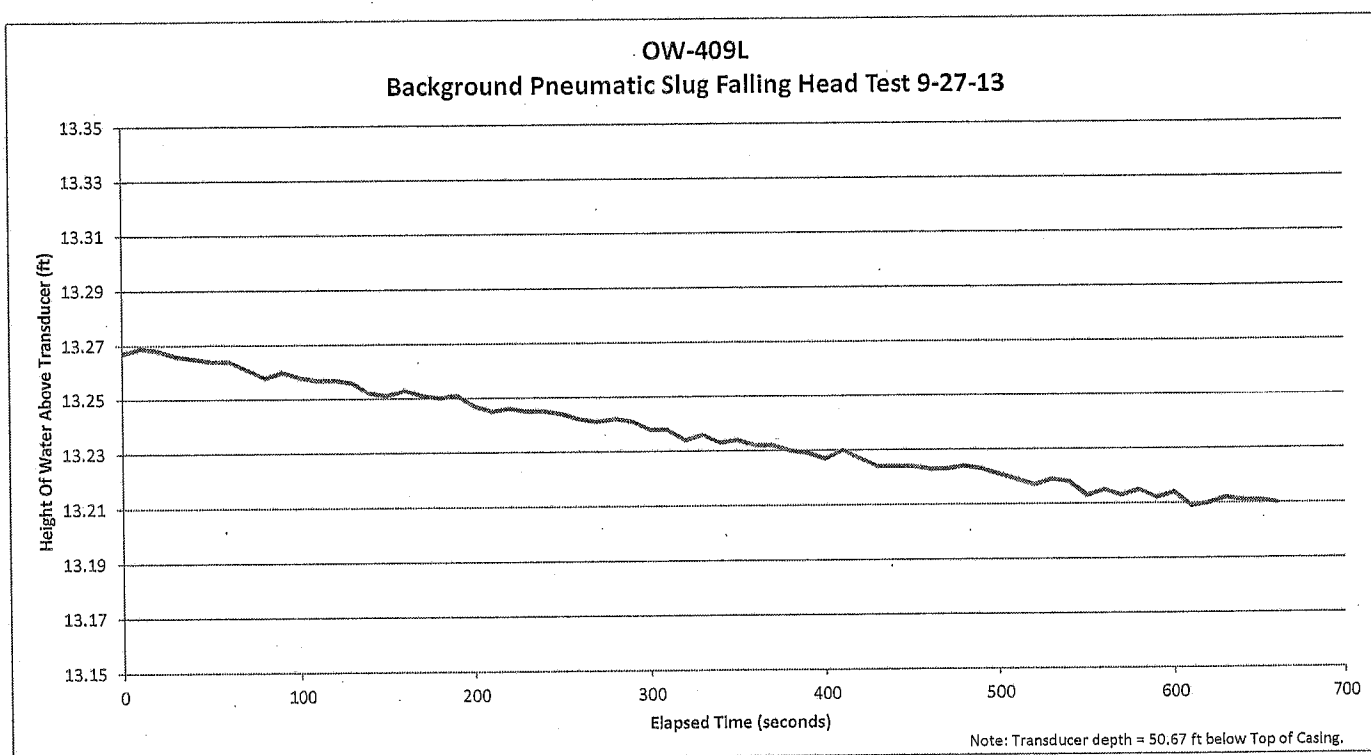
Checked by/Date: JOE 1/16/14





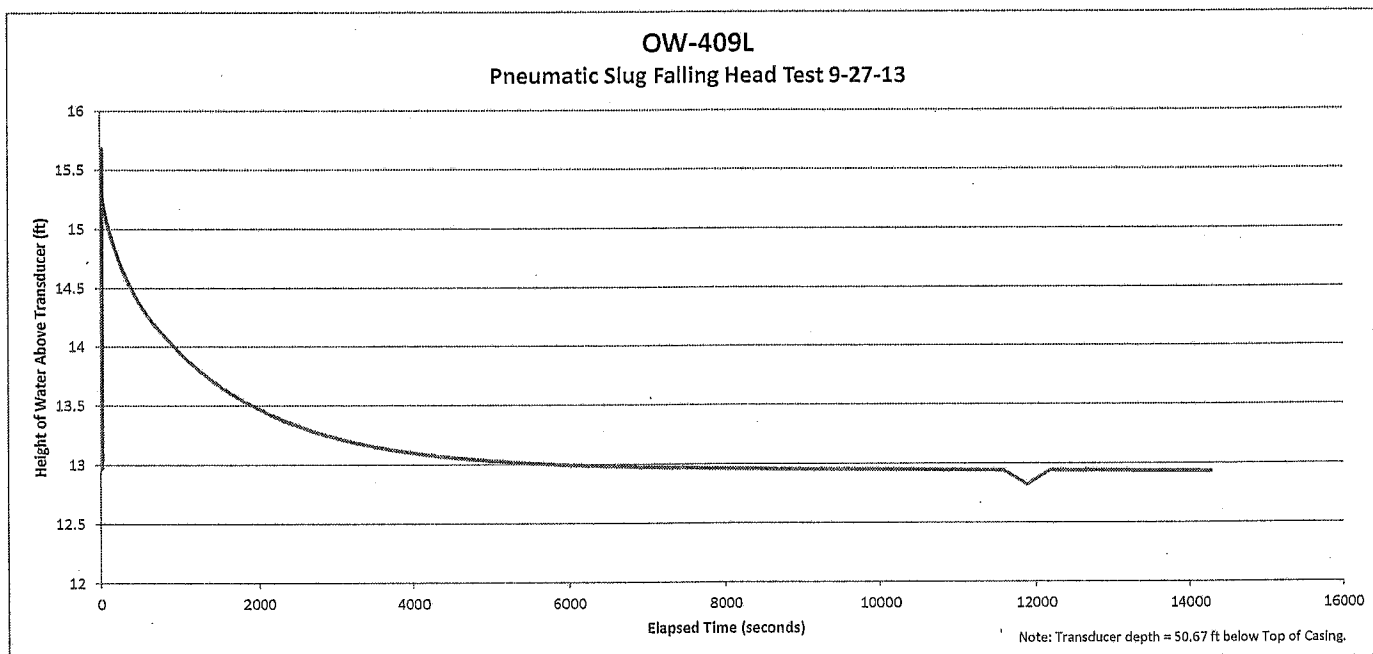
Prepared by/Date: ZAY 1/10/14

Checked by/Date: [Signature] 1/11/14



Prepared by/Date: KHL 1/10/14

Checked by/Date: JG 1/10/14



Prepared by/Date: KHL 1/10/14

Checked by/Date: JL 7/11/18

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-415U**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Solid**

**Test Dates: 9/30/2013**

Well Construction Diagram

Plots:

- Background water level for falling head test
- Falling head test
- Background water level for rising head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 415UBF 2013-09-30 12.52.31 (contains background data for falling head test)
- 415UF 2013-09-30 13.06.13 (contains test data for falling head test)
- 415UBR 2013-09-30 13.29.17 (contains background data for rising head test)
- 415UR 2013-09-30 13.30.44 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 29.12 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAL 1/10/14

Checked by/Date: JS 7/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-415U

Date of Observation Well Installation: 7/31/13

Date of Well Development: 8/16/13

Observation Well Northing: 569590.2 US ft Easting: 2448180.2 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: N. Dempsey (TSD)

## NOTES:

License No.: TN #936

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizer installed at approximately 25.0 feet below ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/15/2013 through 8/16/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

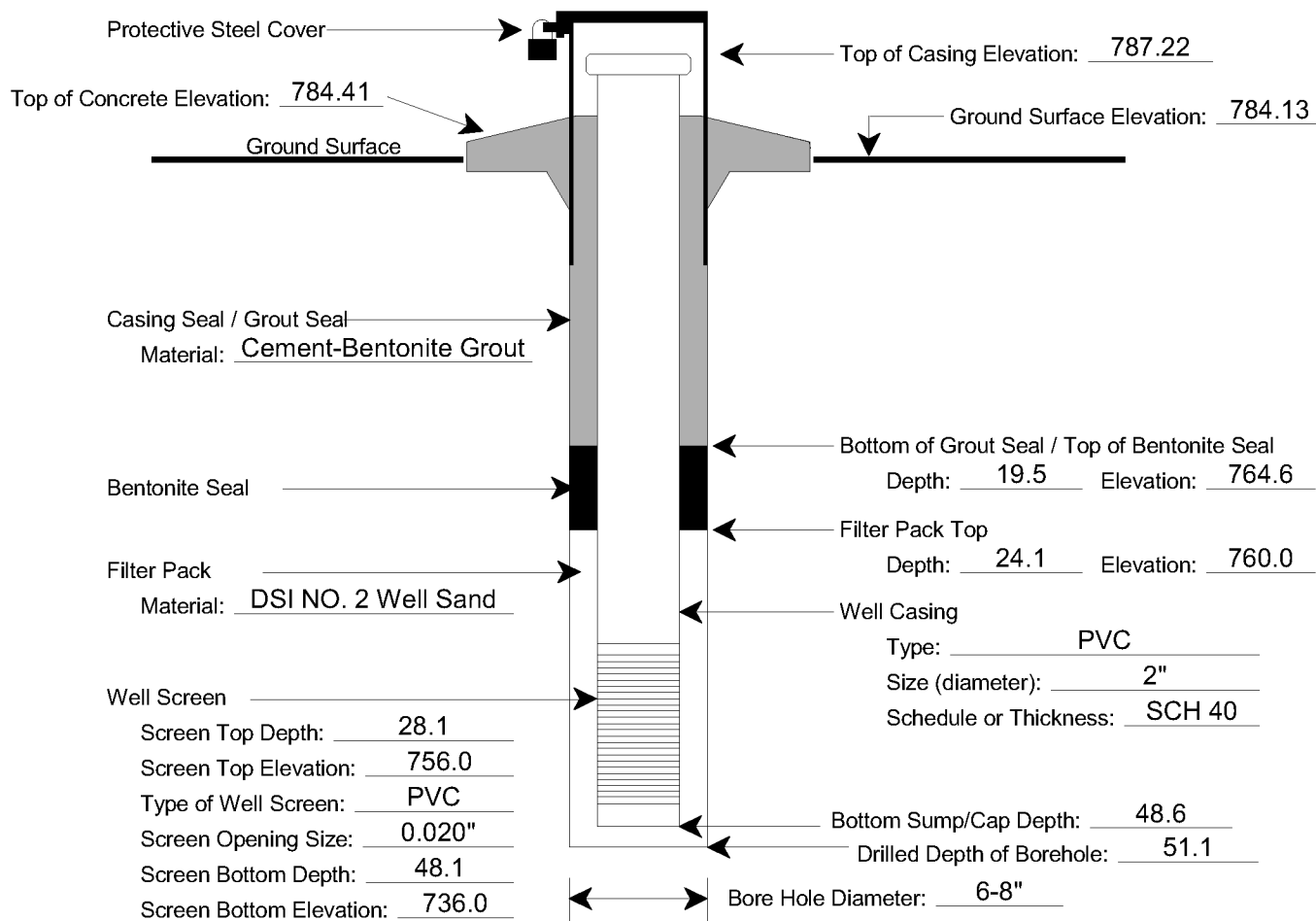
AMEC Inspector Supervising Well Installation: J. Hensberry

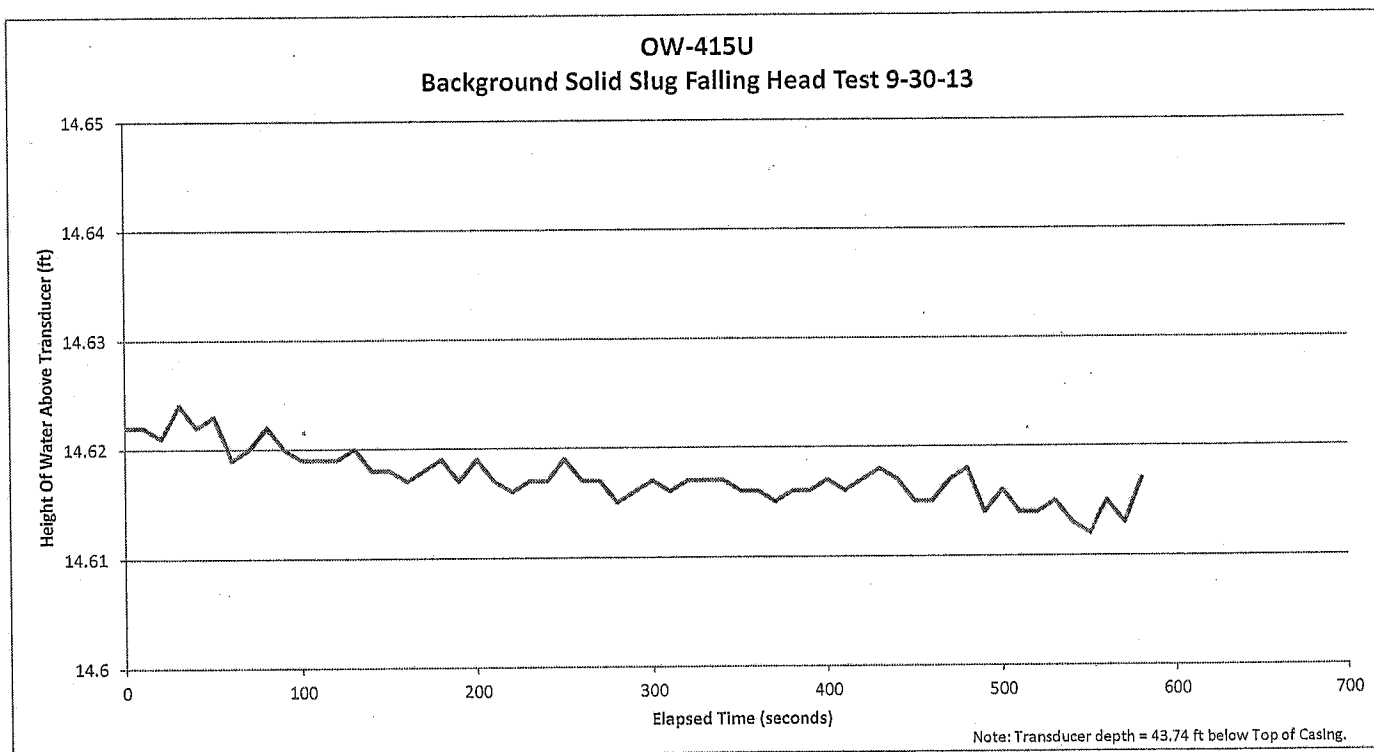
Static Water Level Elevation (NAVD88) collected December 9, 2013: 772.02

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE

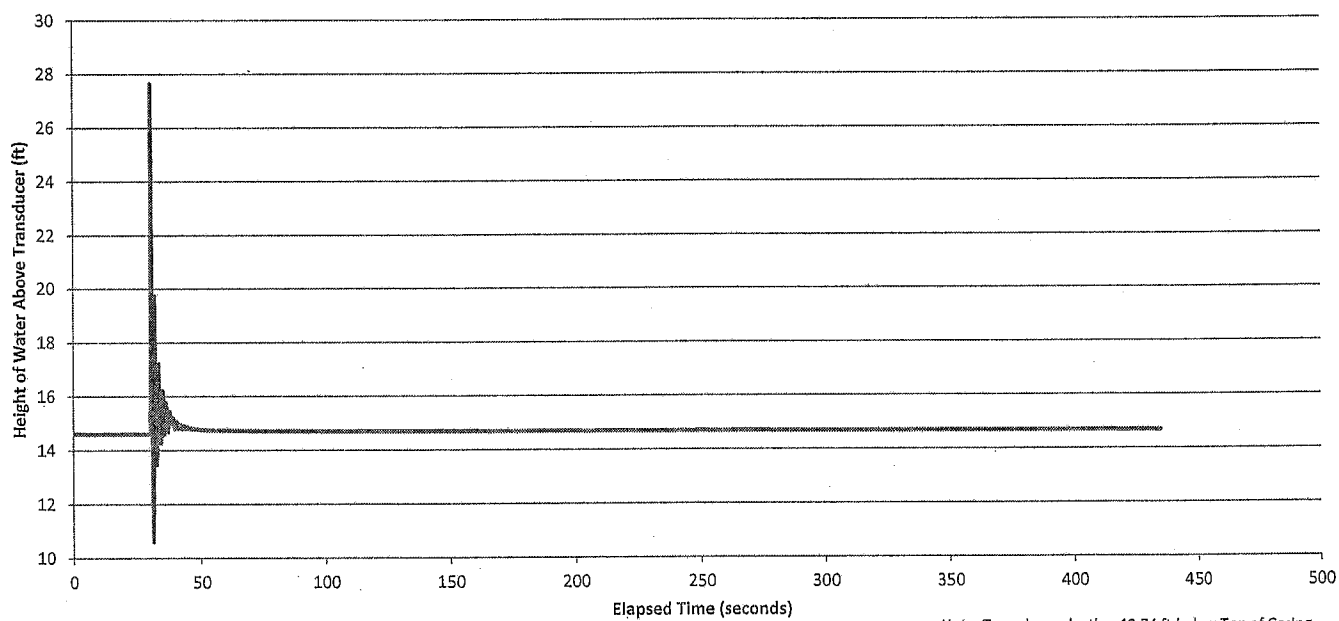




Prepared by/Date: ICW 1/10/14

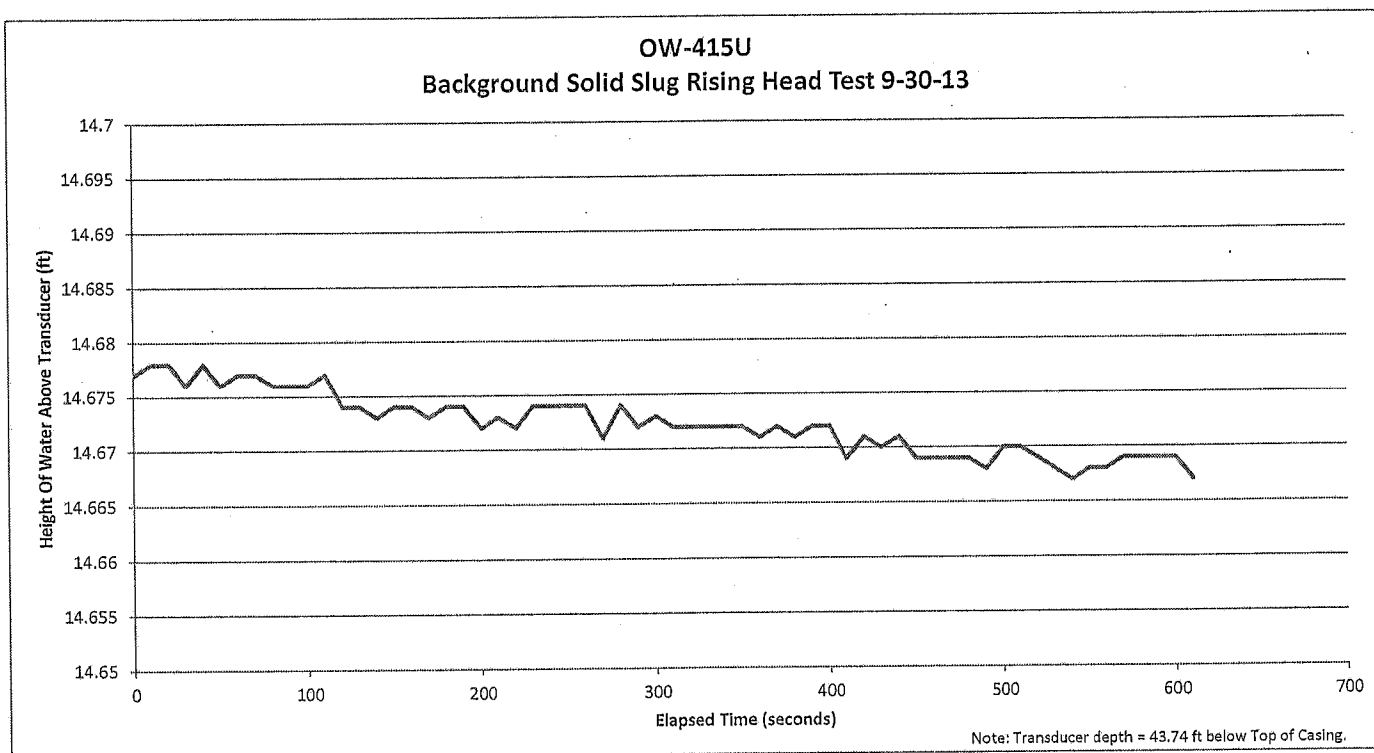
Checked by/Date: JS 1/11/14

**OW-415U**  
**Solid Slug Falling Head Test 9-30-13**



Prepared by/Date: KHL 1/10/14

Checked by/Date: JAS 1/10/14

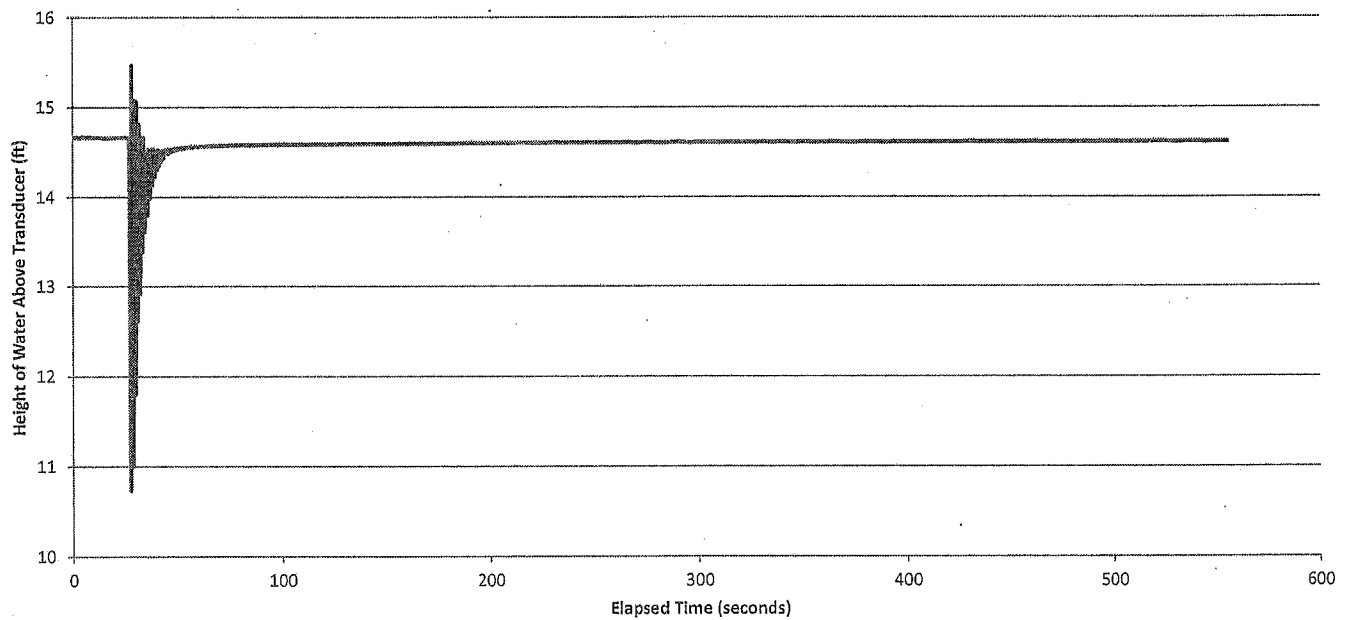


Prepared by/Date: 1/10/14 KAL

Checked by/Date: JAL 1/10/14



OW-415U  
Solid Slug Rising Head Test 9-30-13



Note: Transducer depth = 43.74 ft below Top of Casing.

Prepared by/Date: KHL 1/10/14

Checked by/Date: [Signature] 1/10/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-415L**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/18/2013**

**Well Construction Diagram**

**Plots:**

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 415LBR 2013-09-18 14.20.11 (contains background and pressurization/equalization data for rising head test)
- 415LR 2013-09-18 16.58.42 (contains test data for rising head test)
- 415LBF 2013-09-18 16.57.05 (contains background and vacuum/equalization data for falling head test)
- 415LF 2013-09-18 18.57.49 (contains test data for falling head test)

**Notes:**

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 31.41 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KH 1/10/14

Checked by/Date: [Signature] 1/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-415L

Date of Observation Well Installation: 7/25/13

Date of Well Development: 9/11/13

Observation Well Northing: 569564.4 US ft Easting: 2448148.1 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: N. Dempsey (TSD)

## NOTES:

License No.: TN #936

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/4/2013 through 9/11/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

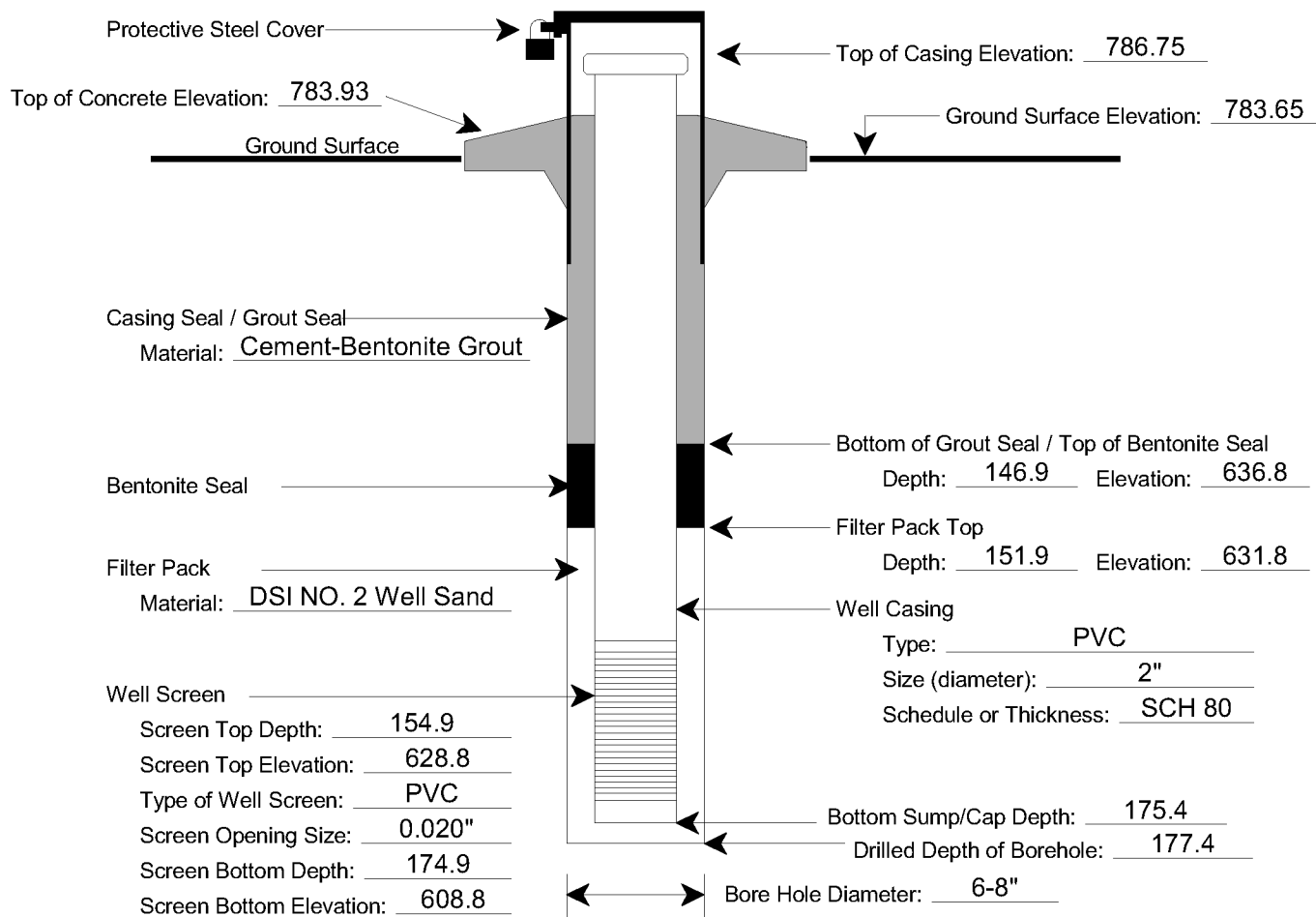
AMEC Inspector Supervising Well Installation: J. Hensberry

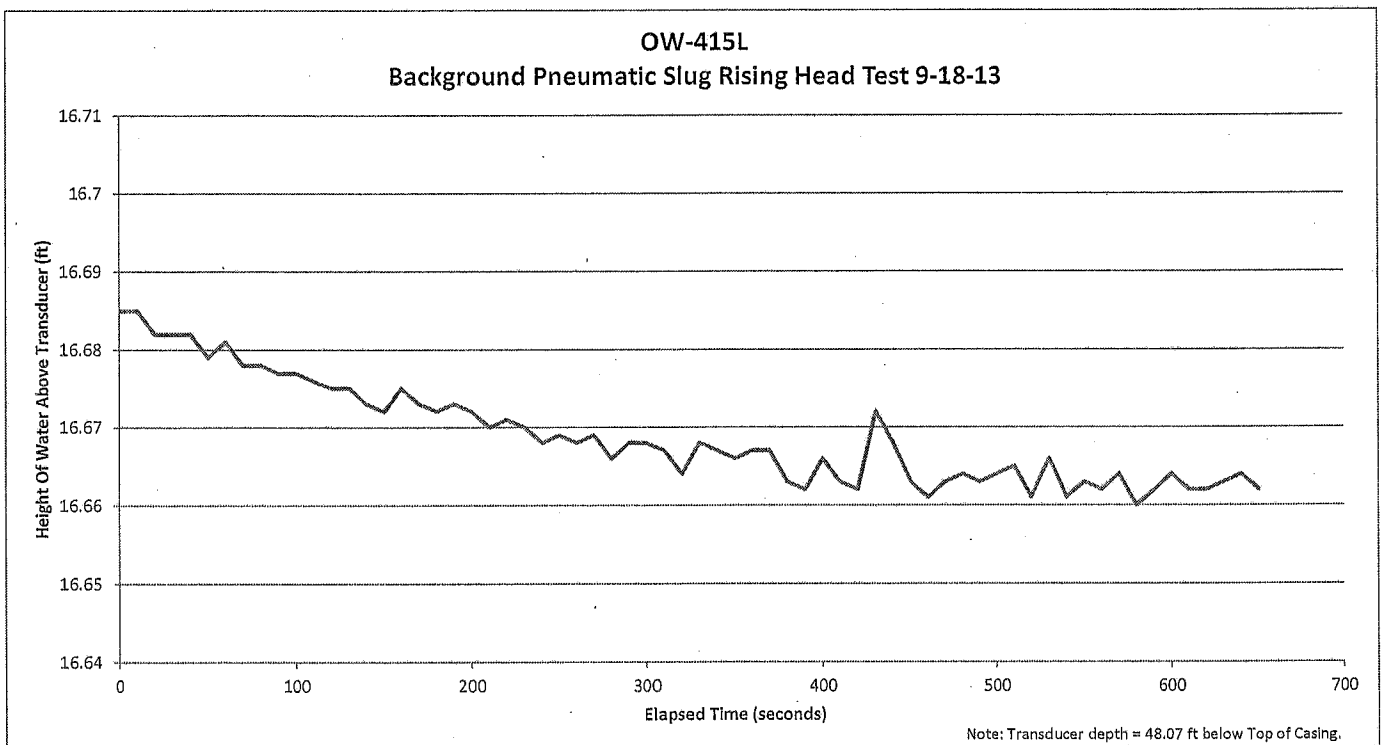
Static Water Level Elevation (NAVD88) collected December 9, 2013: 771.91

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE

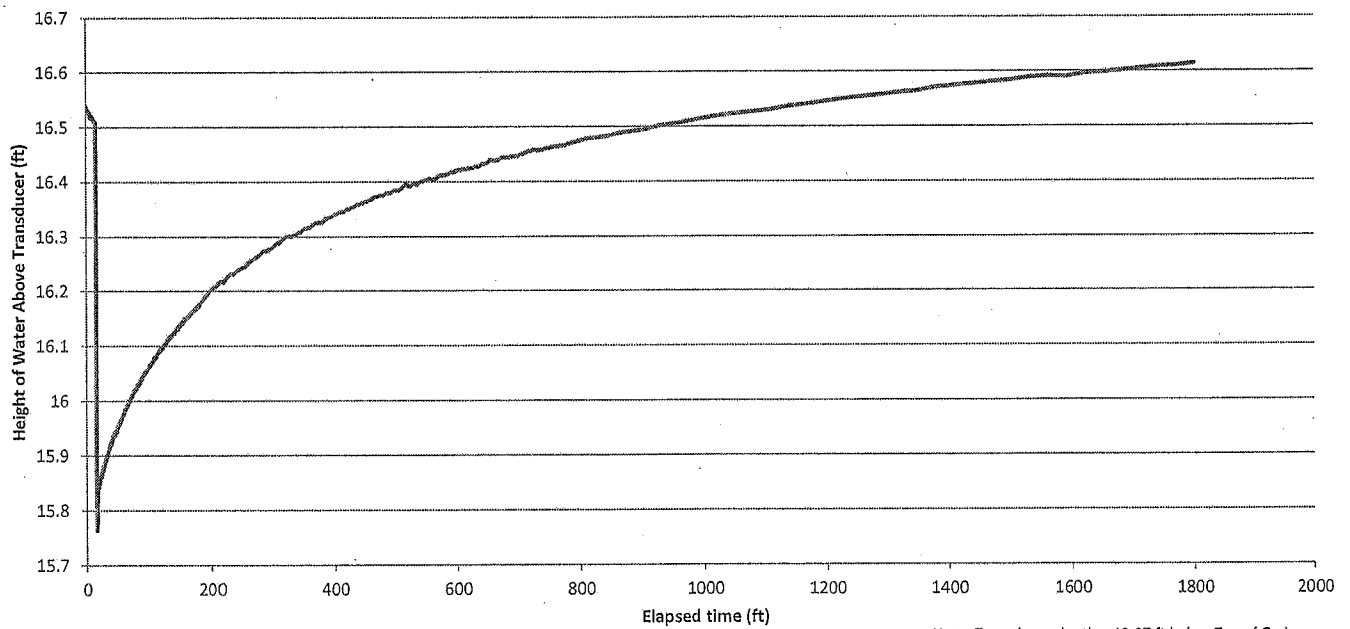




Prepared by/Date: KHL 1/10/14

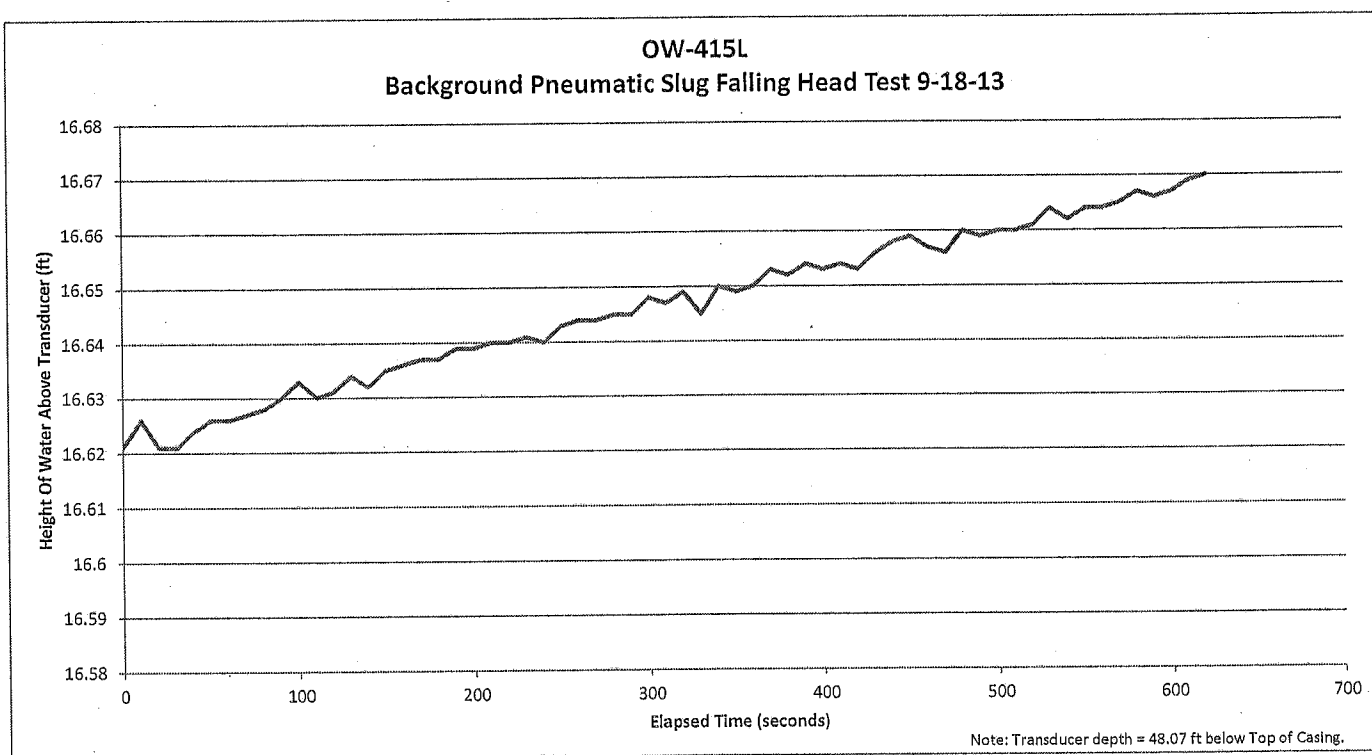
Checked by/Date: [Signature] 1/10/14

OW-415L  
Pneumatic Slug Rising Head Test 9-18-13



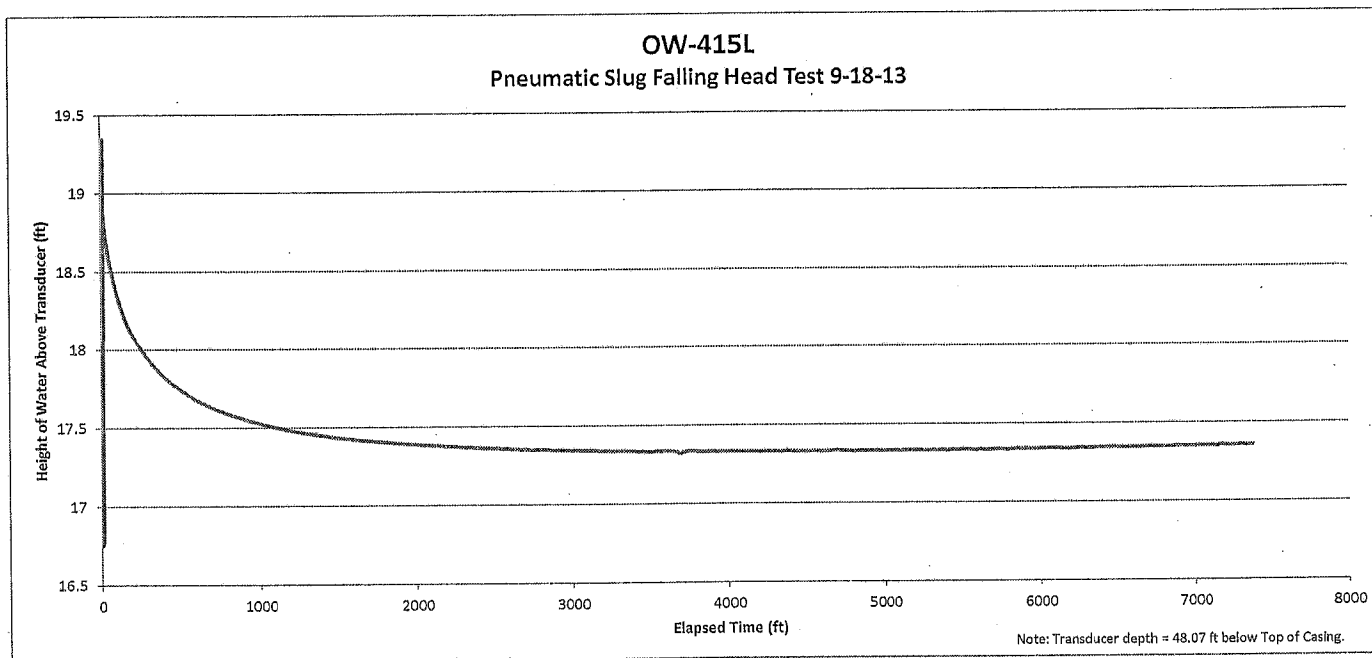
Prepared by/Date: KWL 1/10/14

Checked by/Date: GR 1/11/14



Prepared by/Date: KHL 1/10/14

Checked by/Date: JW 7/11/14



Prepared by/Date: KAL 1/10/14

Checked by/Date: [Signature] 1/14/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-416U**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/30/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 416UBR 2013-09-30 14.38.30 (contains background and pressurization/equalization data for rising head test)
- 416UR 2013-09-30 16.29.48 (contains test data for rising head test)
- 416UBF 2013-09-30 14.26.11 (contains background and vacuum/equalization data for falling head test)
- 416UF 2013-09-30 14.24.55 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 72.34 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAC 1/10/14

Checked by/Date: JS 1/11/14



# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-416U

Date of Observation Well Installation: 8/17/13

Date of Well Development: 9/11/13

Observation Well Northing: 569990.0 US ft Easting: 2447535.9 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: N. Dempsey (TSD)

## NOTES:

License No.: TN #936

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/10/2013 through 9/11/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

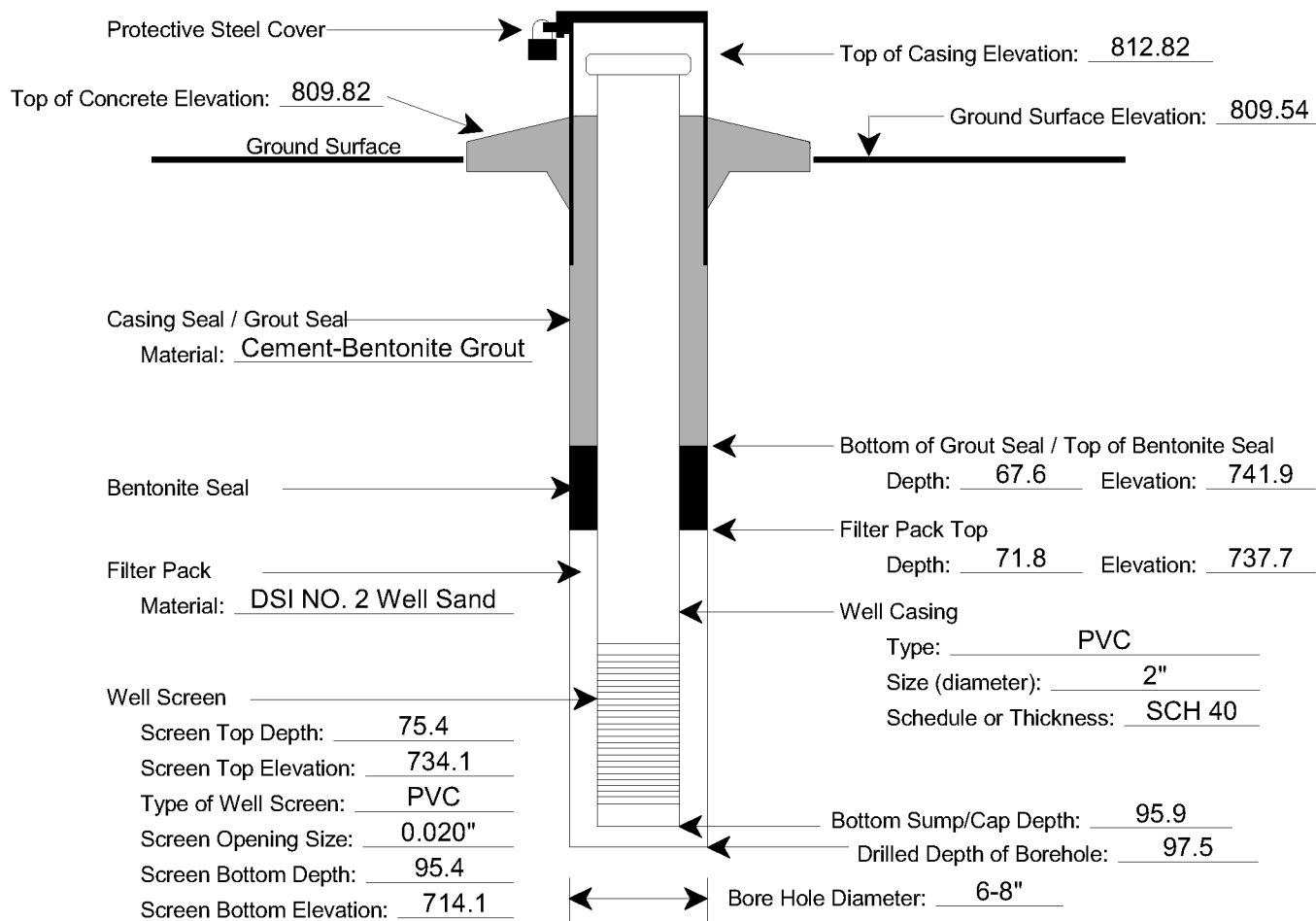
AMEC Inspector Supervising Well Installation: J. Hensberry

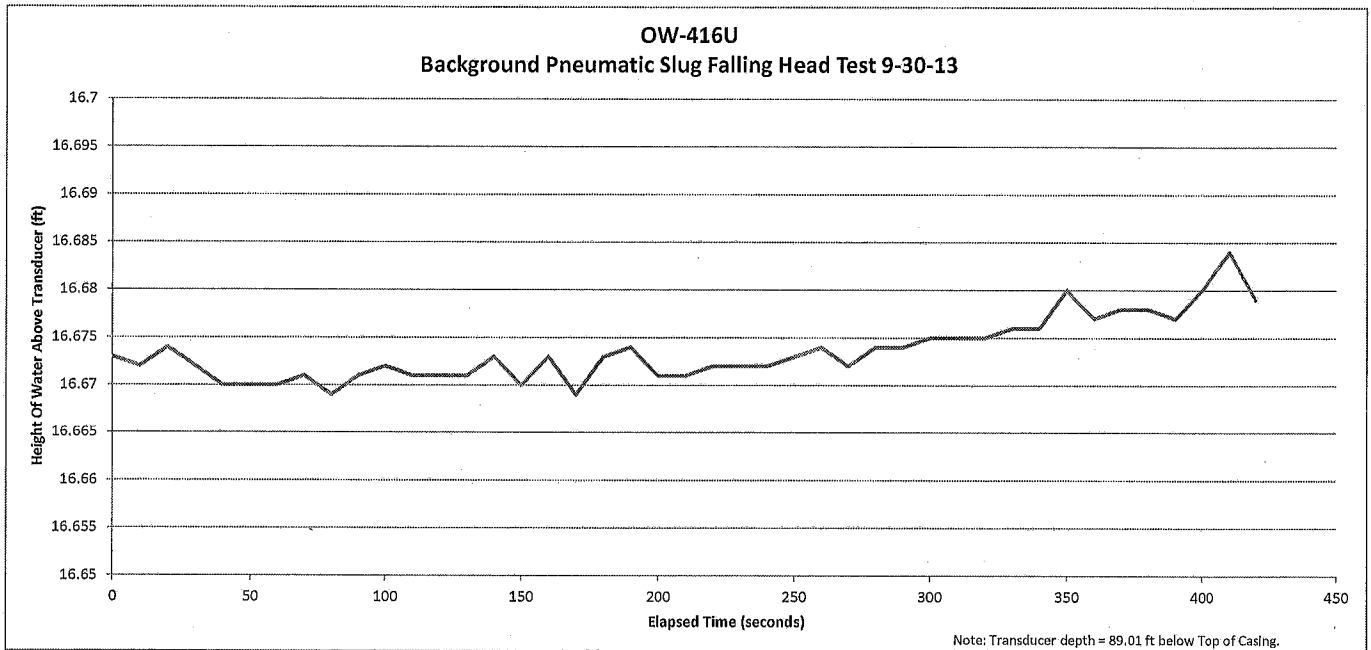
Static Water Level Elevation (NAVD88) collected December 9, 2013: 745.93

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

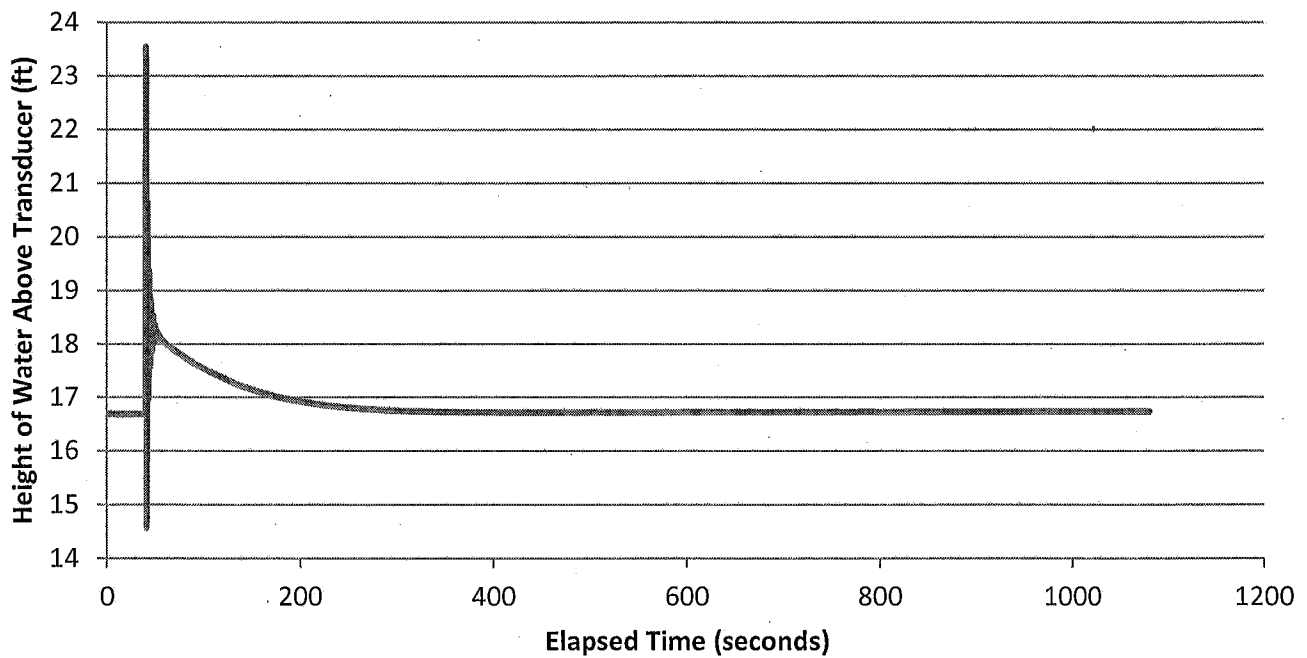
DIAGRAM NOT TO SCALE





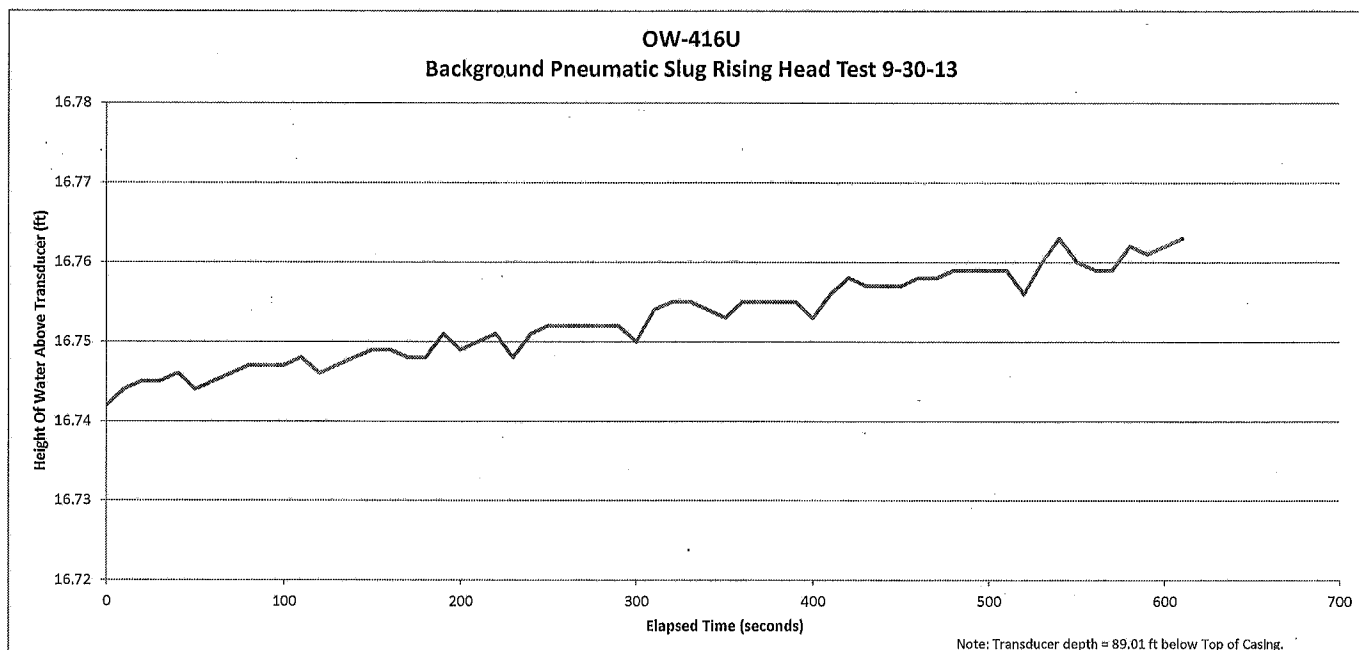
Prepared by: Joe Date: 2/25/14  
Checked by: PA Date: 3/5/14

**OW-416U**  
**Pneumatic Slug Falling Head Test 9-30-13**



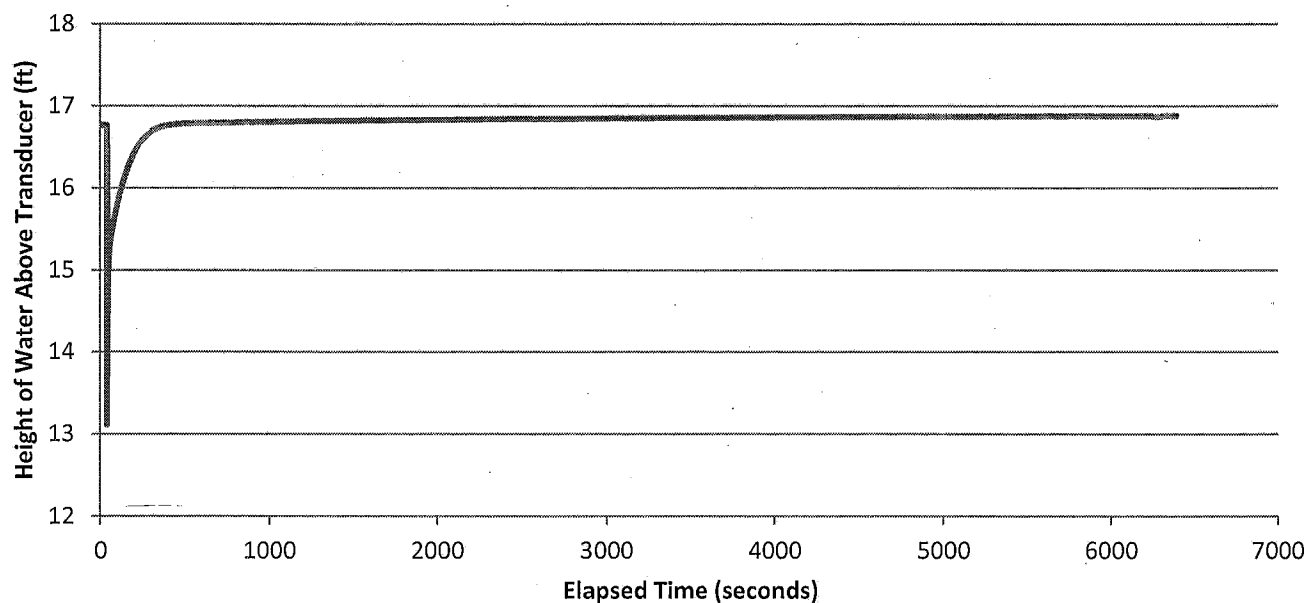
Note: Transducer depth = 89.0 ft below Top of Casing.

Prepared by: JAR Date: 2/25/14  
Checked by: ASA Date: 3/5/14



Prepared by: JP Date: 2/25/14  
Checked by: CSA Date: 3/5/14

**OW-416U**  
**Pneumatic Slug Rising Head Test 9-30-13**



Note: Transducer depth = 89.0 ft below Top of Casing.

Prepared by: JS Date: 2/25/14  
Checked by: JS Date: 3/5/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-416L**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/29/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 416LBR 2013-09-29 11.53.19 (contains background and pressurization/equalization data for rising head test)
- 416LR 2013-09-29 12.02.29 (contains test data for rising head test)
- 416LBF 2013-09-29 12.38.02 (contains background and vacuum/equalization data for falling head test)
- 416LF 2013-09-29 12.57.07 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 72.08 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KHL 1/15/14

Checked by/Date: JCW 1/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-416L

Date of Observation Well Installation: 8/16/13

Date of Well Development: 9/12/13

Observation Well Northing: 569965.2 US ft Easting: 2447504.9 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: N. Dempsey (TSD)

## NOTES:

License No.: TN #936

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/11/2013 through 9/12/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

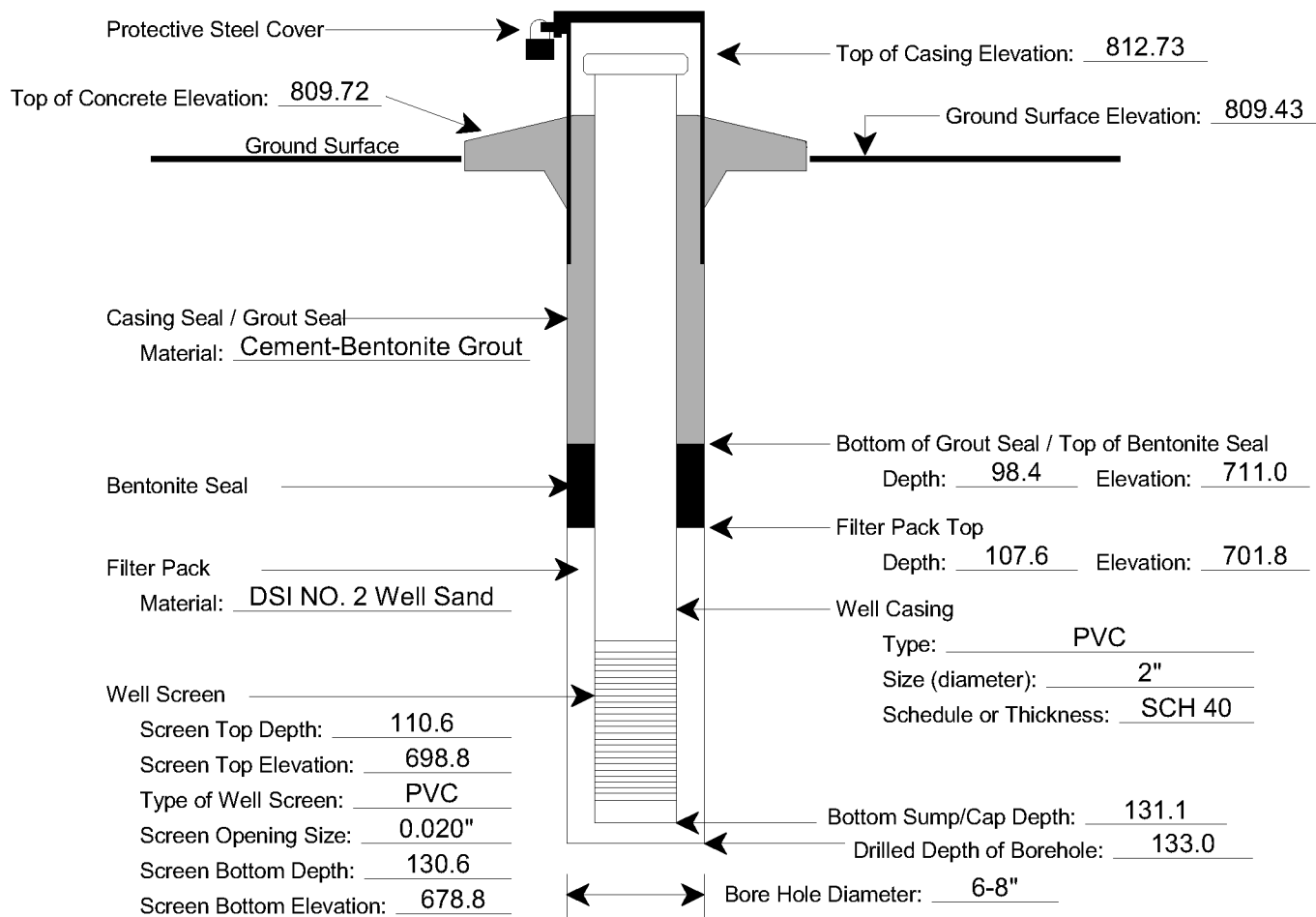
AMEC Inspector Supervising Well Installation: J. Hensberry

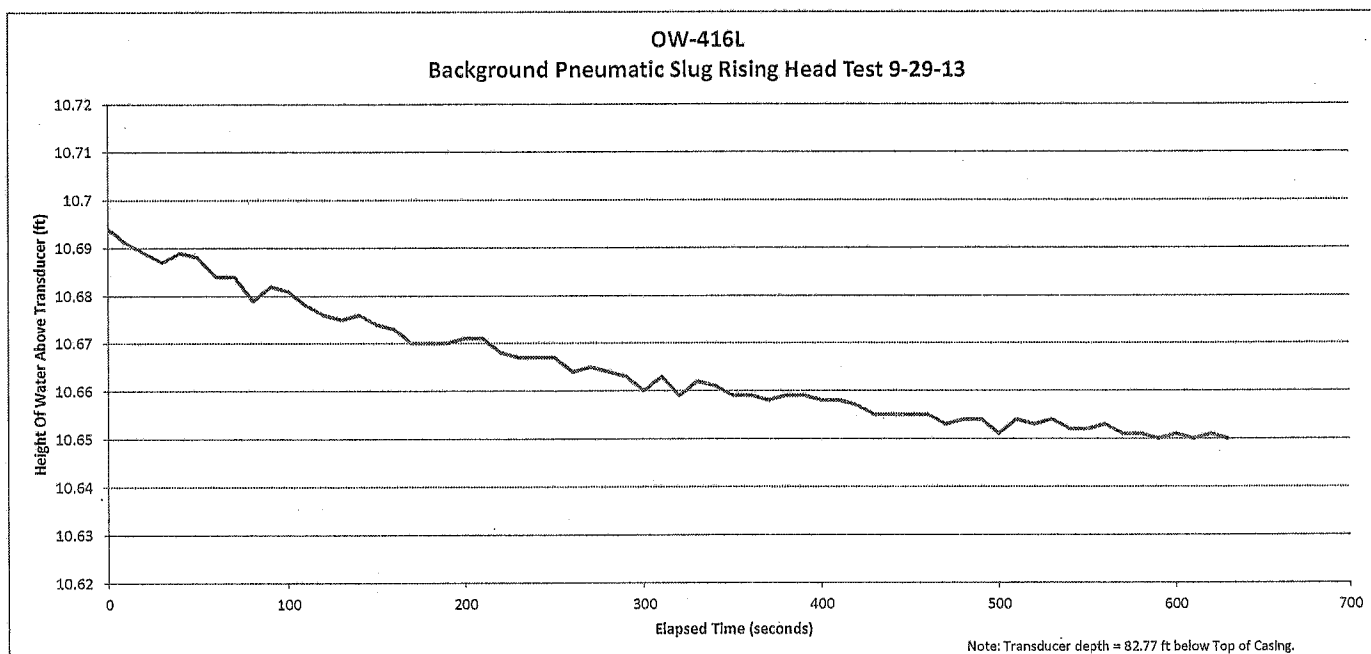
Static Water Level Elevation (NAVD88) collected December 9, 2013: 745.56

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE

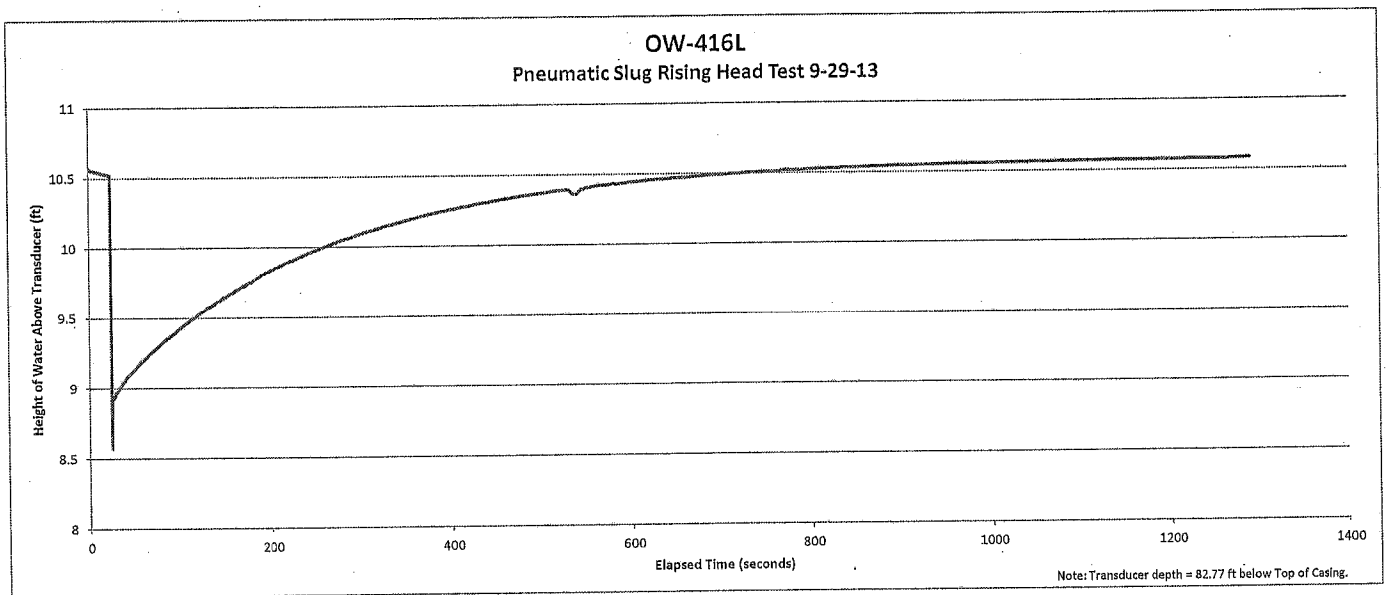




Prepared by/Date: KAC 1/10/14

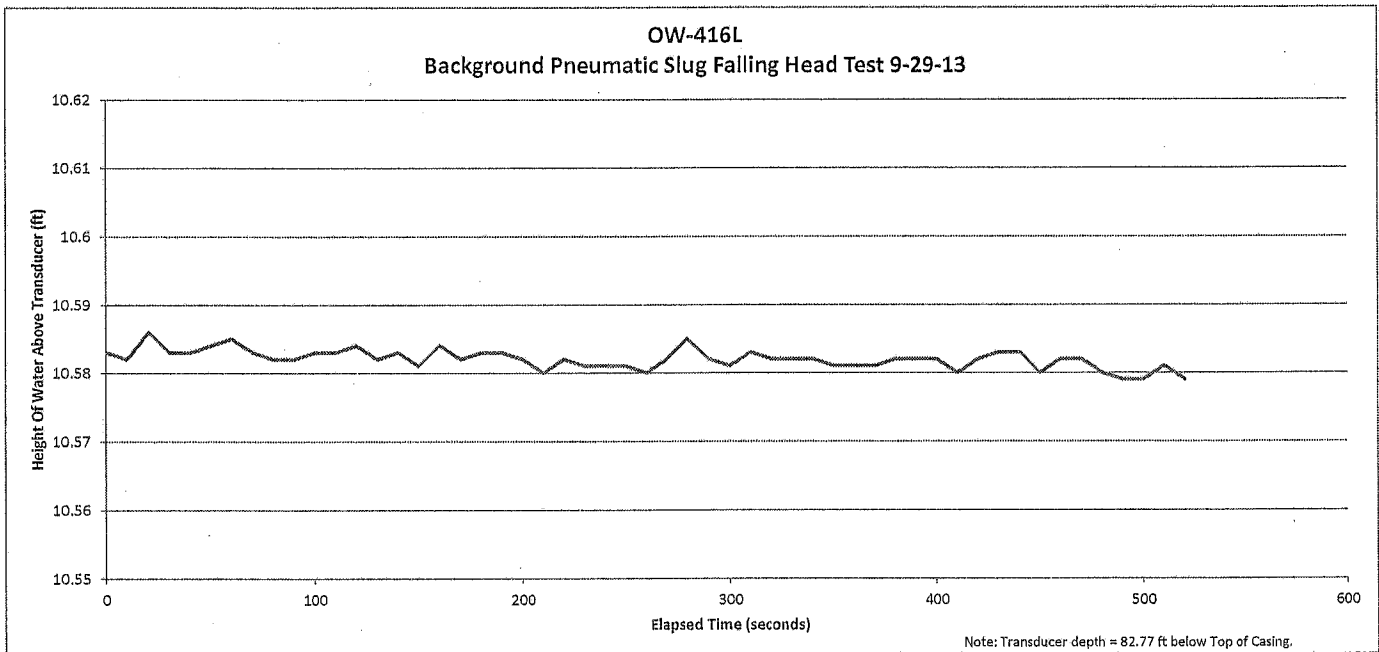
Checked by/Date: GAJ 1/11/14





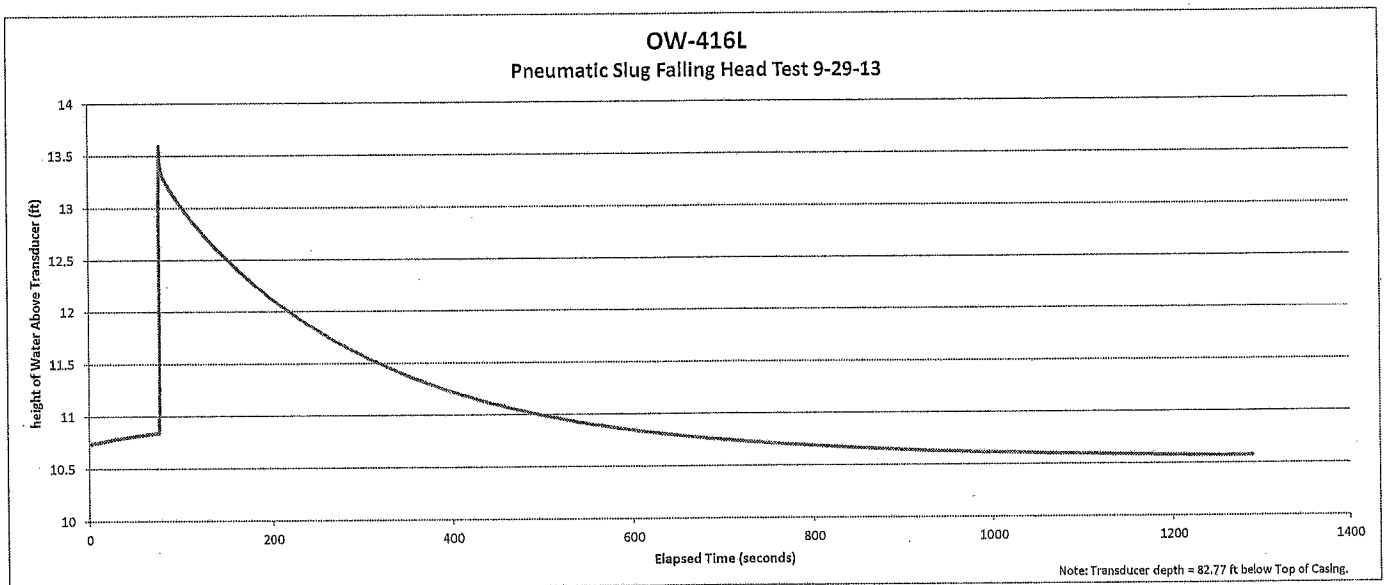
Prepared by/Date: KW 1/10/14

Checked by/Date: JW 1/11/14



Prepared by/Date: KHC 1/10/14

Checked by/Date: JOJ 1/11/14



Prepared by/Date: KH 1/10/14  
Checked by/Date: JG 1/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-417U**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/19/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 417UBR 2013-09-19 09.49.25 (contains background and pressurization/equalization data for rising head test)
- 417UR 2013-09-19 09.46.58 (contains test data for rising head test)
- 417UBF 2013-09-19 10.28.19 (contains background and vacuum/equalization data for falling head test)
- 417UF 2013-09-19 10.41.42 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 28.02 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAL 1/10/14

Checked by/Date: [Signature] 1/14/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-417U

Date of Observation Well Installation: 8/8/13

Date of Well Development: 8/17/13

Observation Well Northing: 569927.1 US ft Easting: 2446646.9 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted on 8/17/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

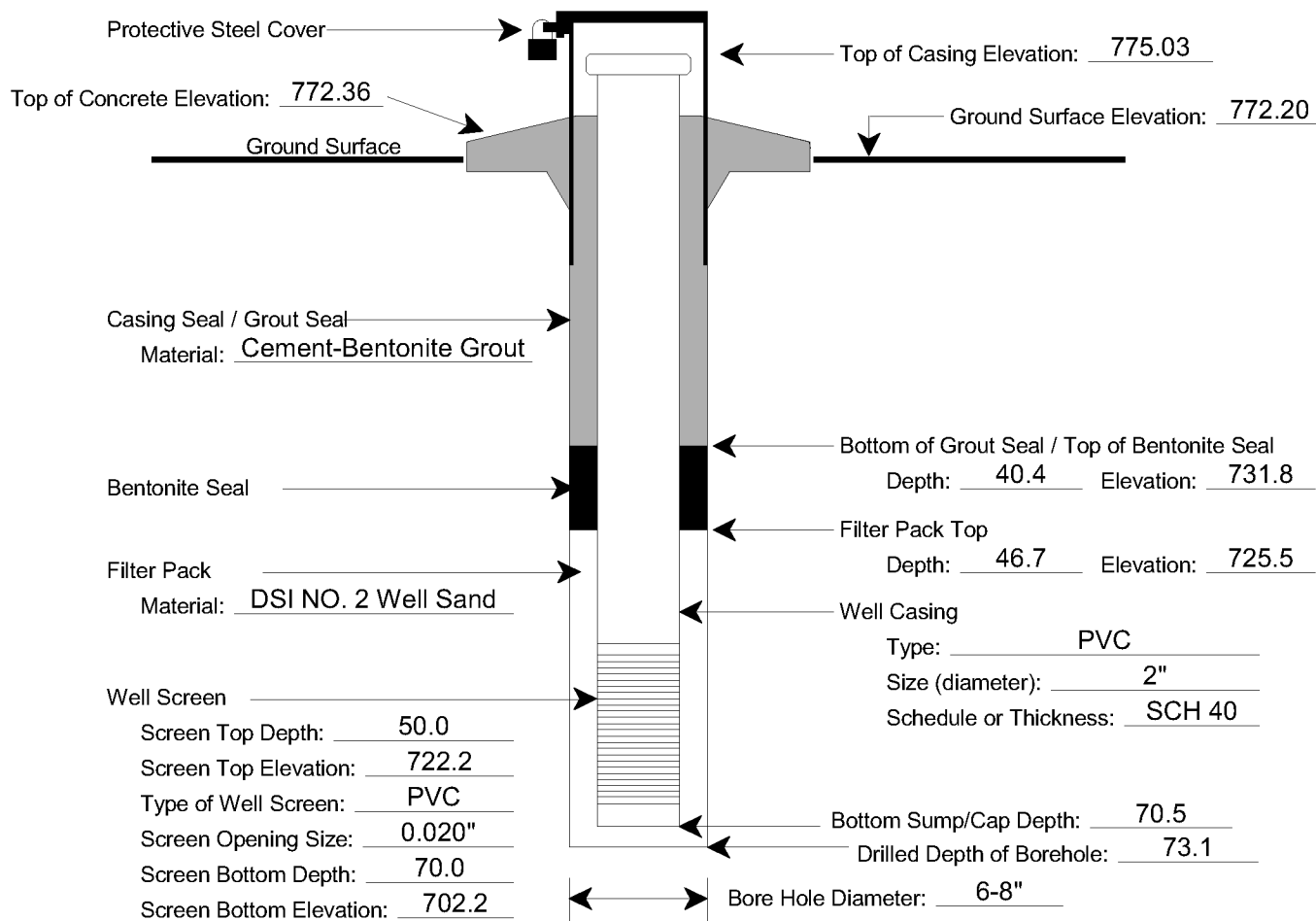
AMEC Inspector Supervising Well Installation: J. Goddard

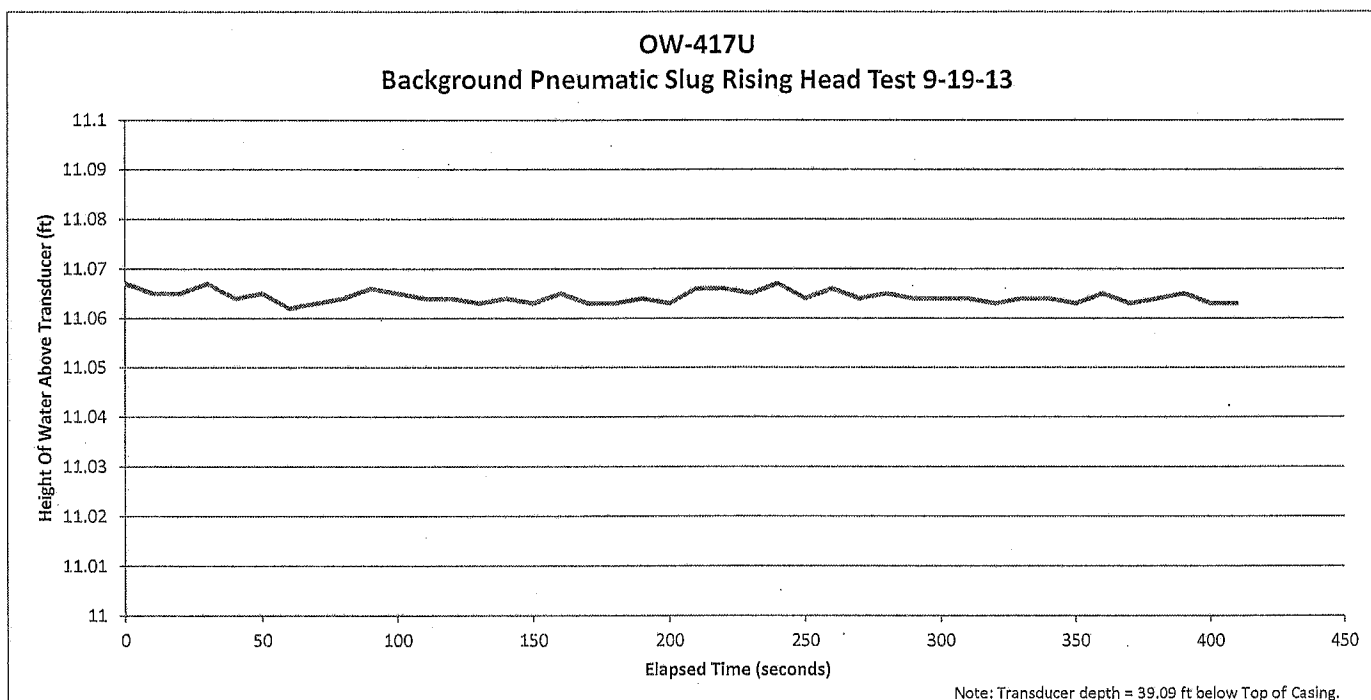
Static Water Level Elevation (NAVD88) collected December 9, 2013: 748.15

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

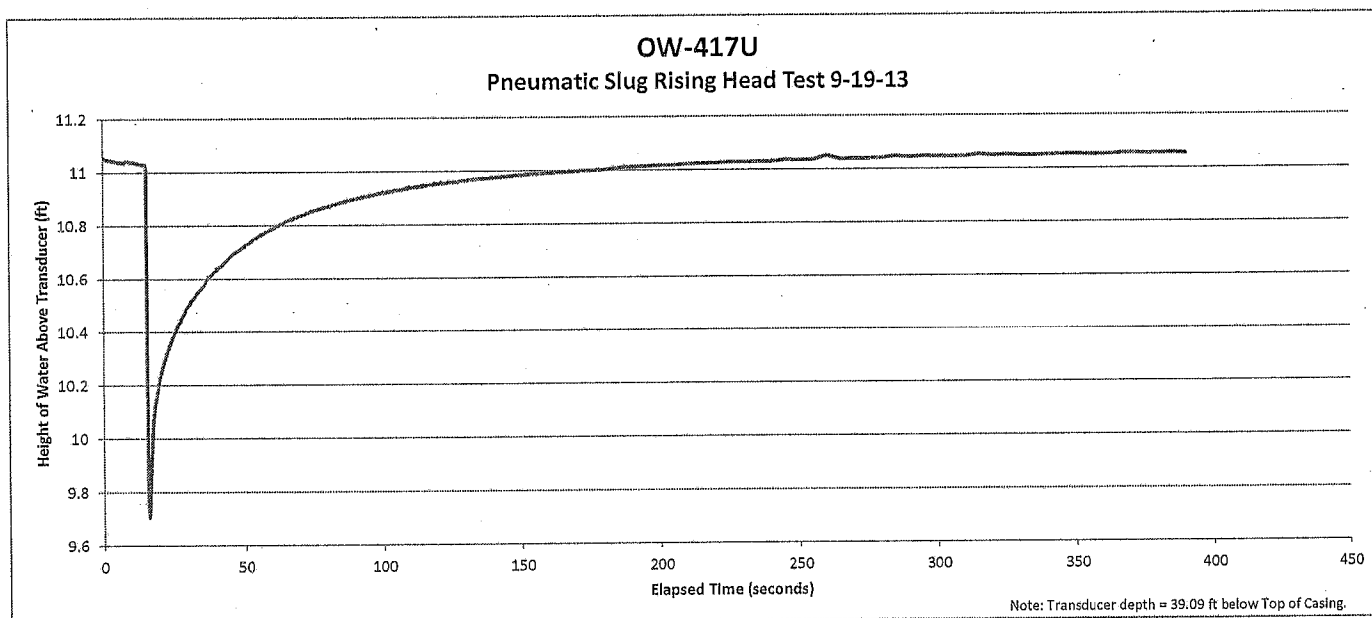
DIAGRAM NOT TO SCALE



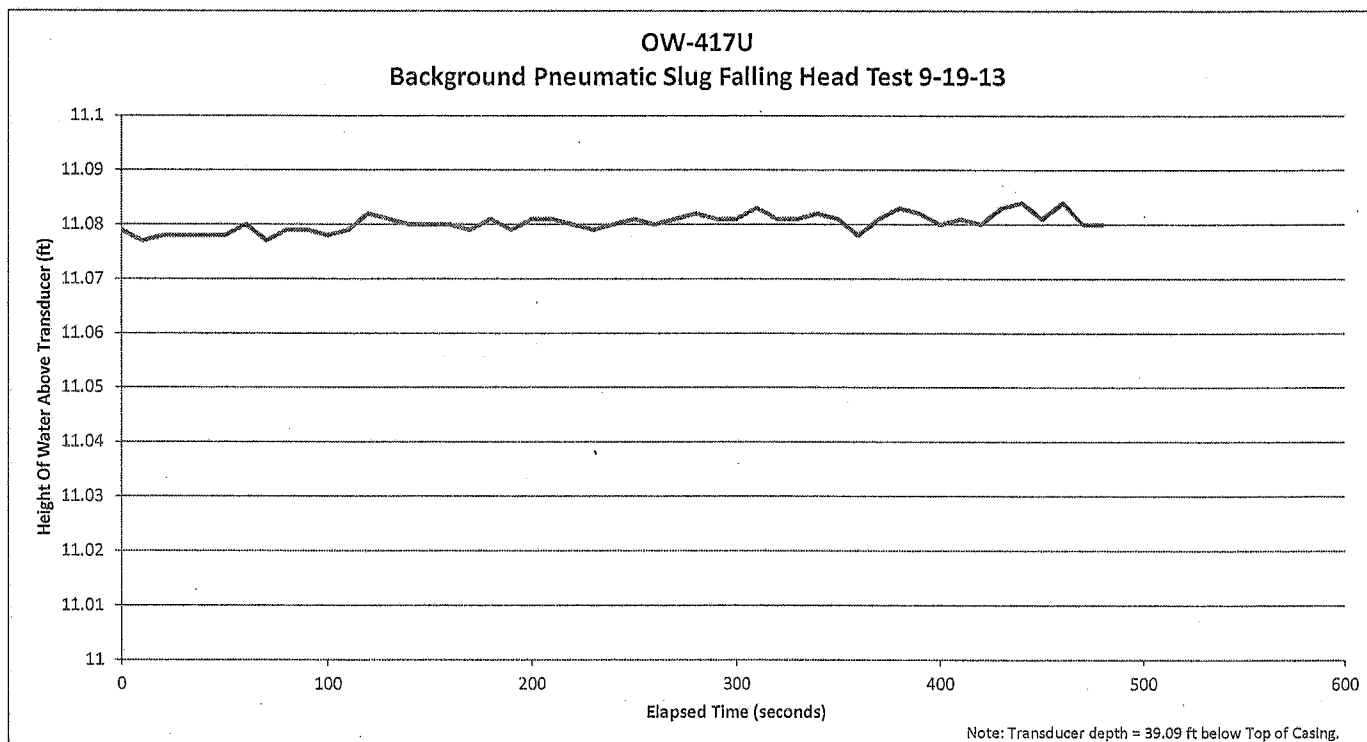


Prepared by/Date: LAL 1/10/14

Checked by/Date: [Signature] 1/11/14

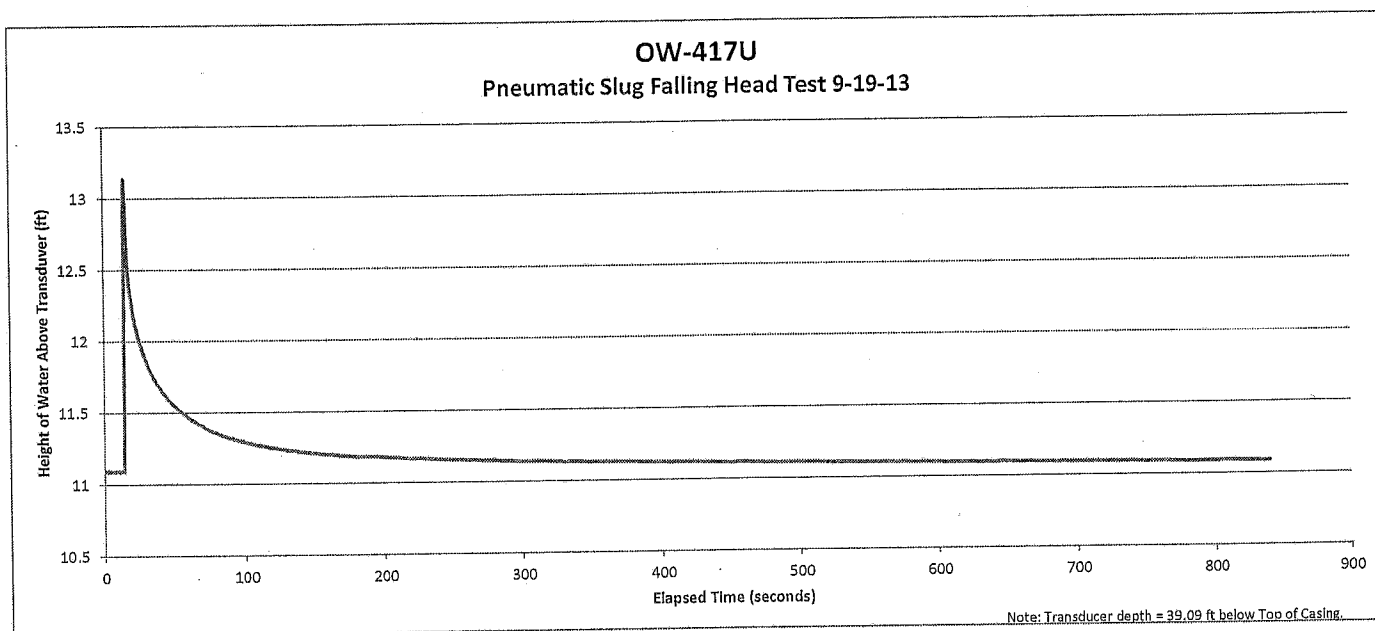


Prepared by/Date: KAL 1/10/14  
Checked by/Date: JAG 1/11/14



Prepared by/Date: KAL 1/10/14  
Checked by/Date: JG 1/14





Prepared by/Date: KHL 1/10/14

Checked by/Date: JAS/1/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-417L  
Test Method: ASTM D 4044-96 (2008), Sections 8 and 9  
Test Type: Pneumatic  
Test Dates: 9/19/2013; 9/24/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 417LBR 2013-09-19 11.48.42 (contains background and pressurization/equalization data for rising head test)
- 417LR 2013-09-19 11.47.28 (contains test data for rising head test)
- 417LBF 2013-09-24 13.21.32 (contains background and vacuum/equalization data for falling head test)
- 417LF 2013-09-24 16.33.12 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 25.04 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAL 1/10/14

Checked by/Date: [Signature] 1/10/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-417L

Date of Observation Well Installation: 8/7/13

Date of Well Development: 8/27/13

Observation Well Northing: 569903.0 US ft Easting: 2446614.6 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/16/2013 through 8/27/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

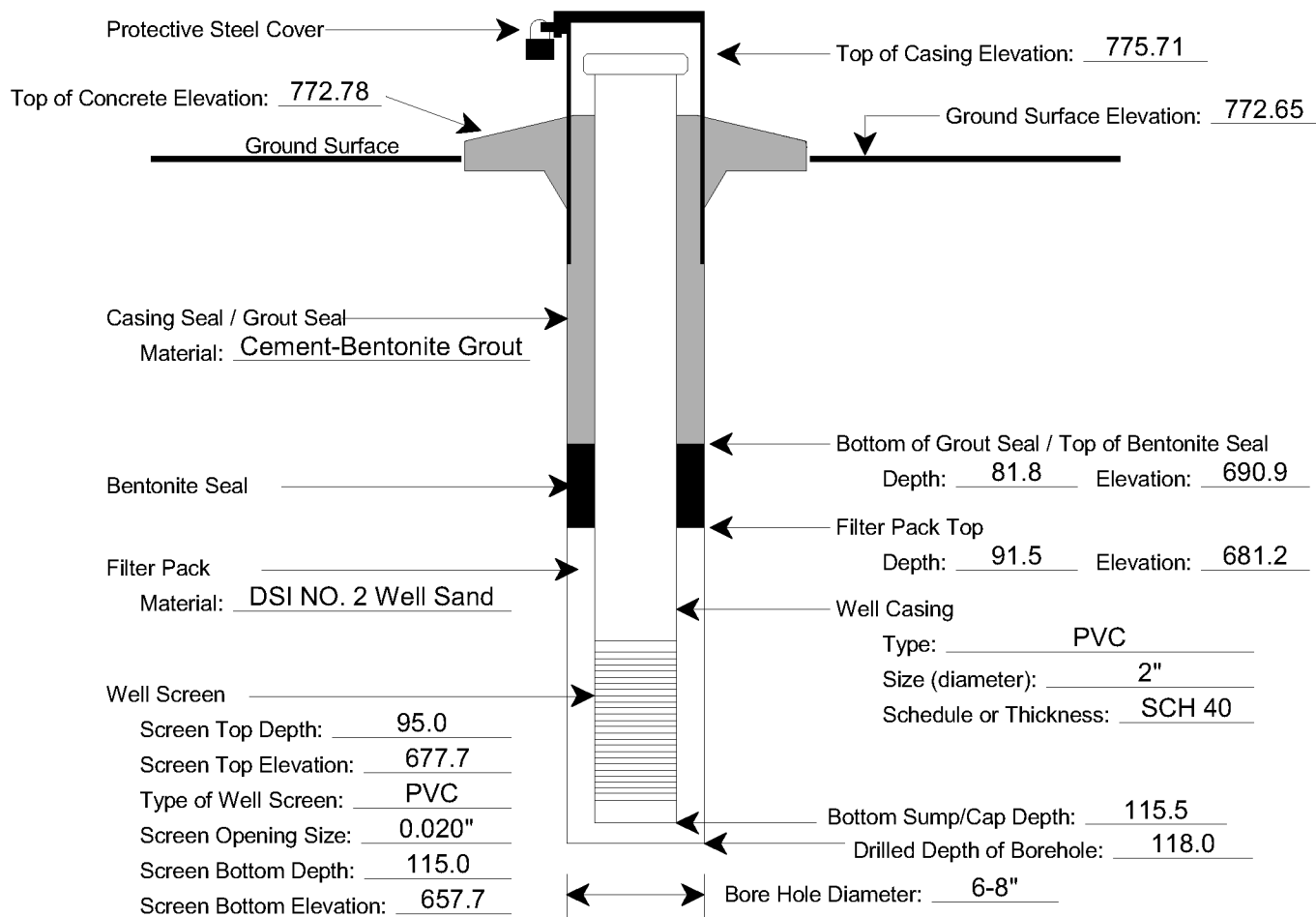
AMEC Inspector Supervising Well Installation: J. Goddard

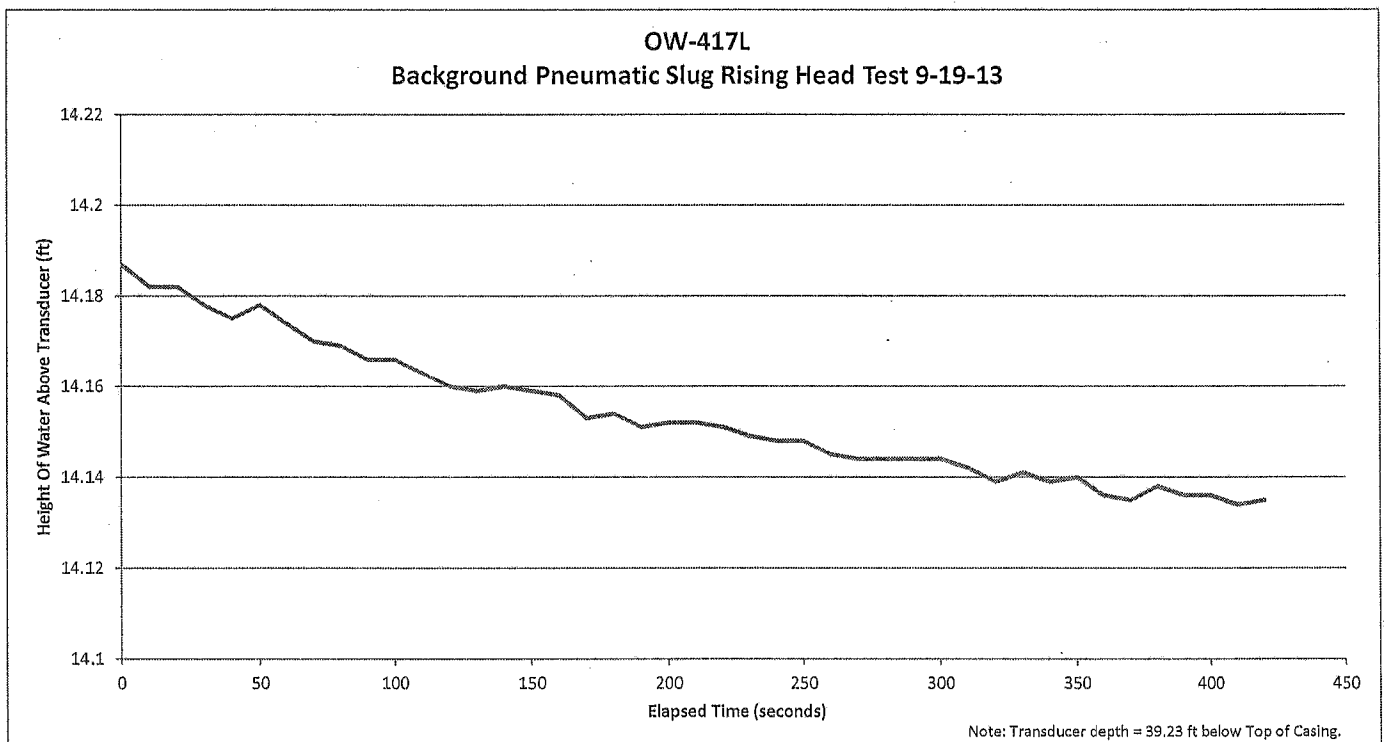
Static Water Level Elevation (NAVD88) collected December 9, 2013: 748.61

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

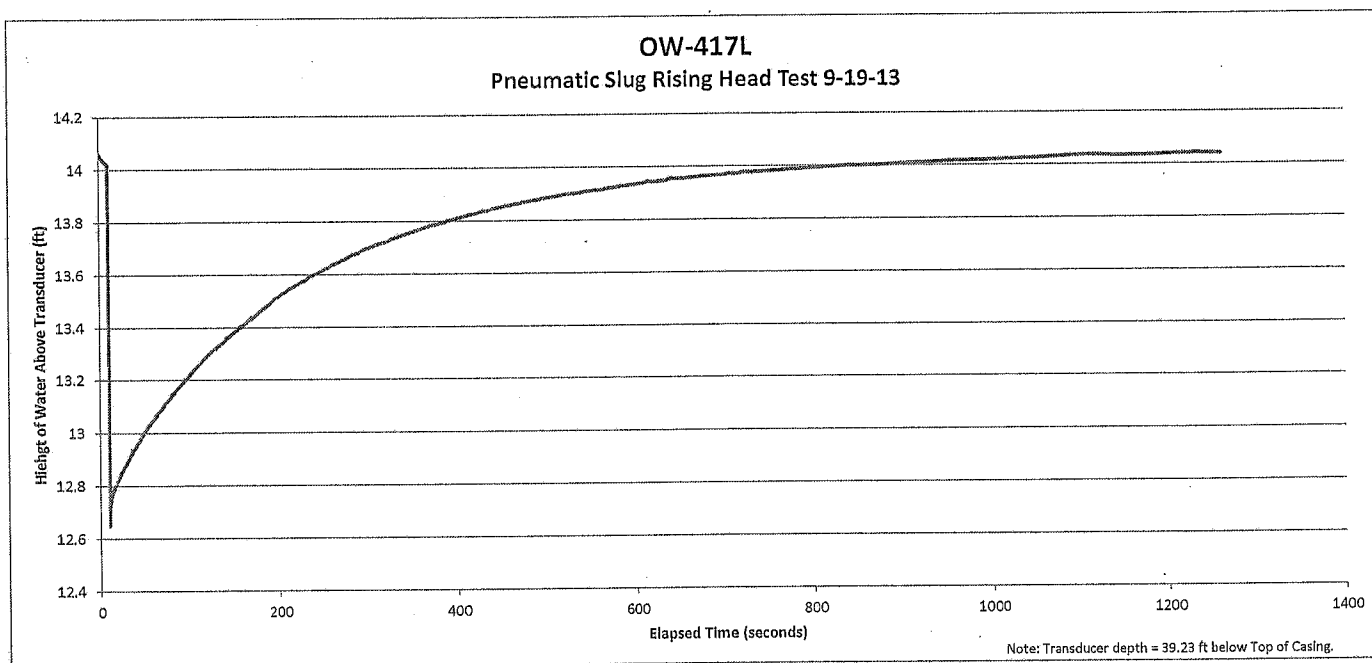
DIAGRAM NOT TO SCALE





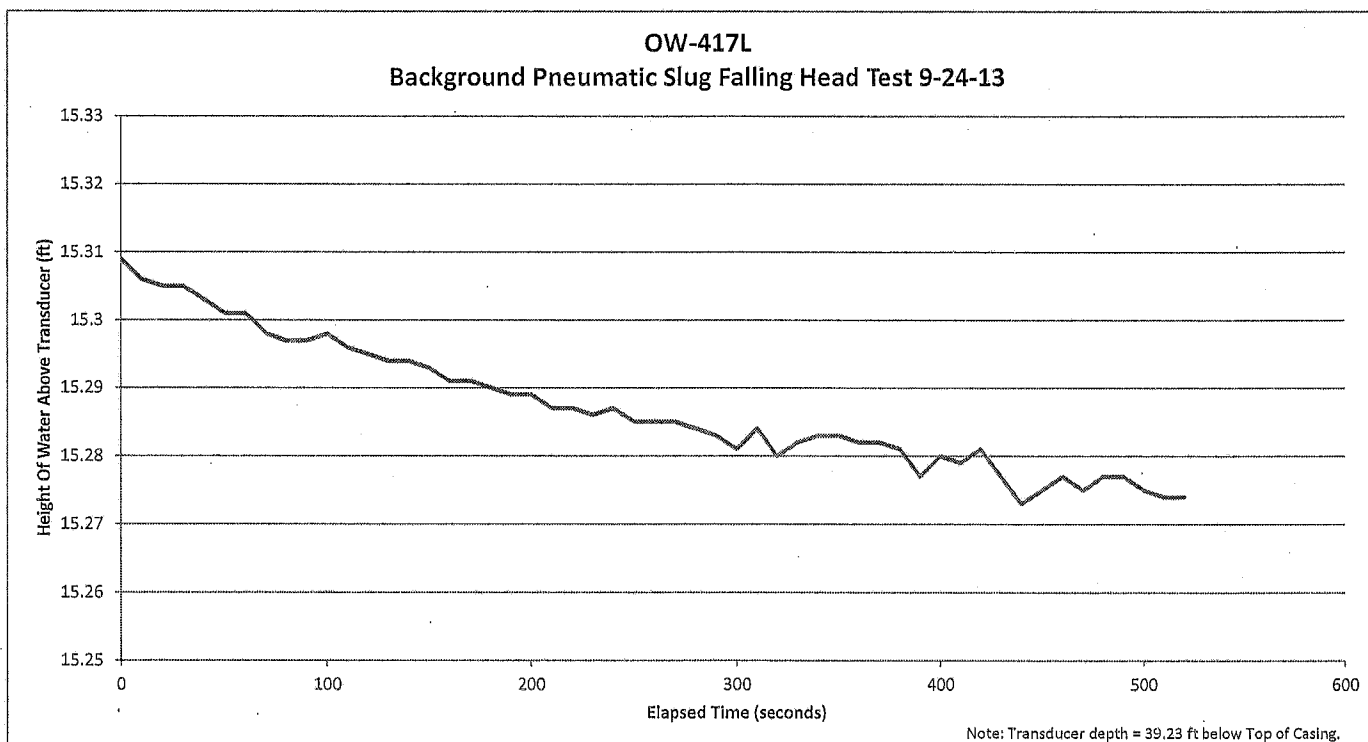
Prepared by/Date: KAL 1/10/14

Checked by/Date: [Signature] 1/16/14



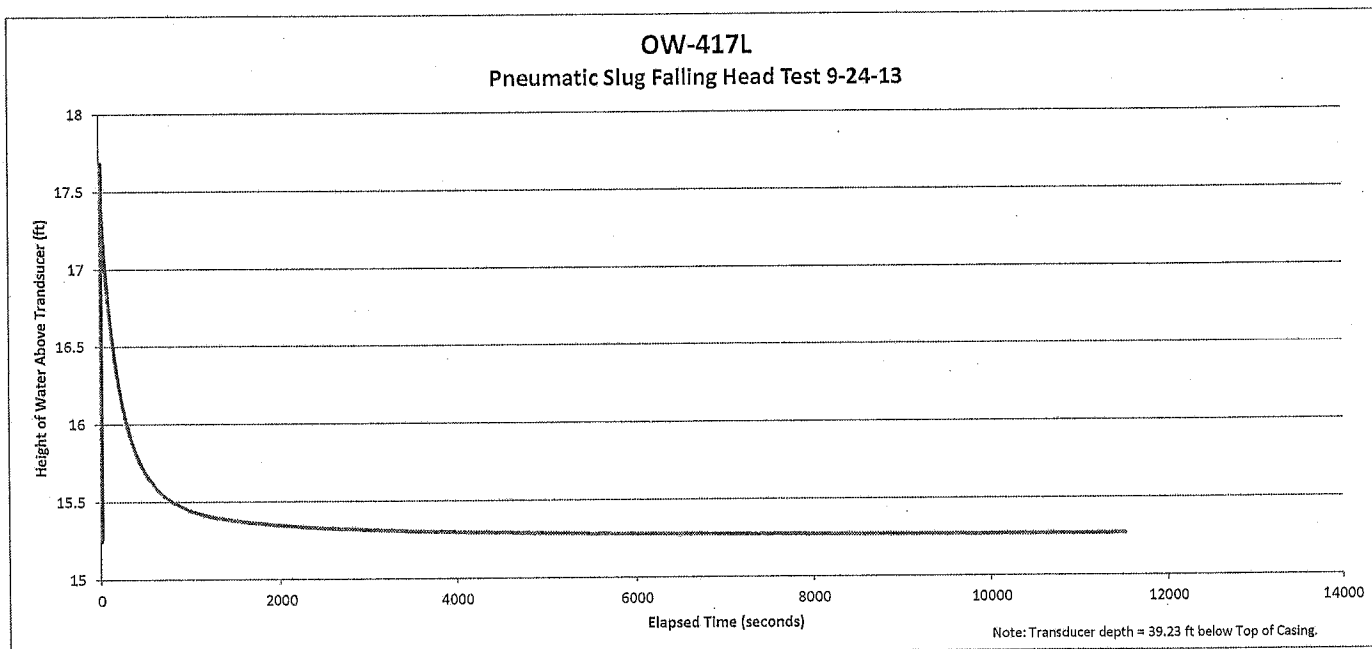
Prepared by/Date: RHC 1/10/14

Checked by/Date: GAJ 1/16/14



Prepared by/Date: KAL 1/10/14

Checked by/Date: JDS 1/10/14



Prepared by/Date: KAL 1/10/14

Checked by/Date: JW 1/16/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-418U**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/28/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 418UBR 2013-09-28 14.10.21 (contains background and pressurization/equalization data for rising head test)
- 418UR 2013-09-28 15.13.03 (contains test data for rising head test)
- 418UBF 2013-09-28 16.33.05 (contains background and vacuum/equalization data for falling head test)
- 418UF 2013-09-28 17.16.39 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 61.92 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KCL 1/10/14

Checked by/Date: JS 1/11/14



# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-418U

Date of Observation Well Installation: 8/29/13

Date of Well Development: 9/14/13

Observation Well Northing: 570526.8 US ft Easting: 2447065.0 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/13/2013 through 9/14/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

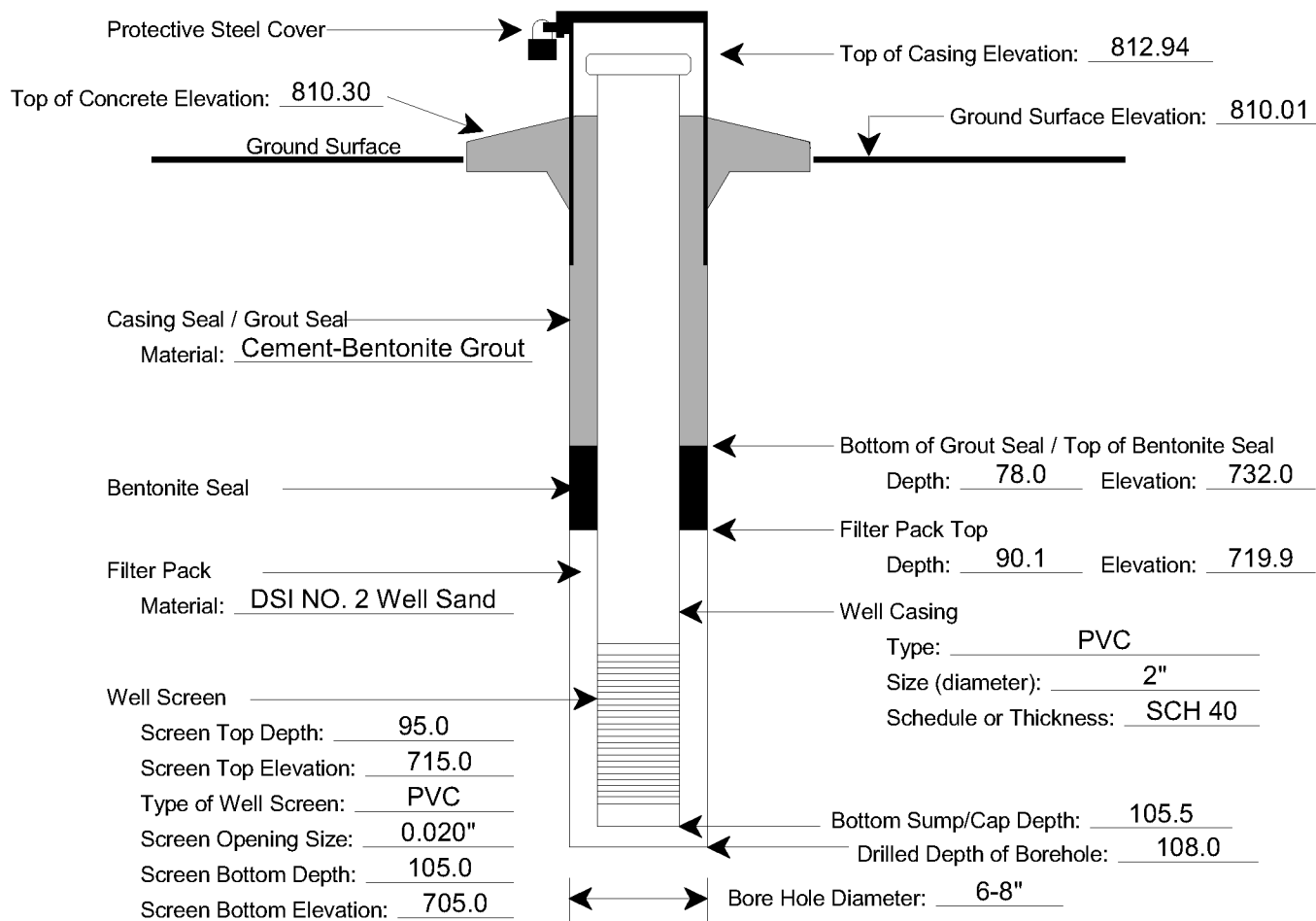
AMEC Inspector Supervising Well Installation: K. Lloyd

Static Water Level Elevation (NAVD88) collected December 9, 2013: 761.40

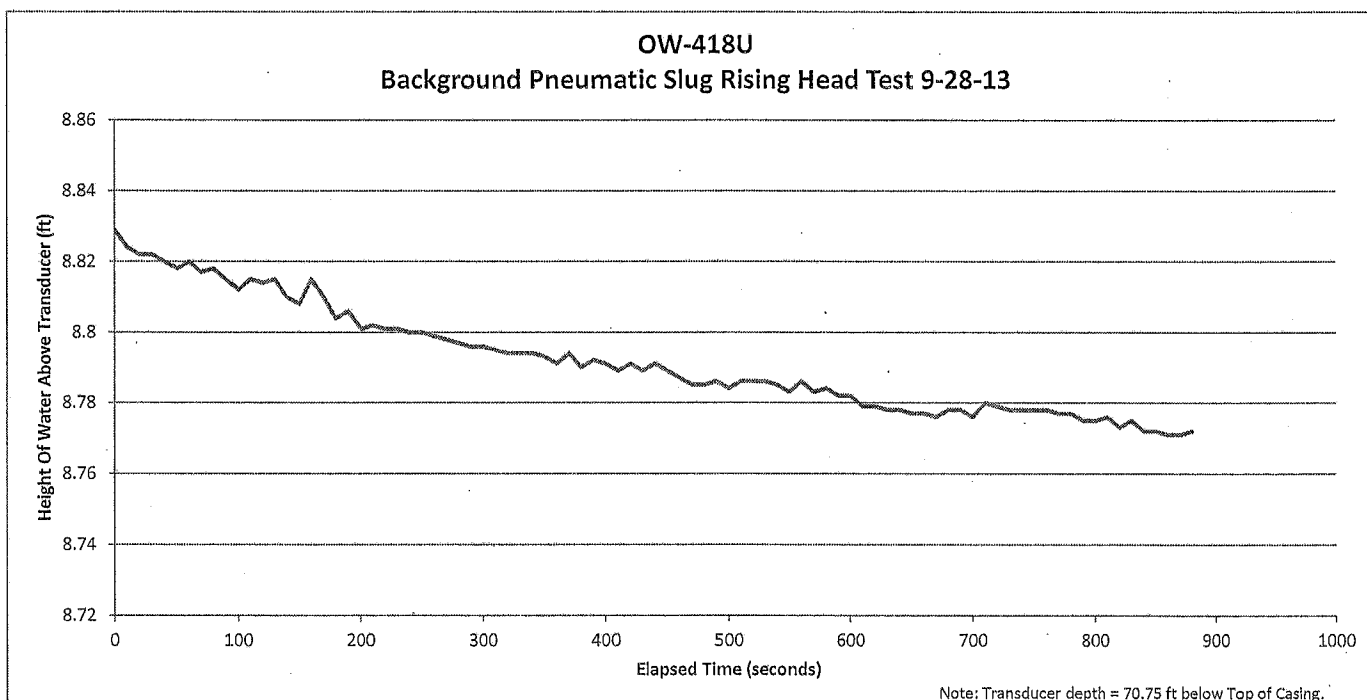
Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

## DIAGRAM NOT TO SCALE

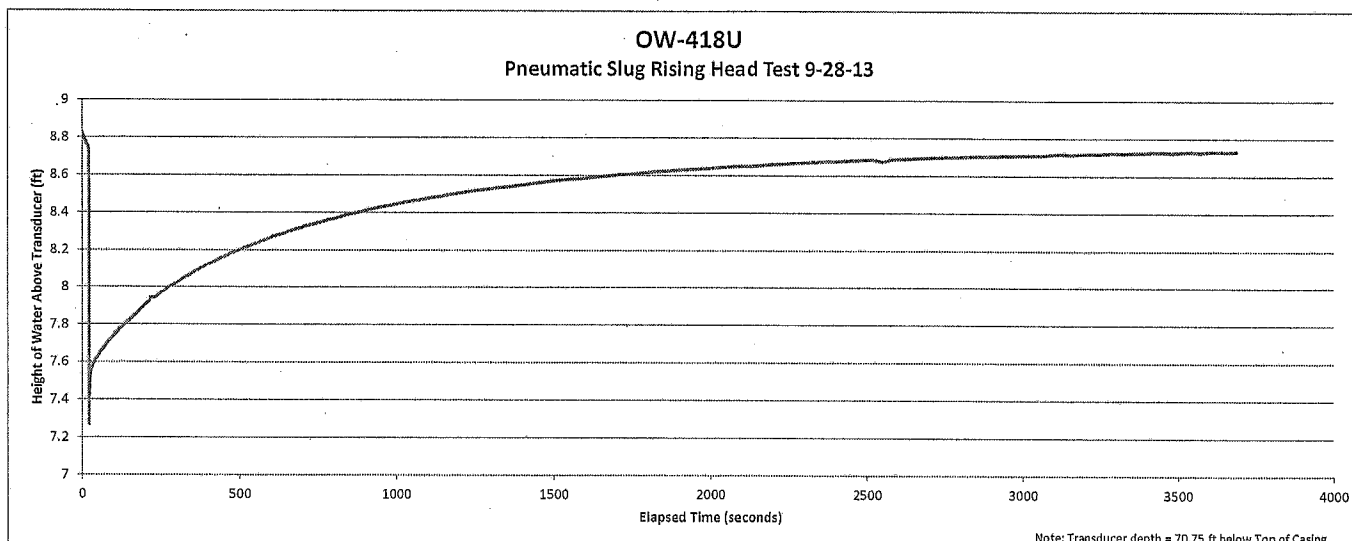


AMEC Environment & Infrastructure, Inc.



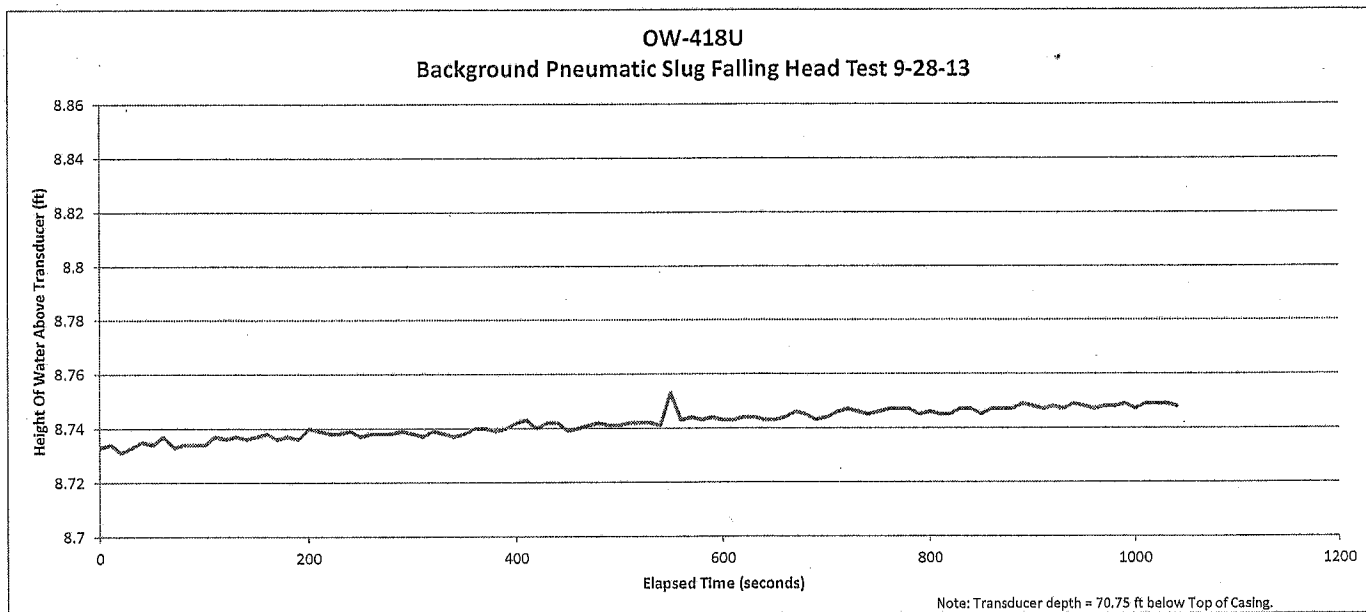
Prepared by/Date: KAL 1/10/14

Checked by/Date: JW 1/10/14



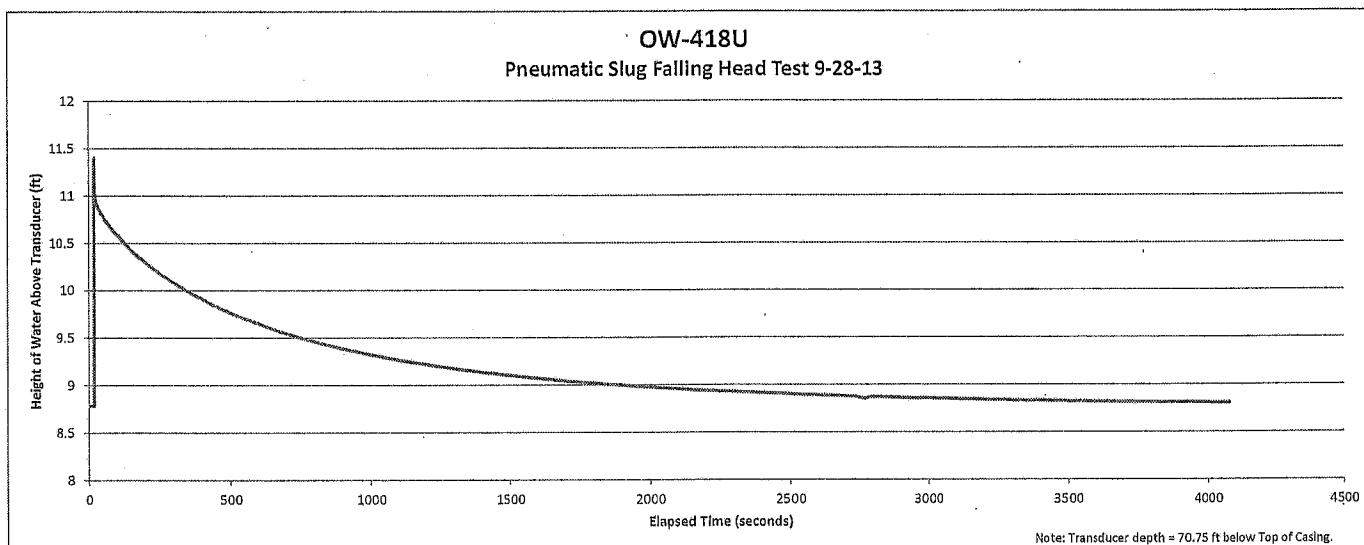
Prepared by/Date: KW 11/0/14

Checked by/Date: JS 11/11/14



Prepared by/Date: KHL 1/0/14

Checked by/Date: JJ 1/11/14



Prepared by/Date: KHL 1/10/14

Checked by/Date: JA 2/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-418L**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/28/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 418LBR 2013-09-28 14.46.05 (contains background and pressurization/equalization data for rising head test)
- 418LR 2013-09-28 15.23.59 (contains test data for rising head test)
- 418LBF 2013-09-28 16.48.35 (contains background and vacuum/equalization data for falling head test)
- 418LF 2013-09-28 17.21.00 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 66.73 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: Kla 1/10/14

Checked by/Date: AS 1/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-418L

Date of Observation Well Installation: 8/28/13

Date of Well Development: 9/14/13

Observation Well Northing: 570506.0 US ft Easting: 2447038.8 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/13/2013 through 9/14/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

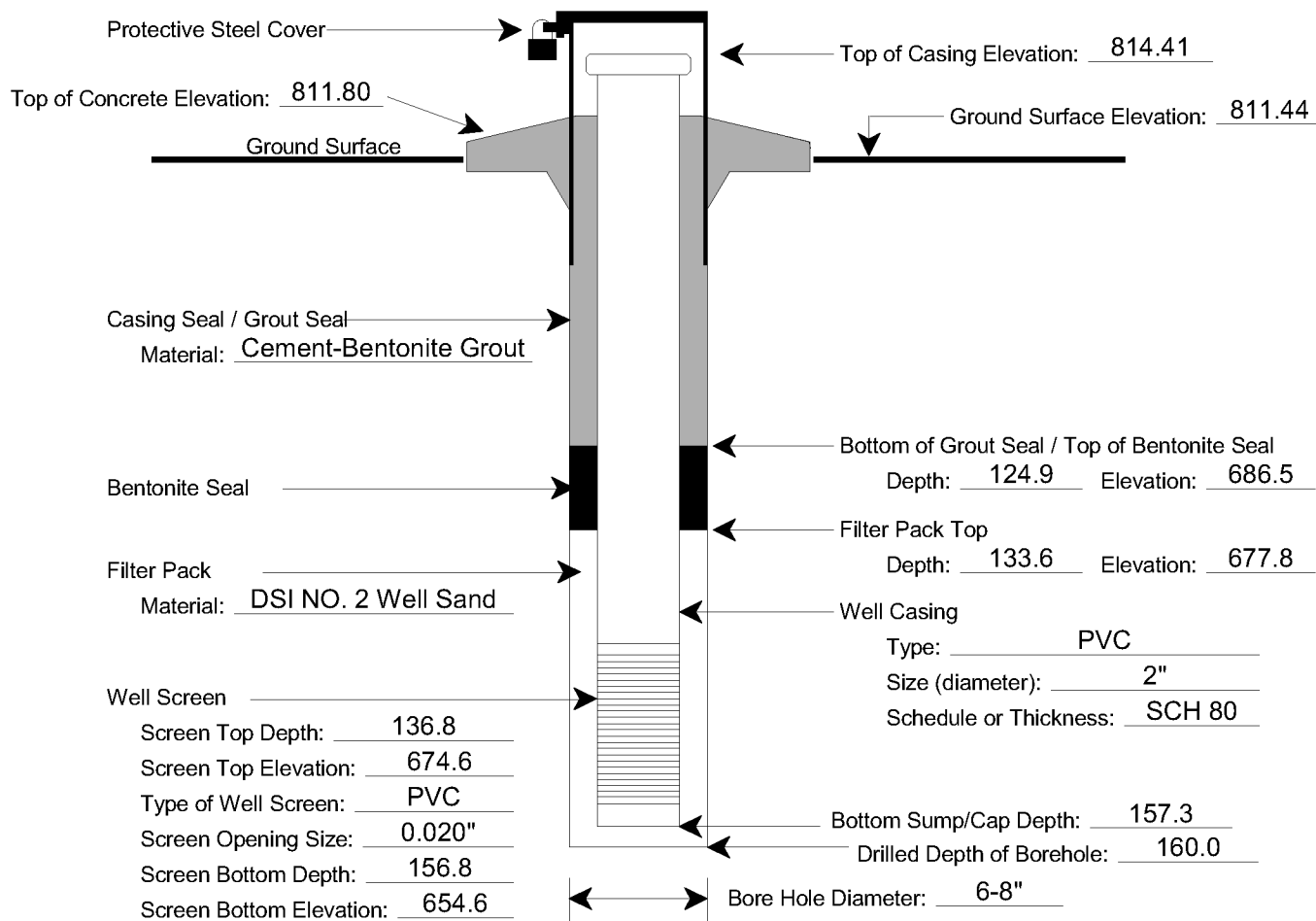
AMEC Inspector Supervising Well Installation: K. Lloyd

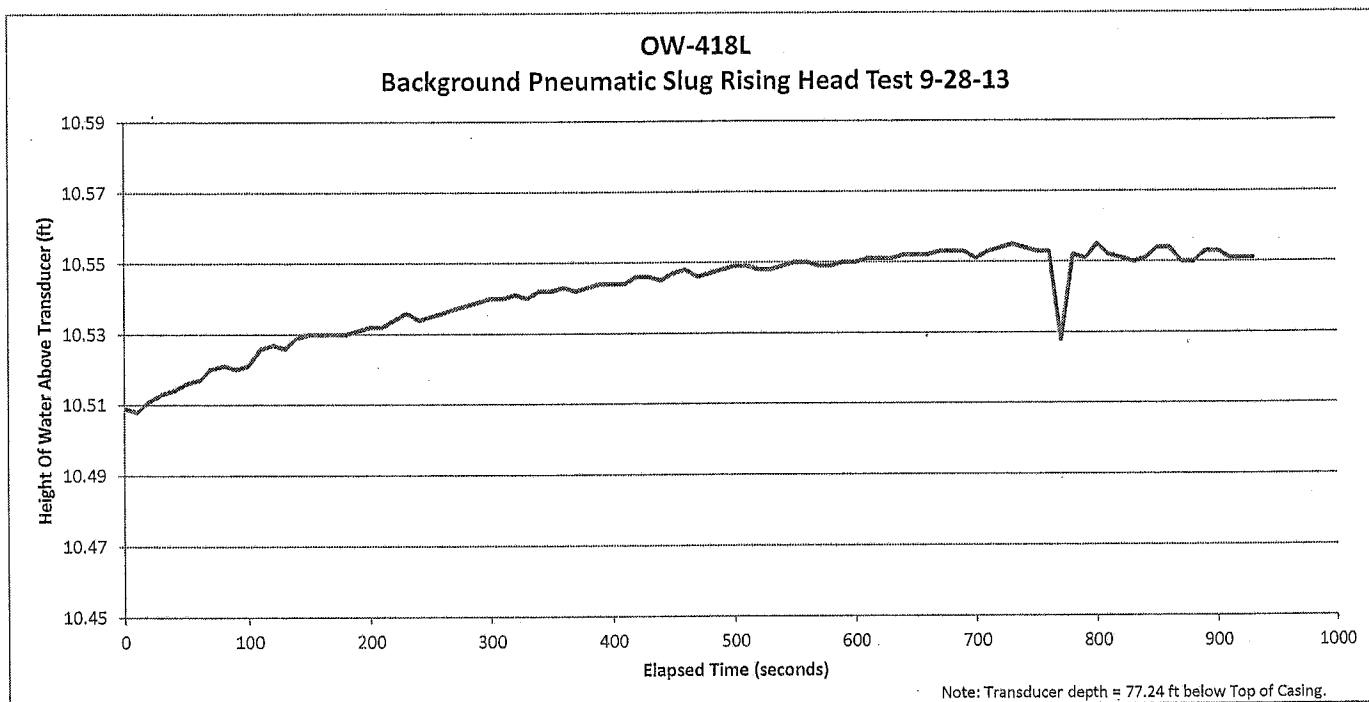
Static Water Level Elevation (NAVD88) collected December 9, 2013: 750.56

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE

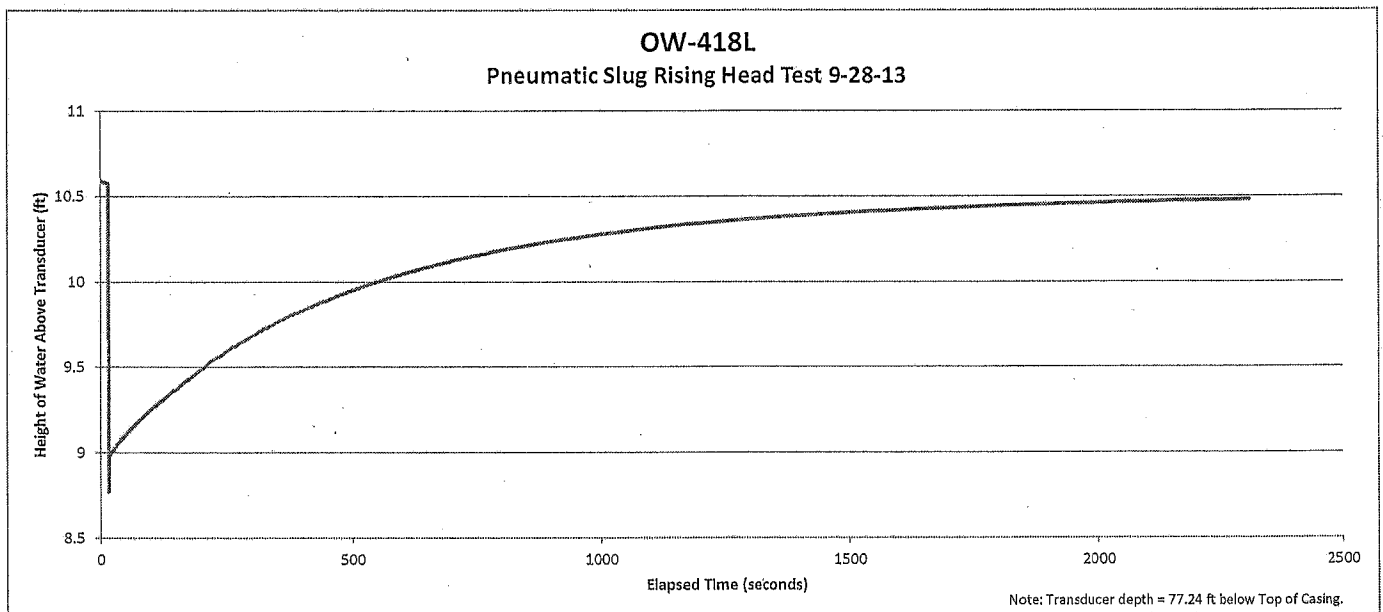




Prepared by/Date: KH 1/10/14

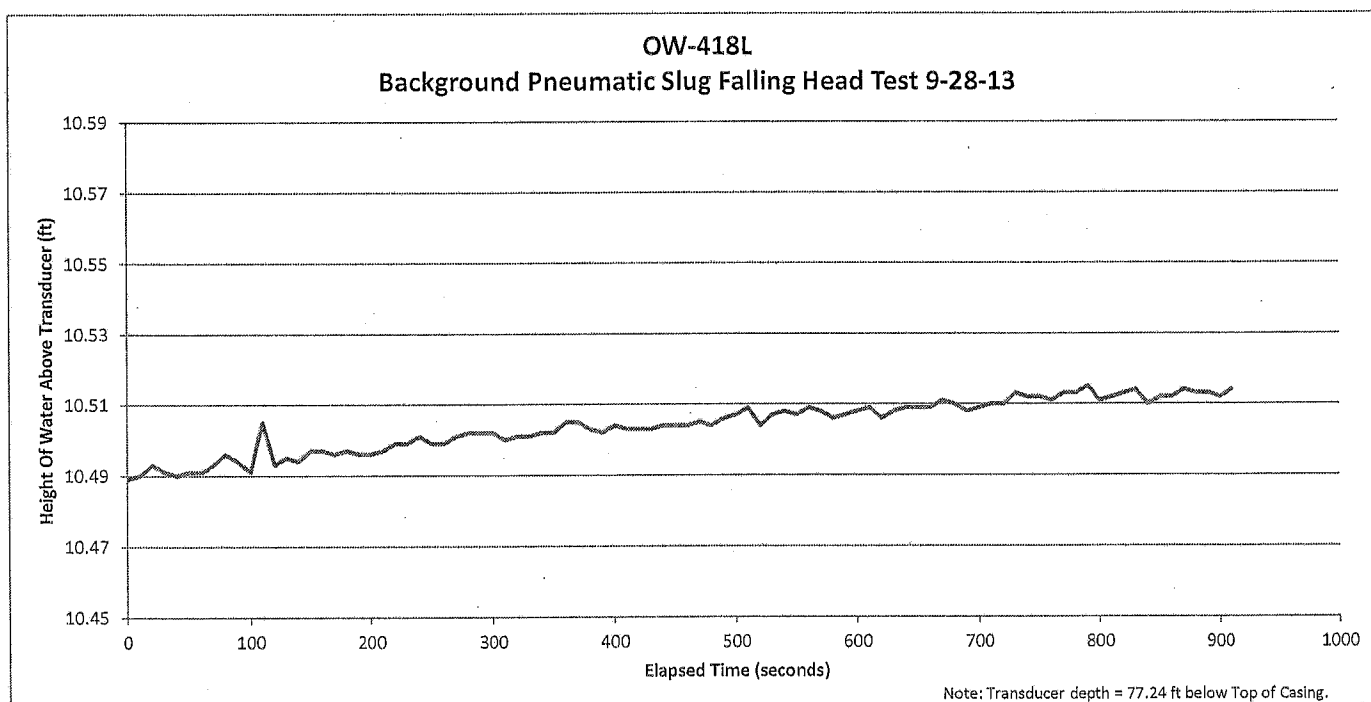
Checked by/Date: JS 1/11/14





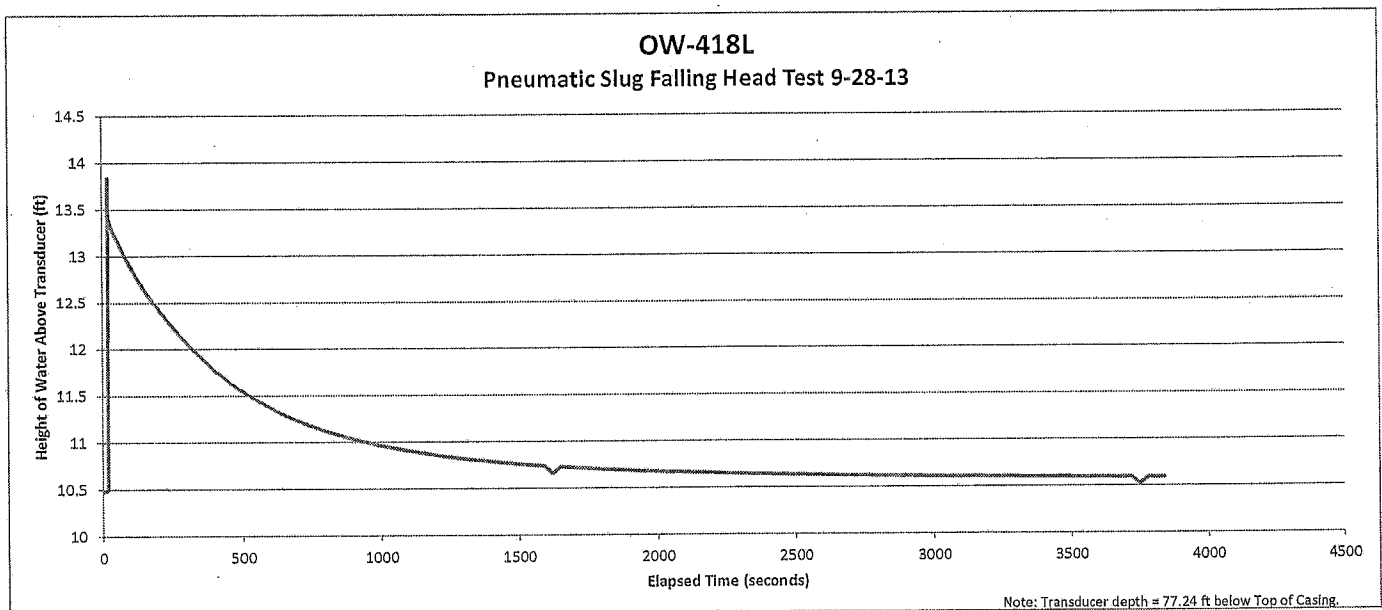
Prepared by/Date: KHL 1/10/14

Checked by/Date: JS 7/1/14



Prepared by/Date: KH 1/10/14

Checked by/Date: JJ 1/11/14



Prepared by/Date: KAL 2/10/14  
Checked by/Date: JD 7/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-419U**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/25/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test No. 2
- Rising head test No. 2
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 419UBR2 2013-09-25 15.08.28 (contains background and pressurization/equalization data for rising head test No. 2)
- 419UR2 2013-09-25 15.15.39 (contains test data for rising head test No. 2)
- 419UBF 2013-09-25 15.59.50 (contains background and vacuum/equalization data for falling head test)
- 419UF 2013-09-25 16.01.04 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 46.70 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.
5. Initial rising head test rejected and re-run as Rising Head Test 2. Files from initial test not included or plotted.

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Prepared by/Date: KAL 11/10/14

Checked by/Date: JOE 11/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-419U

Date of Observation Well Installation: 8/15/13

Date of Well Development: 8/27/13

Observation Well Northing: 571283.4 US ft Easting: 2446716.1 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: N. Dempsey (TSD)

## NOTES:

License No.: TN #936

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/19/2013 through 8/27/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

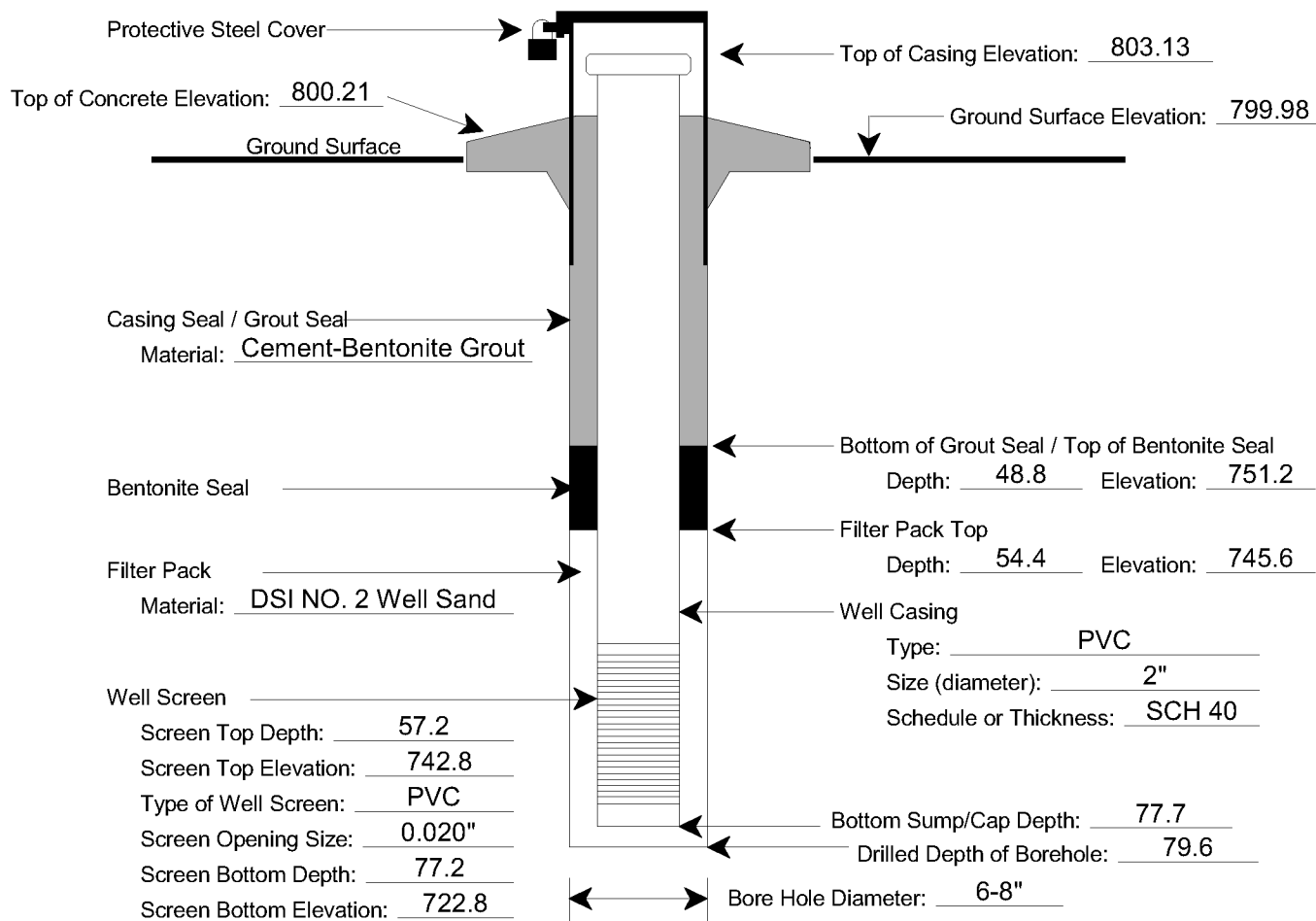
AMEC Inspector Supervising Well Installation: J. Hensberry

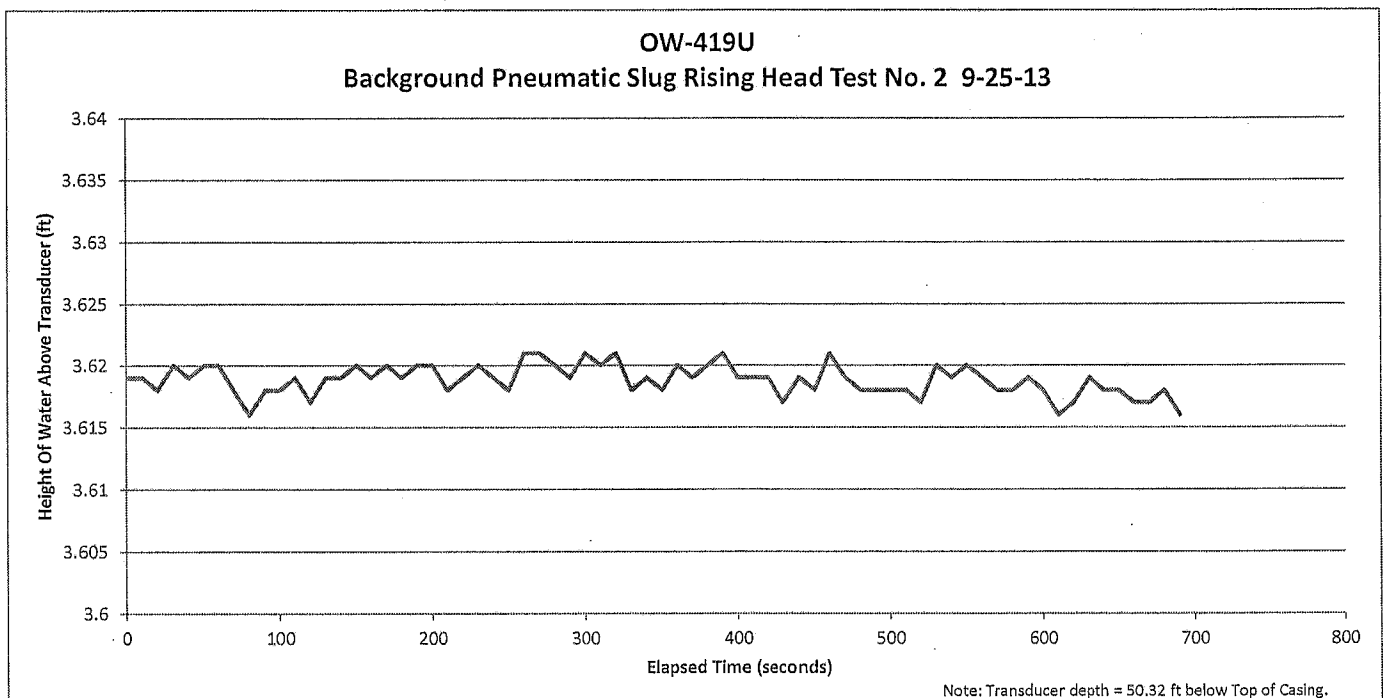
Static Water Level Elevation (NAVD88) collected December 9, 2013: 767.70

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

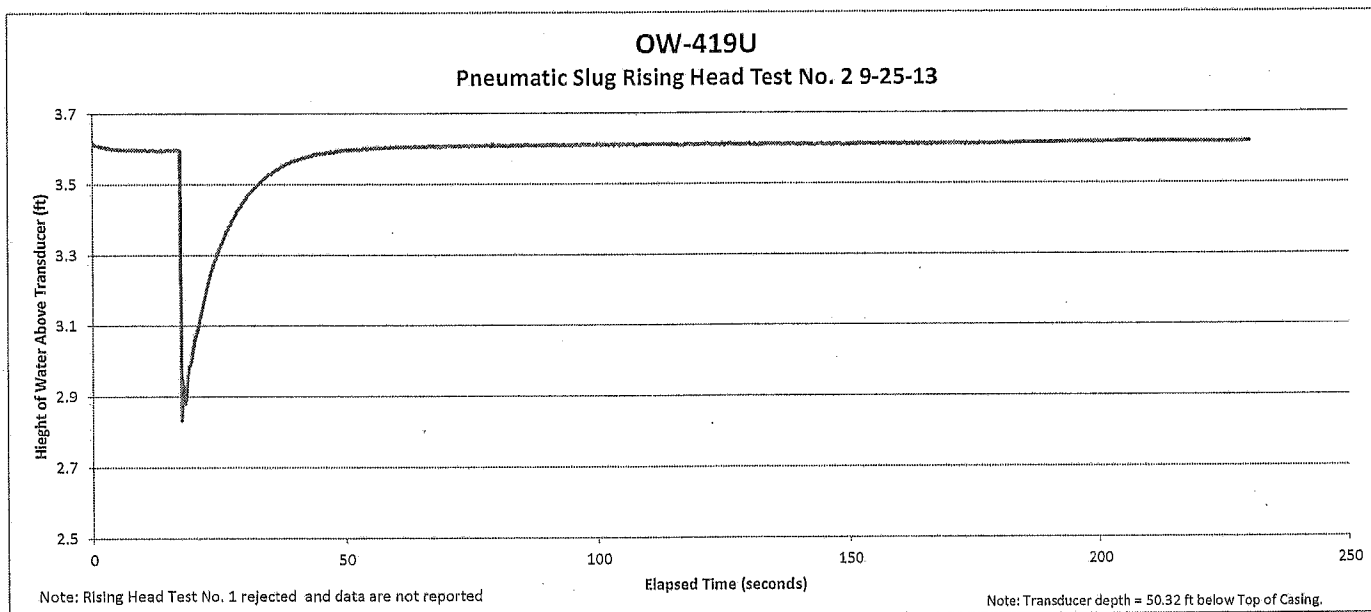
DIAGRAM NOT TO SCALE





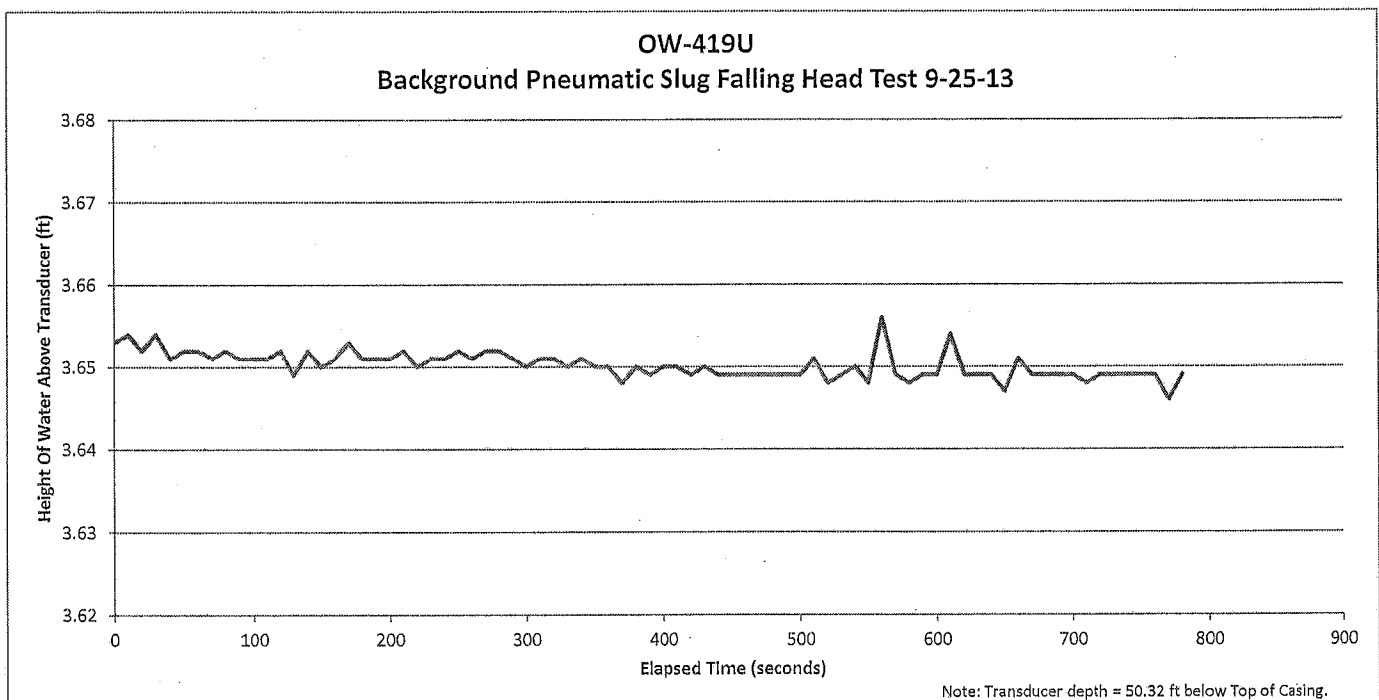
Prepared by/Date: XL 1/10/14

Checked by/Date: JD 1/11/14



Prepared by/Date: KHL 1/10/14

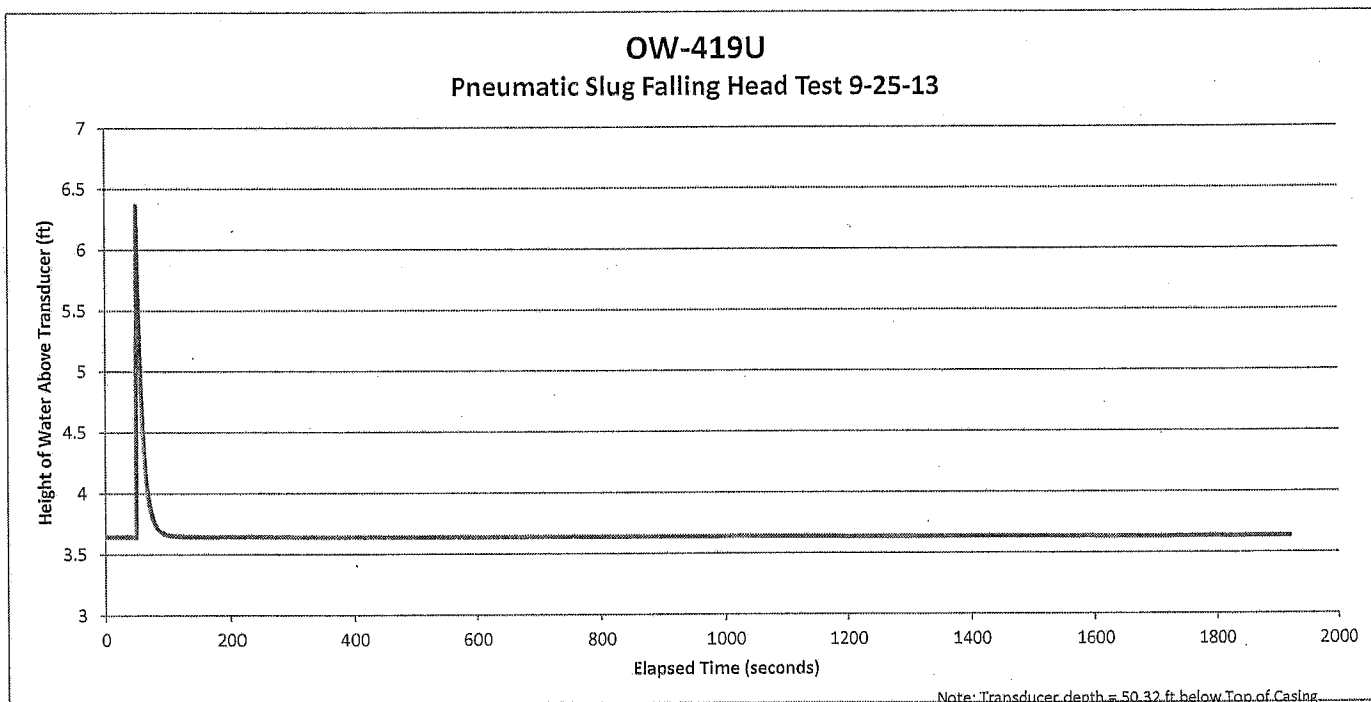
Checked by/Date: JR 1/10/14



Prepared by/Date: KWL 1/10/14

Checked by/Date: gms 9/11/14





Prepared by/Date: KHL 1/10/14

Checked by/Date: JOA 7/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-419L  
Test Method: ASTM D 4044-96 (2008), Sections 8 and 9  
Test Type: Pneumatic  
Test Dates: 9/25/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test No. 2
- Rising head test No. 2
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 419LBR2 2013-09-25 15.52.13 (contains background and pressurization/equalization data for rising head test No. 2)
- 419LR2 2013-09-25 15.50.38 (contains test data for rising head test No. 2)
- 419LBF 2013-09-25 15.44.44 (contains background and vacuum/equalization data for falling head test)
- 419LF 2013-09-25 15.46.19 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 47.05 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.
5. Initial rising head test rejected and re-run as Rising Head Test 2. Files from initial test not included or plotted.

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Prepared by/Date: KAL 11/10/14

Checked by/Date: JS 11/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-419L

Date of Observation Well Installation: 8/6/13

Date of Well Development: 8/21/13

Observation Well Northing: 571257.7 US ft Easting: 2446683.4 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: N. Dempsey (TSD)

## NOTES:

License No.: TN #936

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/20/2013 through 8/21/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

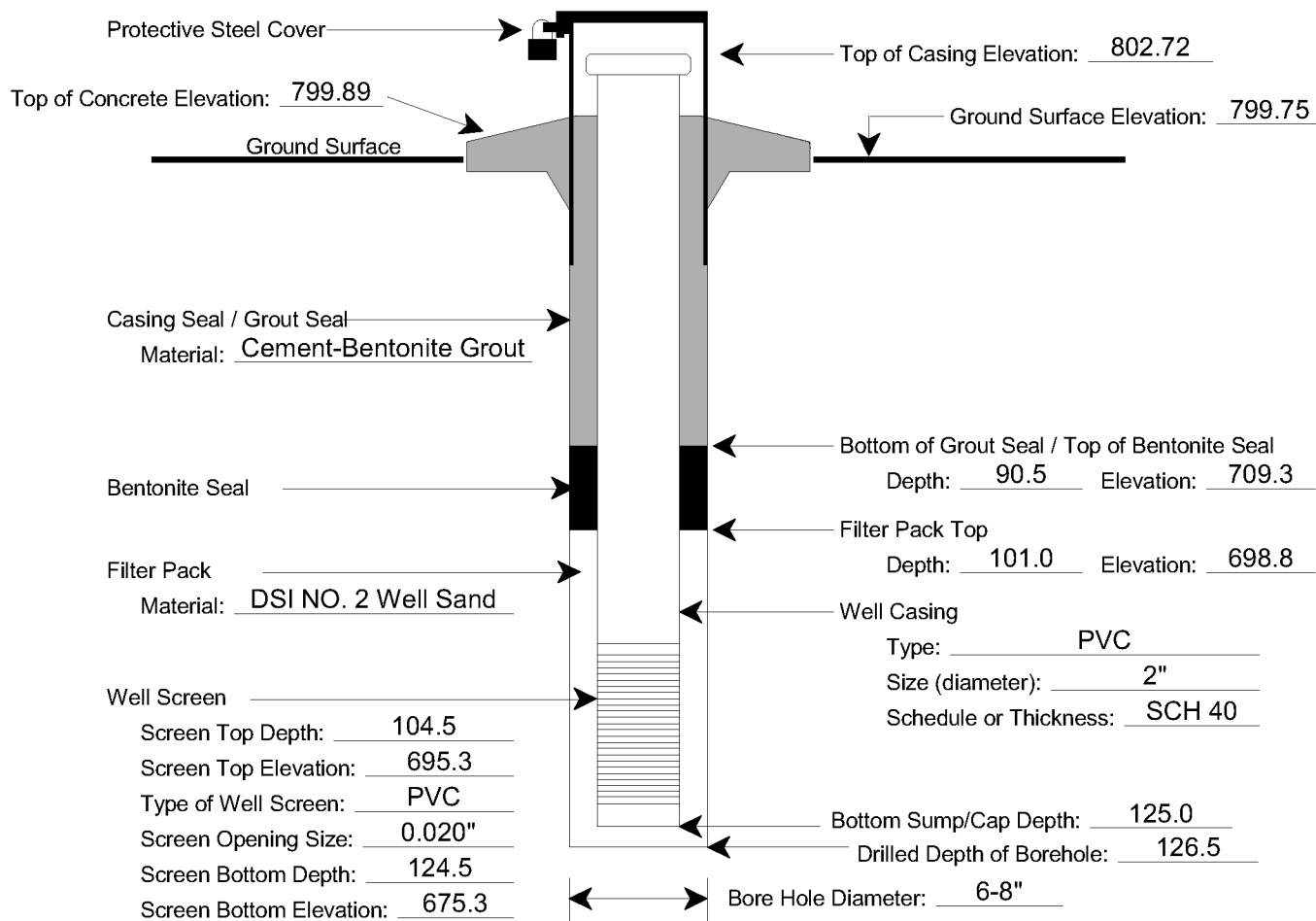
AMEC Inspector Supervising Well Installation: J. Hensberry

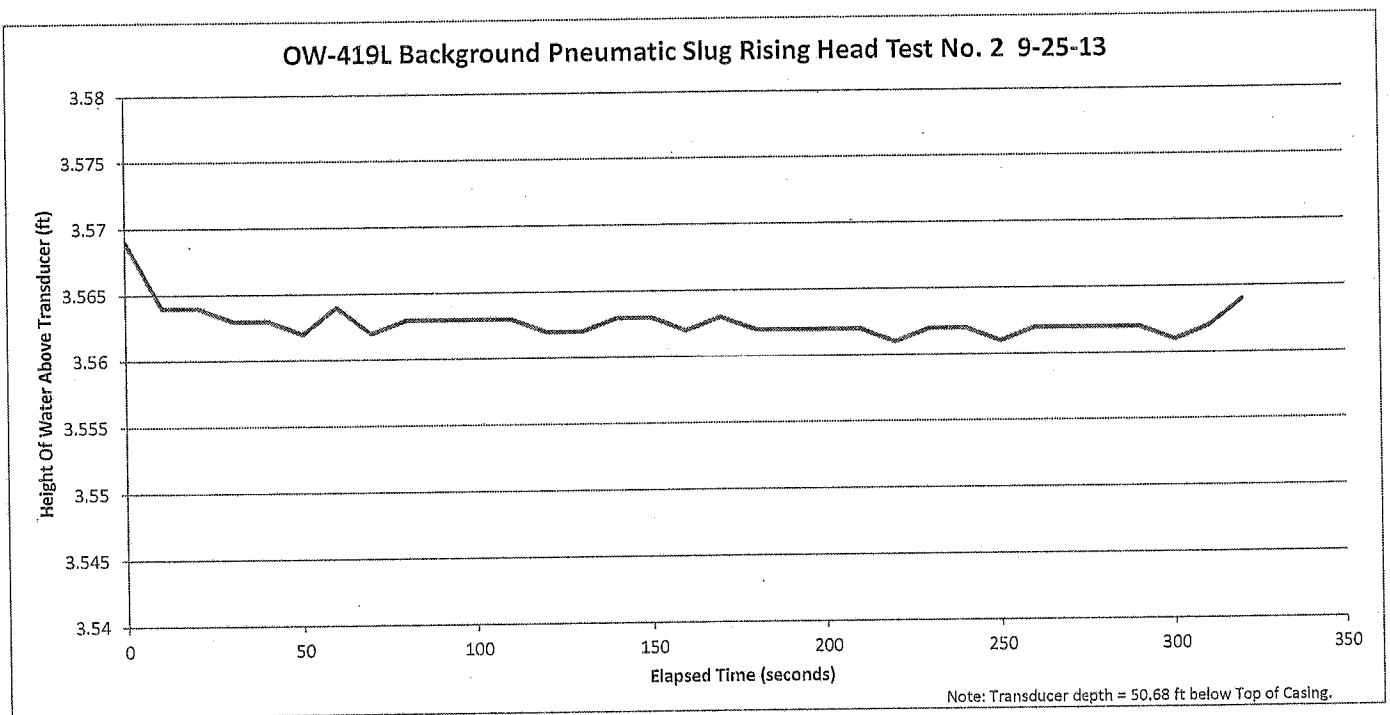
Static Water Level Elevation (NAVD88) collected December 9, 2013: 763.57

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

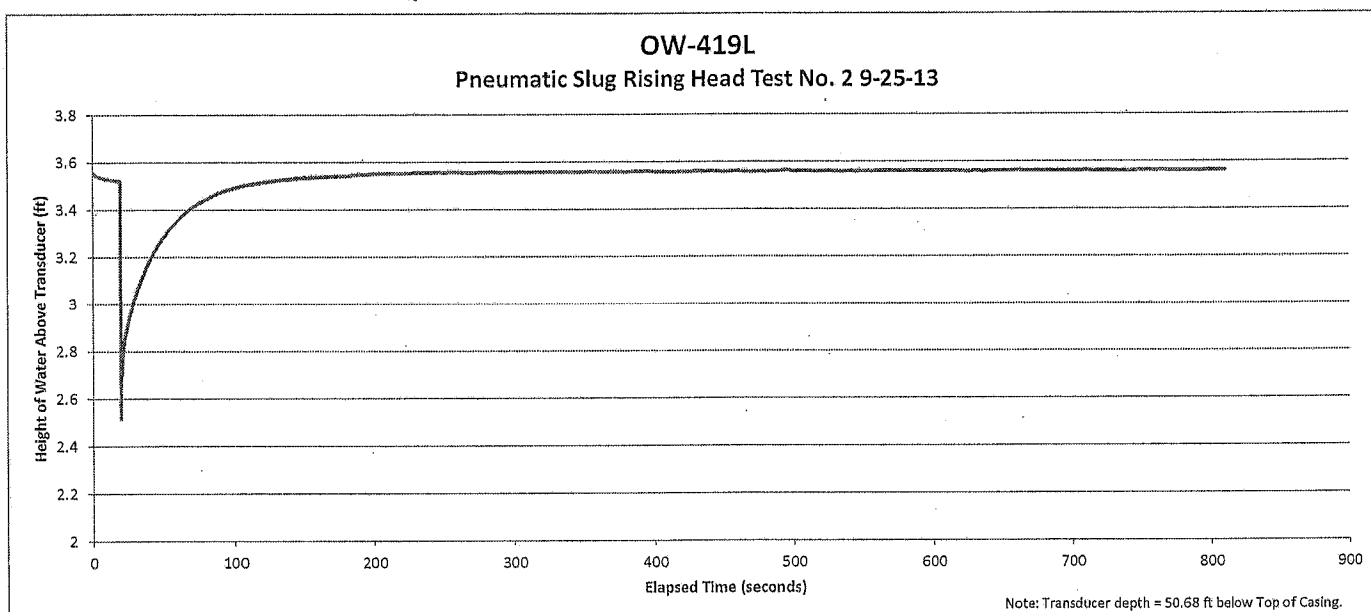
DIAGRAM NOT TO SCALE





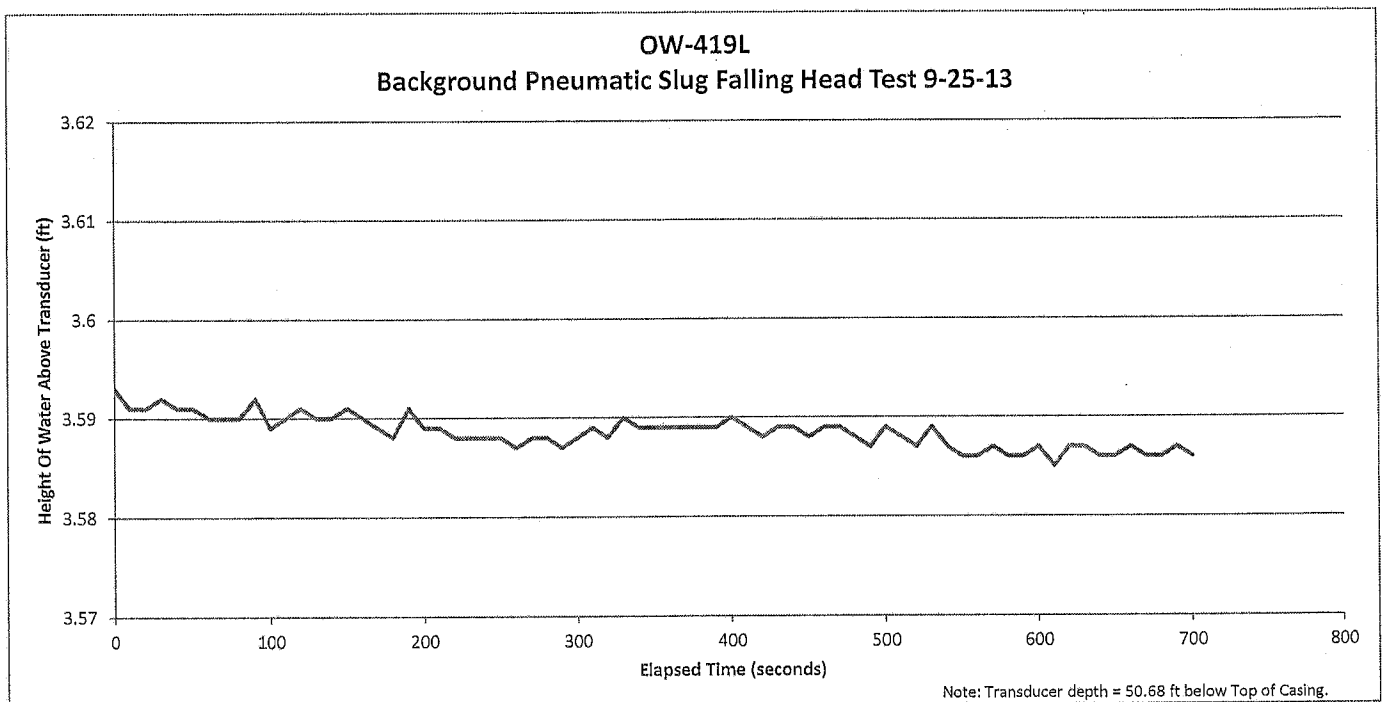
Prepared by/Date: KAL 1/16/14

Checked by/Date: [Signature] 1/16/14



Prepared by/Date: KHL 1/10/14

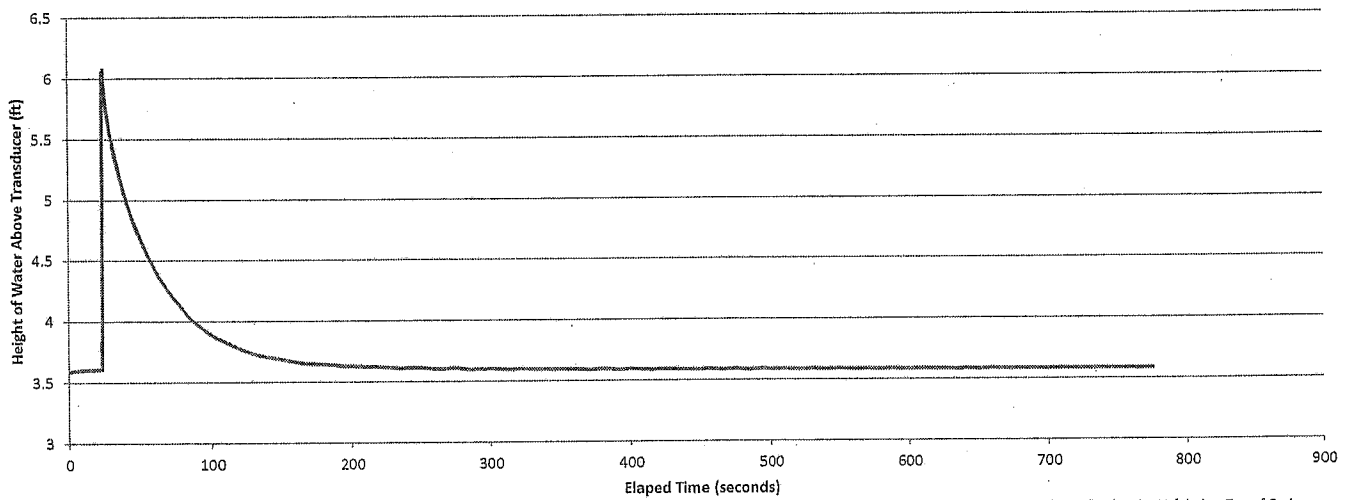
Checked by/Date: [Signature] 1/10/14



Prepared by/Date: KAL 11/10/14

Checked by/Date: [Signature] 11/11/14

OW-419L  
Pneumatic Slug Falling Head Test 9-25-13



Note: Transducer depth = 50.68 ft below Top of Casing.

Prepared by/Date: KHL 1/10/14  
Checked by/Date: JAL 1/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-420L**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic; Solid**

**Test Dates: 9/30/13; 10/1/2013; 10/2/13**

Well Construction Diagram

Plots:

- Background water level for rising head test (pneumatic slug)
- Rising head test (pneumatic slug)
- Background water level for falling head test (solid slug)
- Falling head test (solid slug)
- Background water level for rising head test (solid slug)
- Rising head test (solid slug)

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 420LBR pneumatic2013-09-30 16.16.58 (contains background and pressurization/equalization data for pneumatic slug rising head test)
- 420LR pneumatic2013-09-30 18.12.00 (contains test data for pneumatic slug rising head test)
- 420LBF2 2013-10-01 14.36.54 (contains background data for falling head test)
- 420LF2 2013-10-01 16.55.20 (contains test data for falling head test)
- 420LBR 2013-10-02 08.56.55 (contains background for rising head test)
- 420LR 2013-10-02 11.40.13 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted for pneumatic tests.
2. Static water level (below top of casing) prior to testing = 64.88 ft on 9/30/13 and 64.77 ft on 10/1/13.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.
5. The well would not hold a vacuum; the test method was changed to the solid slug method, and the transducer was lowered to accommodate the solid slug.

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Prepared by/Date: KML 11/10/14

Checked by/Date: AS 11/11/14



# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-420L

Date of Observation Well Installation: 8/20/13

Date of Well Development: 9/3/13

Observation Well Northing: 572021.1 US ft Easting: 2446902.0 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: N. Dempsey (TSD)

## NOTES:

License No.: TN #936

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/28/2013 through 9/3/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

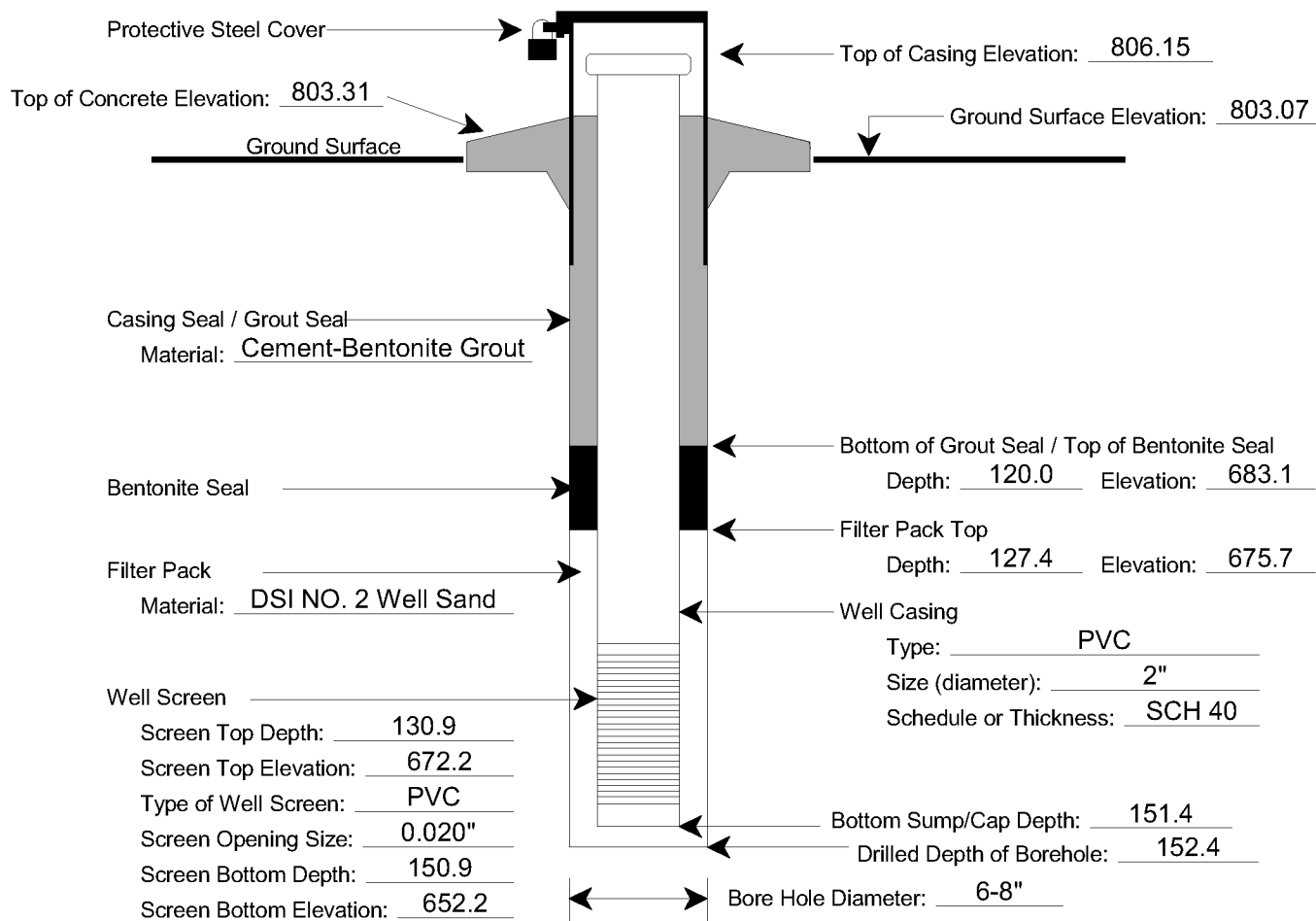
AMEC Inspector Supervising Well Installation: J. Hensberry

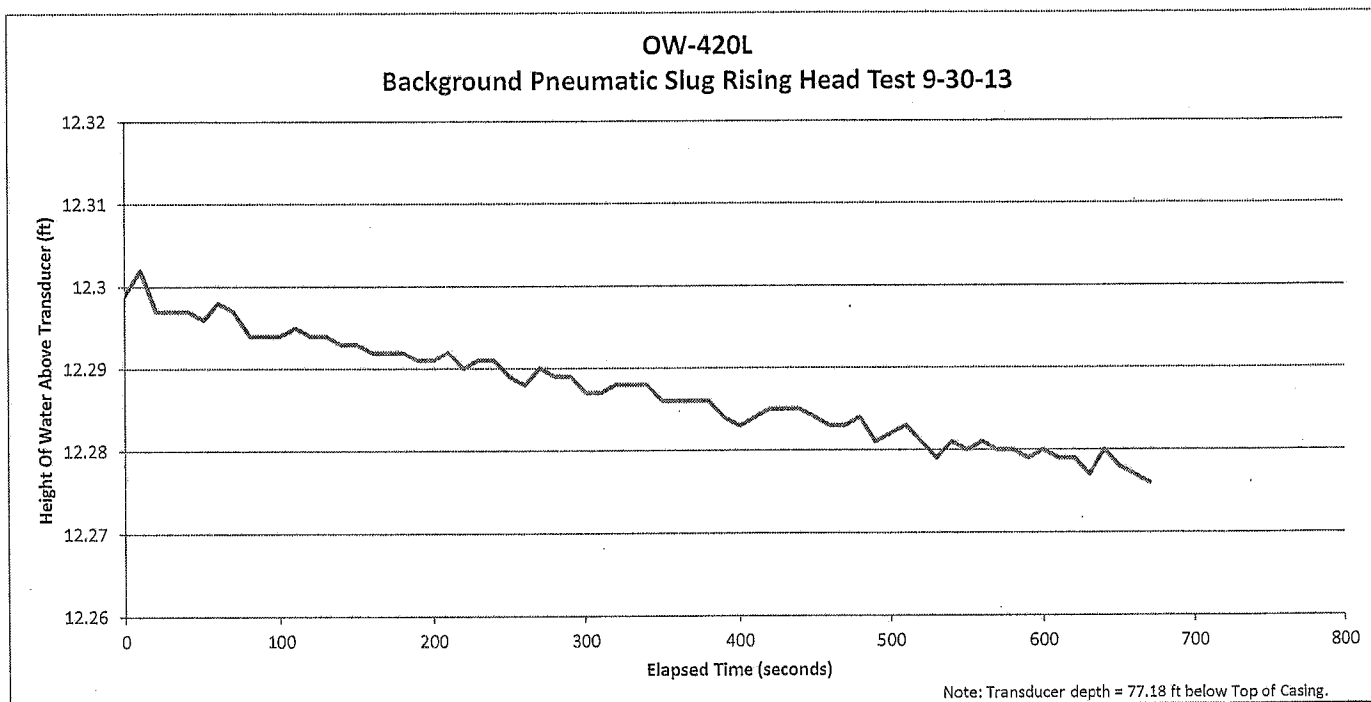
Static Water Level Elevation (NAVD88) collected December 9, 2013: 744.97

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

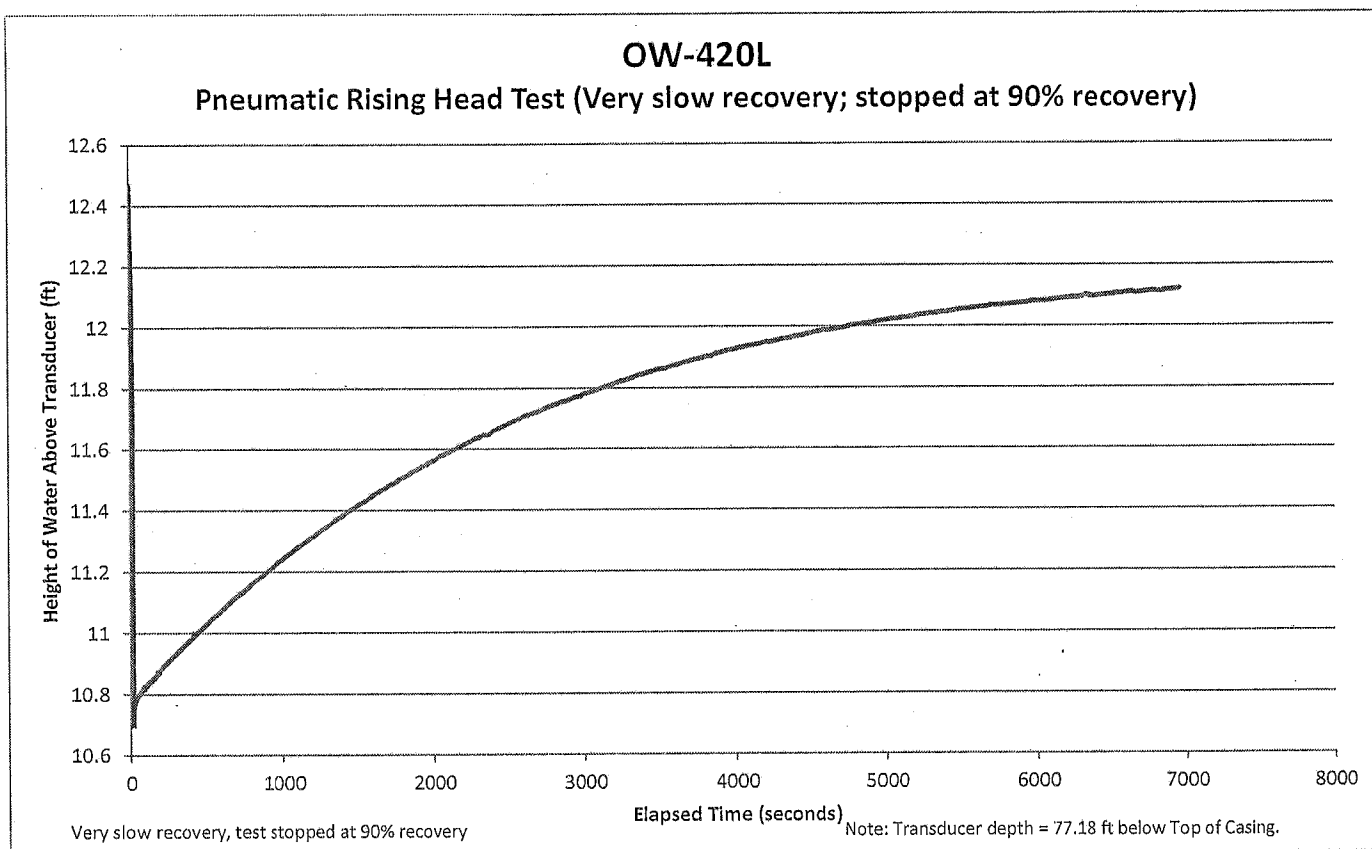
DIAGRAM NOT TO SCALE





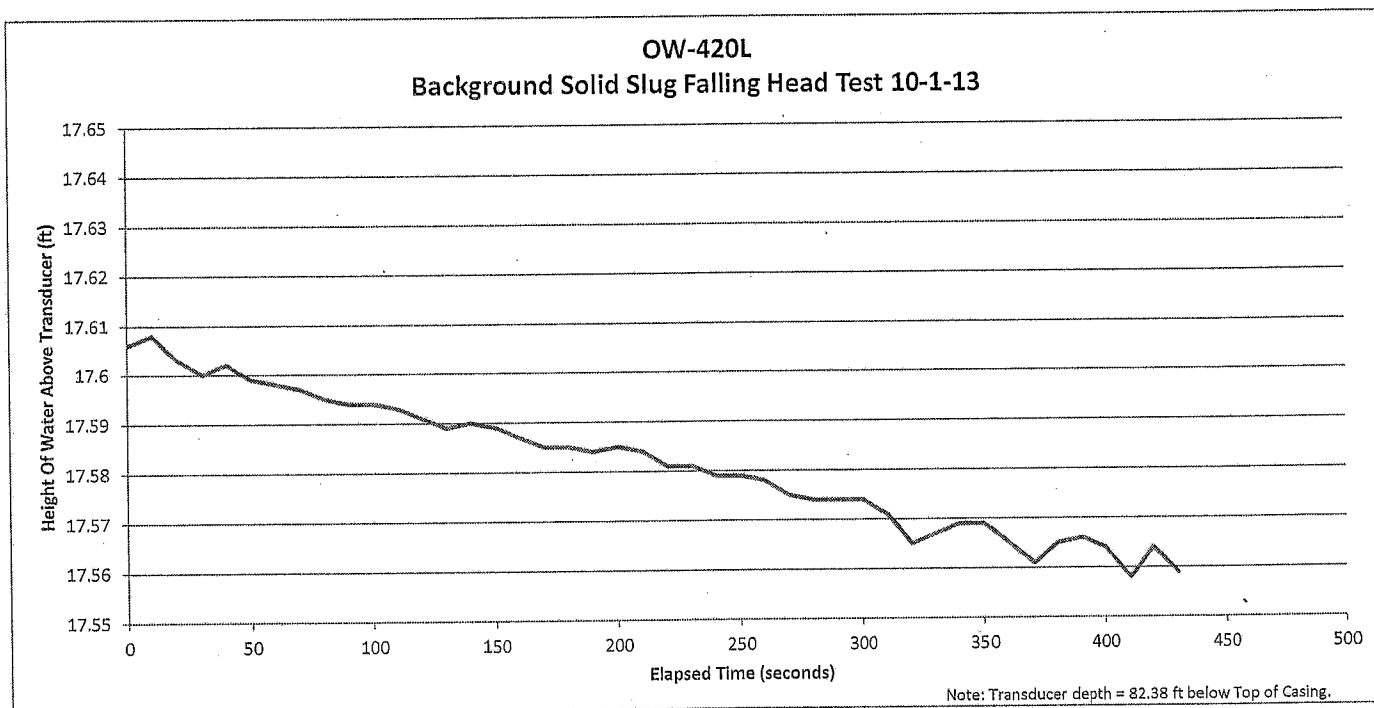
Prepared by/Date: KHL 1/10/14

Checked by/Date: JAS 1/11/14



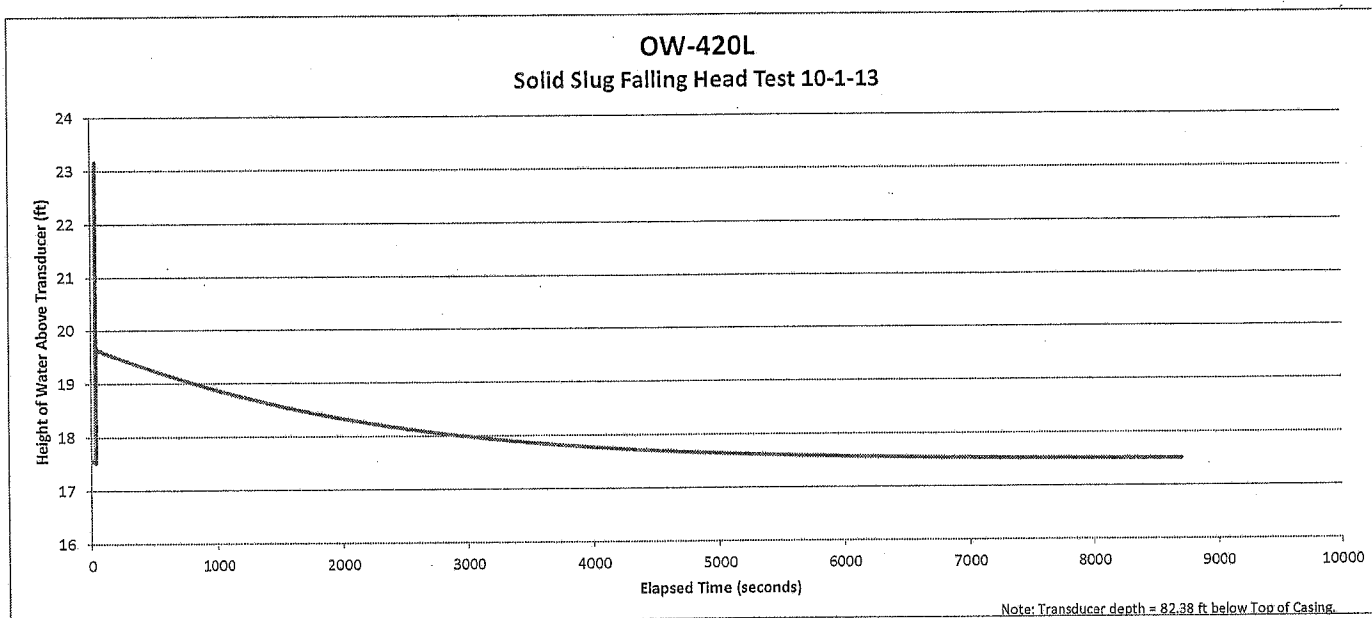
Prepared by/Date: KH 1/10/14

Checked by/Date: [Signature] 1/14/14



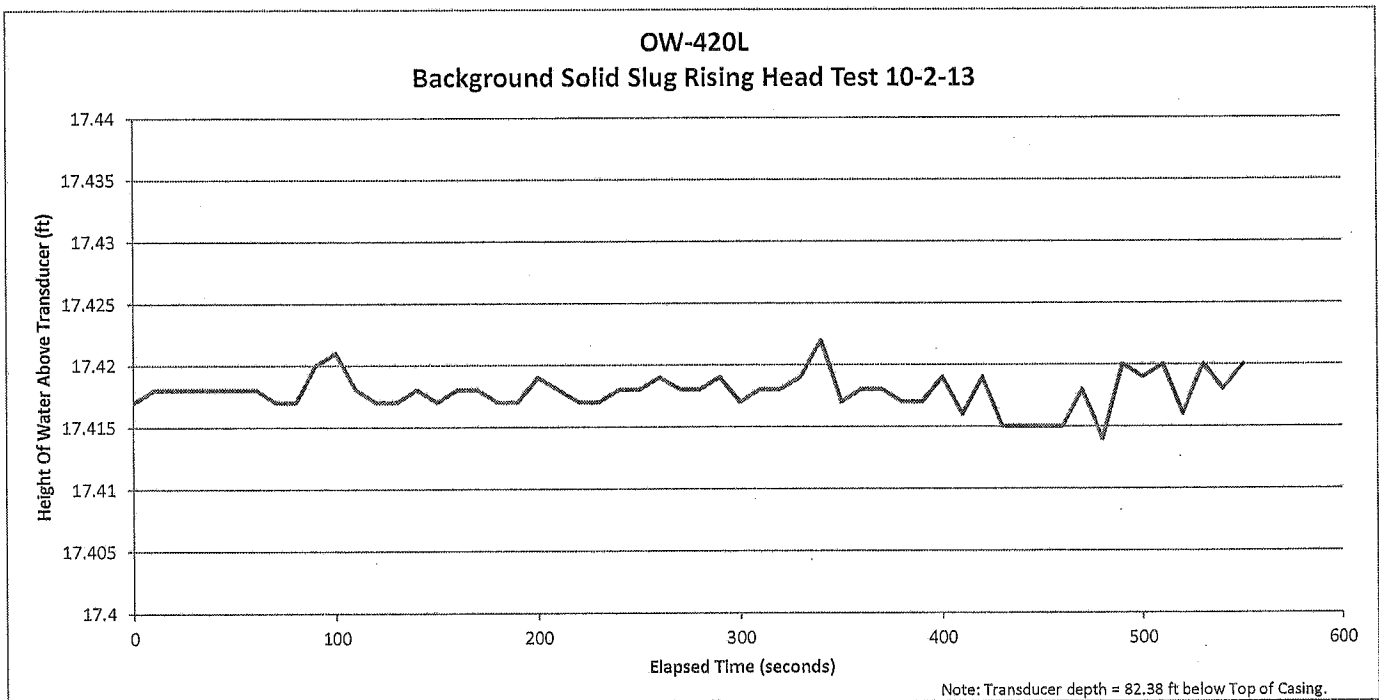
Prepared by/Date: KAL 1/10/14

Checked by/Date: JAS 1/11/14



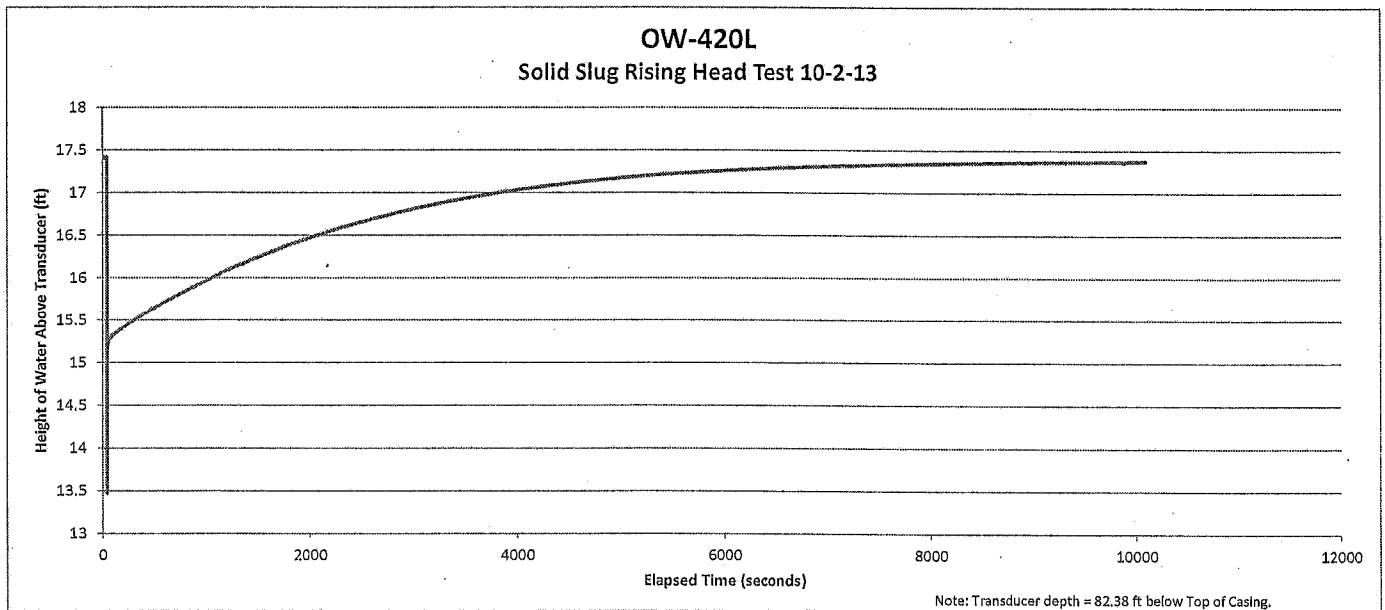
Prepared by/Date: KAL 1/10/14

Checked by/Date: JCS 1/11/14



Prepared by/Date: 112 1/10/14

Checked by/Date: Joe 1/11/14



Prepared by/Date: KHL 1/10/14

Checked by/Date: JS 1/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-421U**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Solid**

**Test Dates: 10/1/2013; 10/2/2013**

Well Construction Diagram

Plots:

- Background water level for falling head test
- Falling head test
- Background water level for rising head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 421UBF 2013-10-01 16.36.51 (contains background data for falling head test)
- 421UF 2013-10-01 16.12.17 (contains test data for falling head test)
- 421UBR 2013-10-02 09.37.33 (contains background data for rising head test)
- 421UR 2013-10-02 12.52.26 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 53.91 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAC 11/10/14

Checked by/Date: JOS 11/11/14



# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-421U

Date of Observation Well Installation: 8/15/13

Date of Well Development: 9/19/13

Observation Well Northing: 570557.7 US ft Easting: 2446471.7 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/18/2013 through 9/19/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

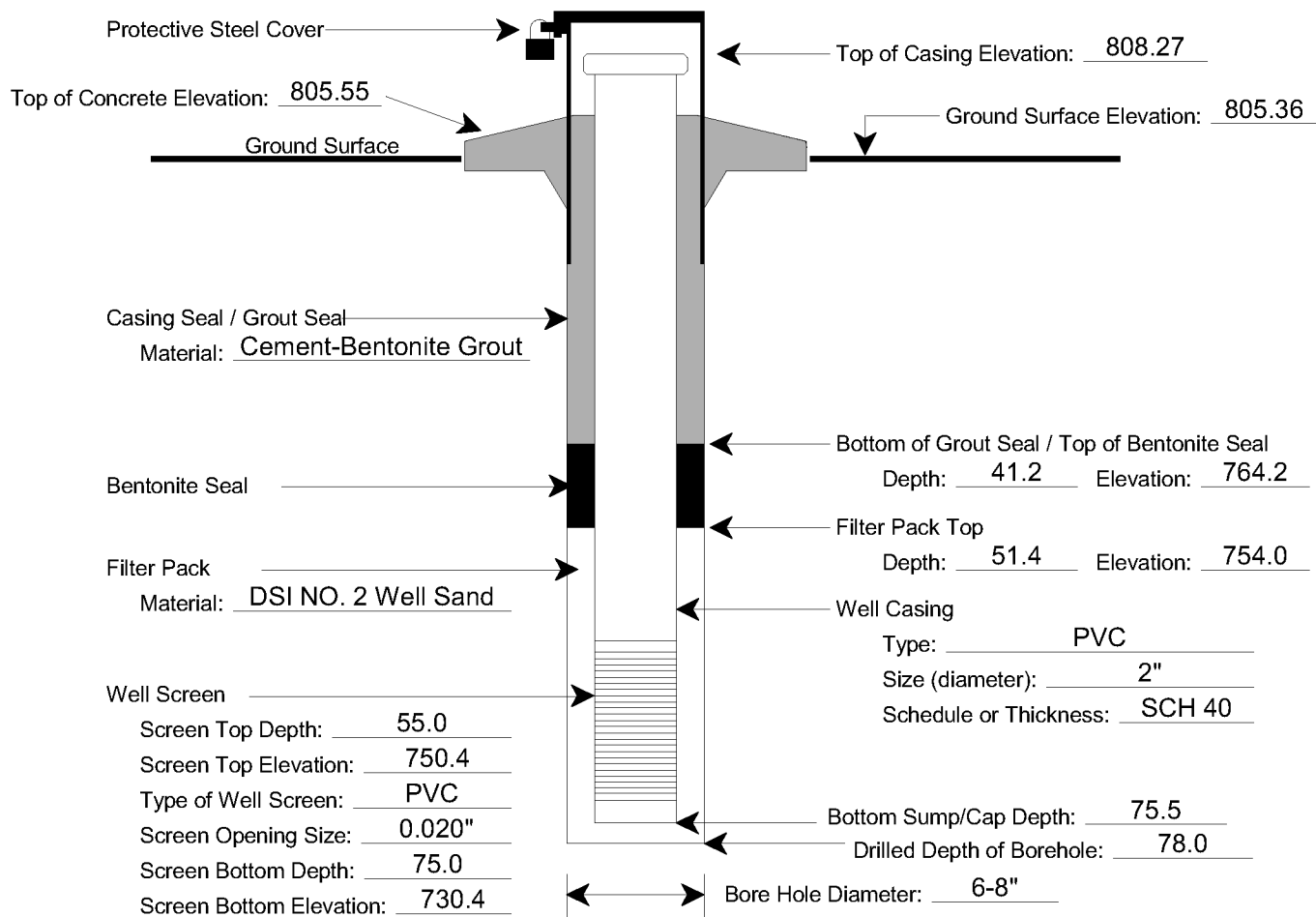
AMEC Inspector Supervising Well Installation: J. Goddard

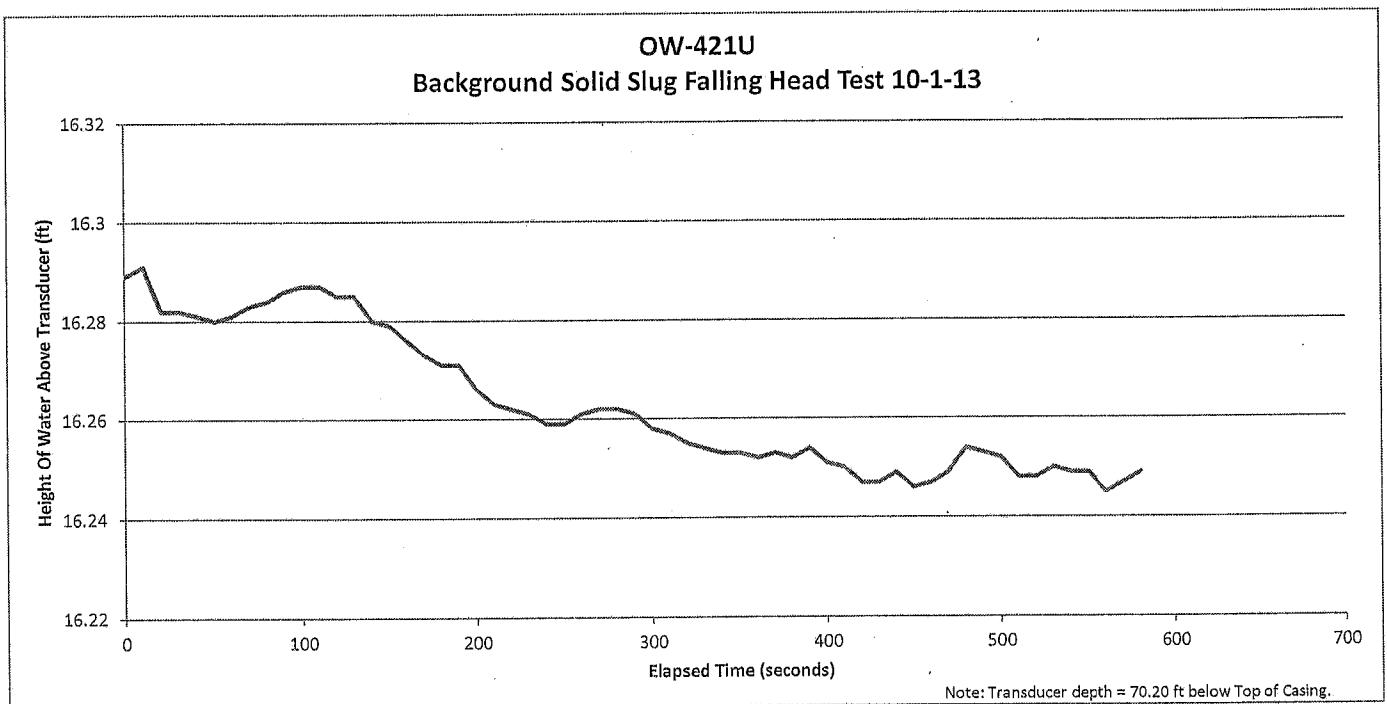
Static Water Level Elevation (NAVD88) collected December 9, 2013: 754.23

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

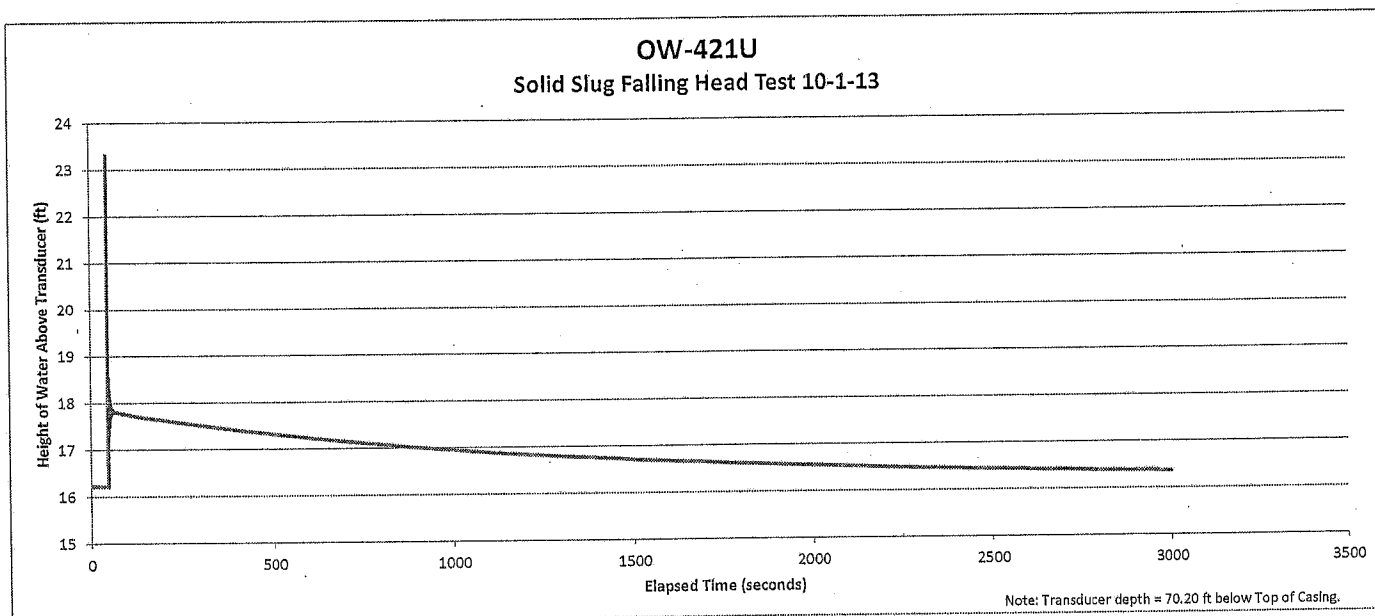
## DIAGRAM NOT TO SCALE





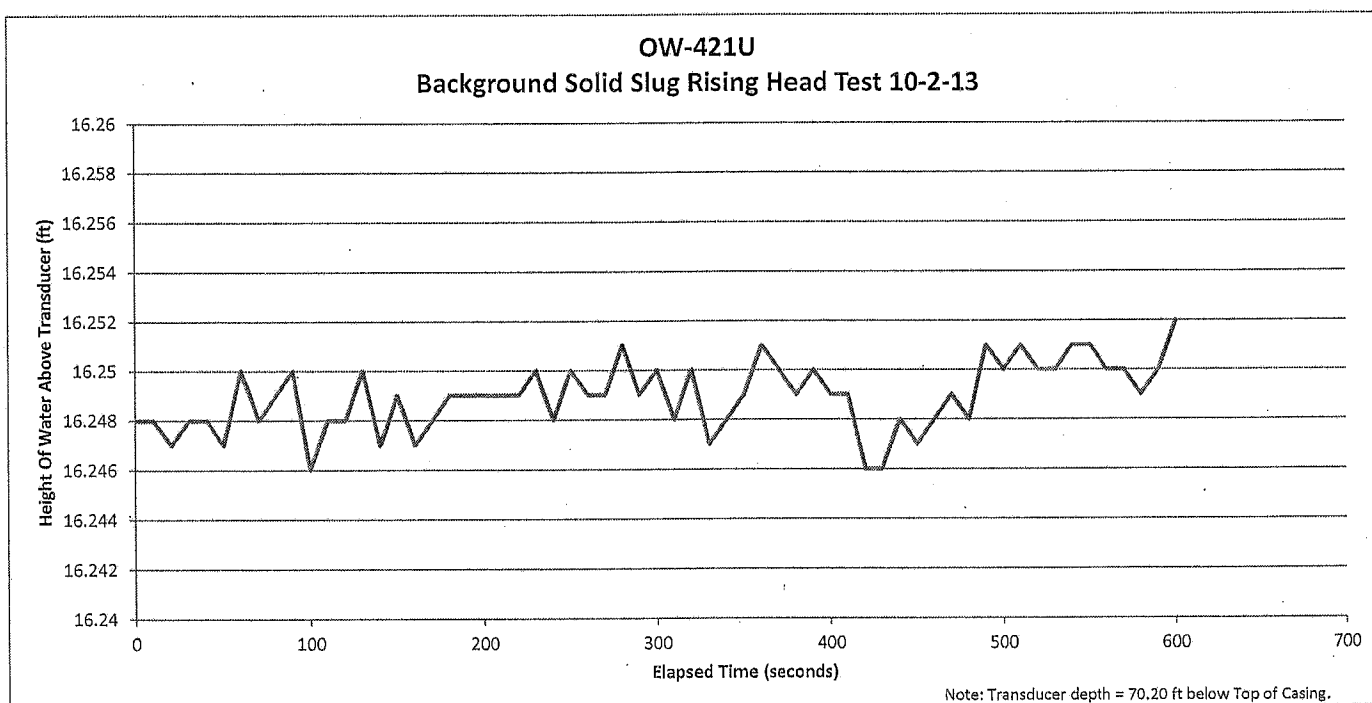
Prepared by/Date: KAL 11/10/14

Checked by/Date: JAD 11/11/14



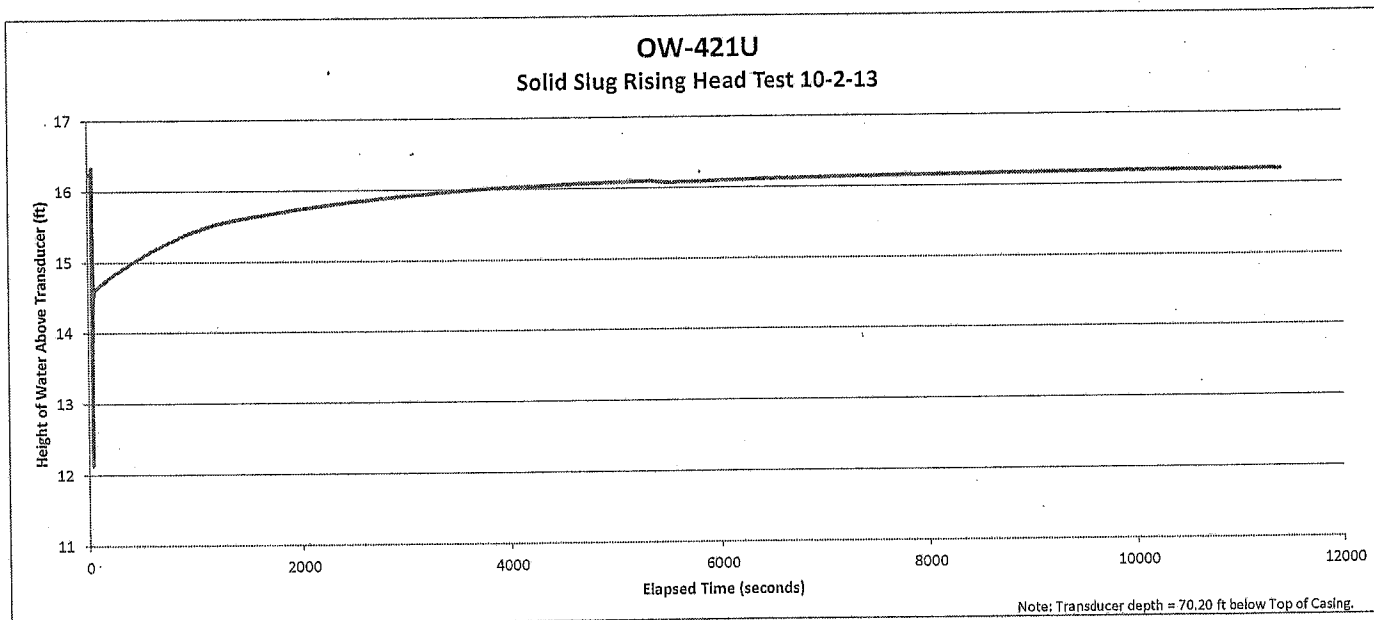
Prepared by/Date: KAL 1/10/14

Checked by/Date: JAW 1/11/14



Prepared by/Date: CHL 1/10/14

Checked by/Date: JOJ 1/11/14



Prepared by/Date: CHL 1/10/14

Checked by/Date: JOS 1/10/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-421L**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Solid**

**Test Dates: 10/2/2013; 10/8/2013; 10/9/2013; 10/14/2013**

Well Construction Diagram

**Plots:**

- Background water level for falling head test
- Falling head test
- Background water level for rising head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 421LBF 2013-10-02 10.43.09 (contains background data for falling head test)
- 421LF 2013-10-08 09.02.23 (contains test data for falling head test)
- 421LBR 2013-10-09 10.01.35 (contains background data for rising head test)
- 421LR 2013-10-14 08.43.27 (contains test data for rising head test)

**Notes:**

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 70.61 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: ELN-11/10/14

Checked by/Date: ASD 11/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-421L

Date of Observation Well Installation: 8/14/13

Date of Well Development: 9/19/13

Observation Well Northing: 570544.2 US ft Easting: 2446455.6 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

License No.: TN #658

## NOTES:

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/18/2013 through 9/19/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

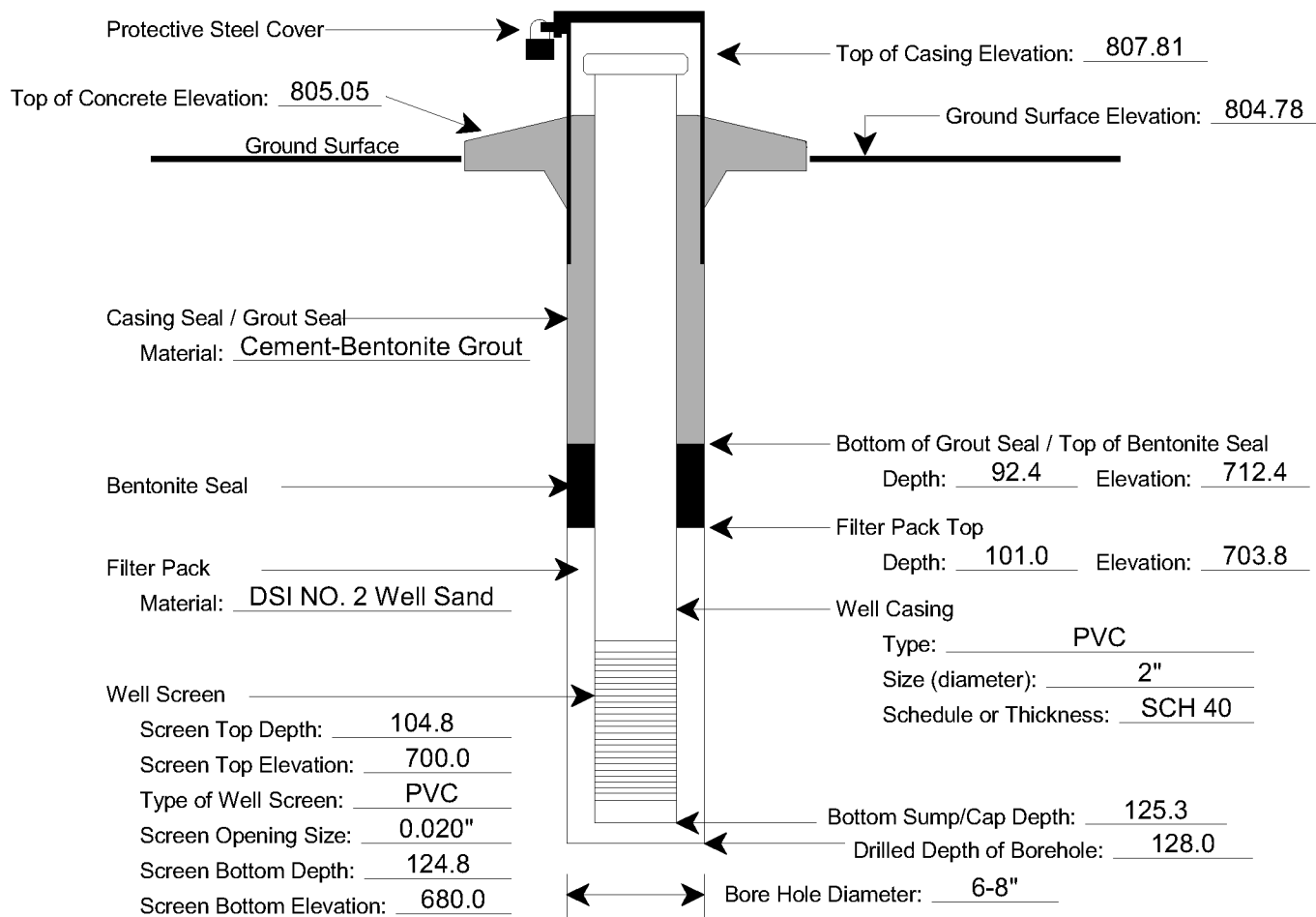
AMEC Inspector Supervising Well Installation: J. Goddard

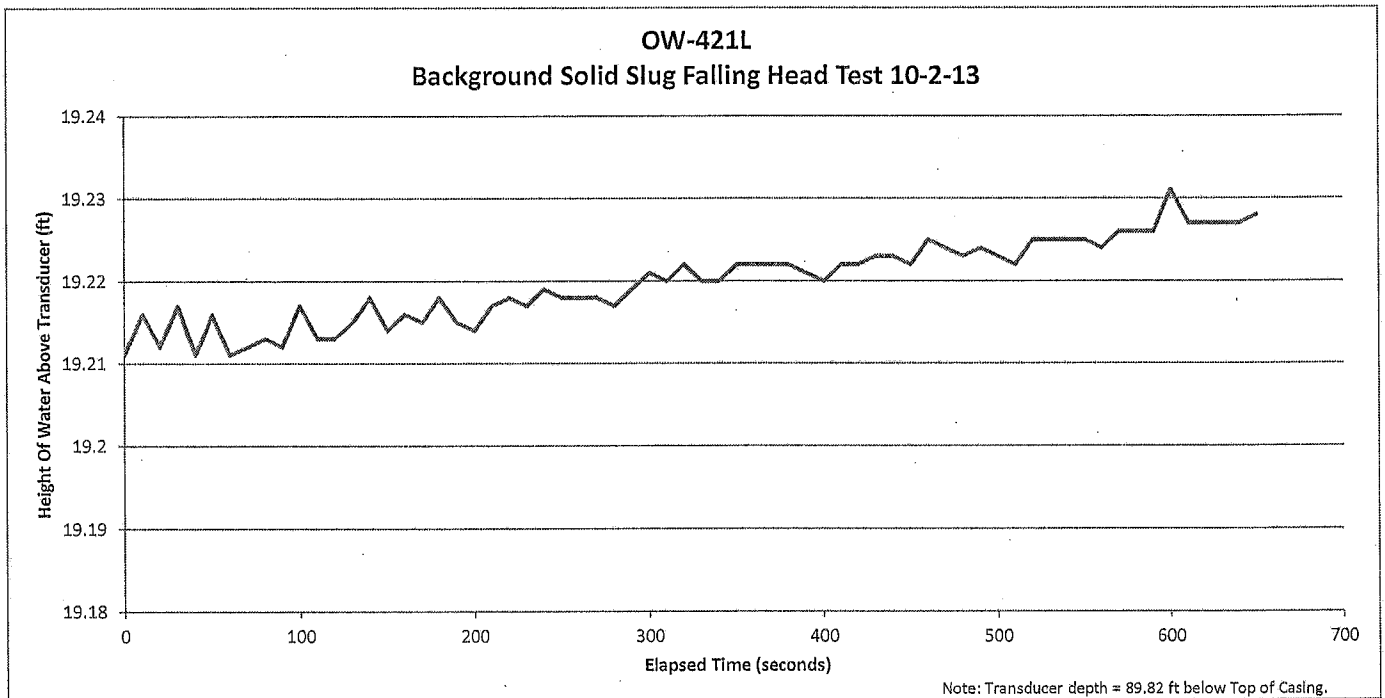
Static Water Level Elevation (NAVD88) collected December 9, 2013: 744.68

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE

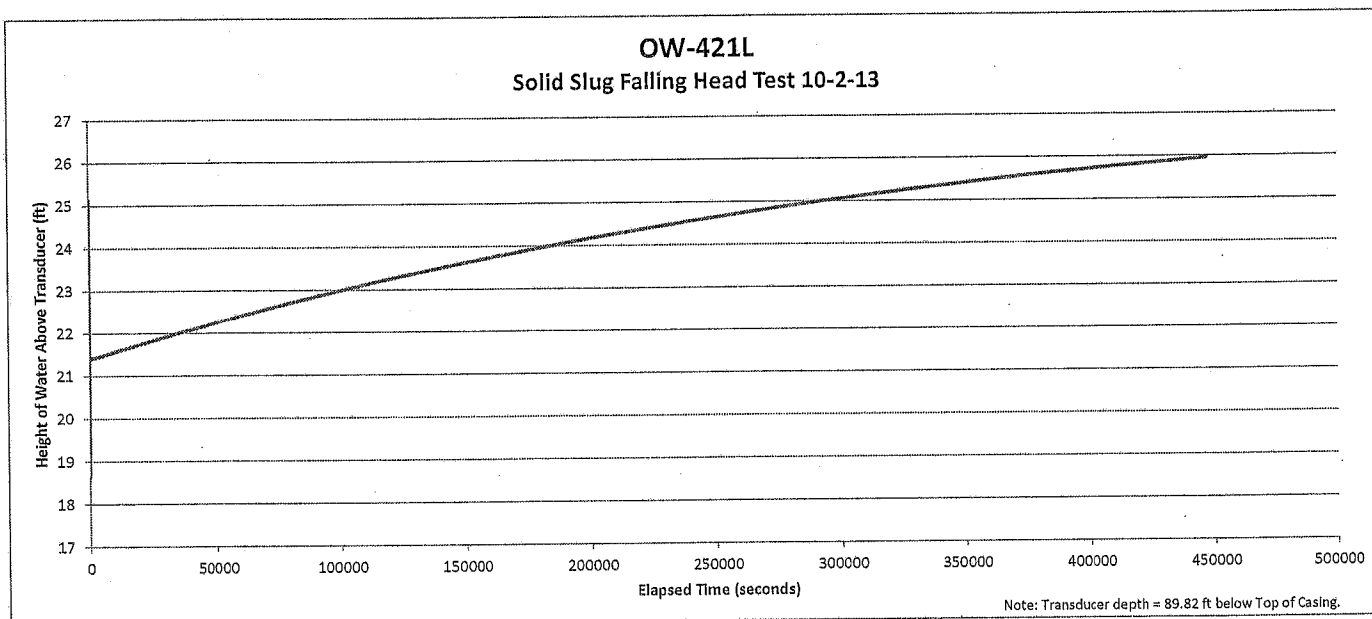




Prepared by/Date: ICHL 1/10/14

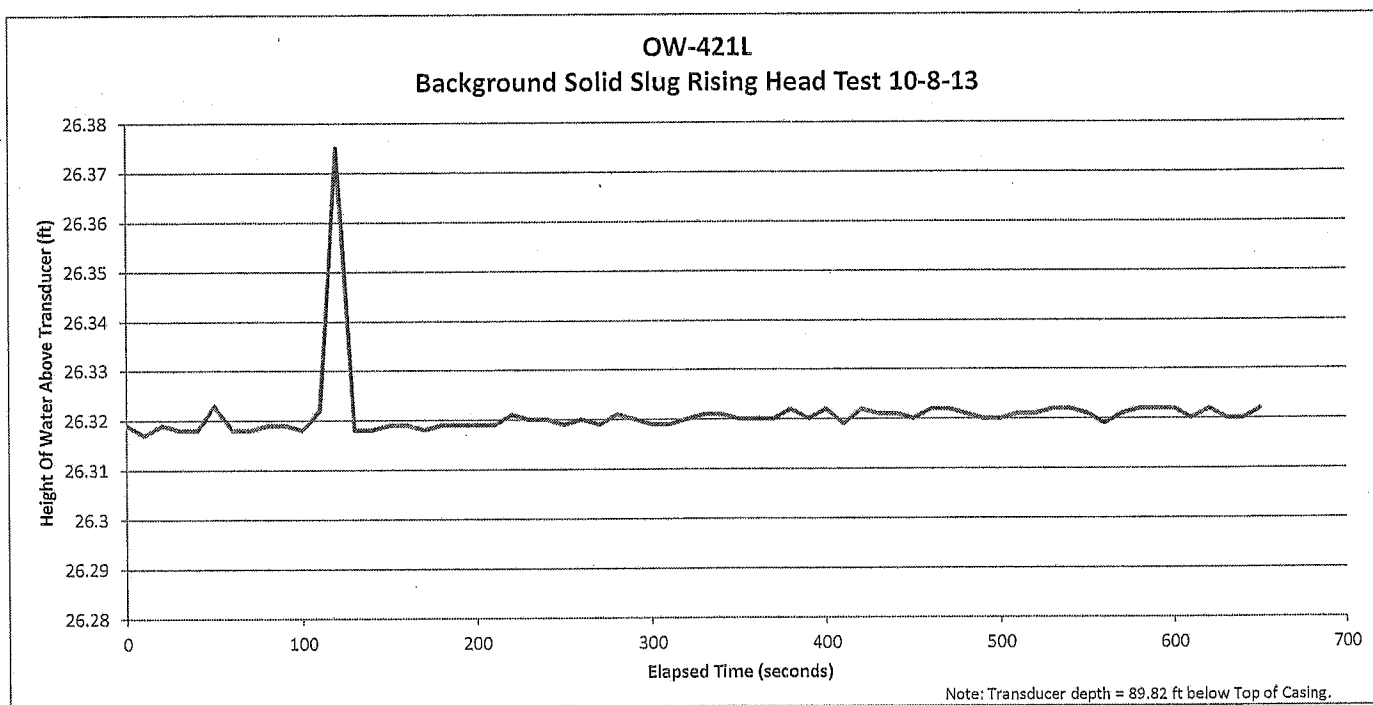
Checked by/Date: JCS 1/11/14





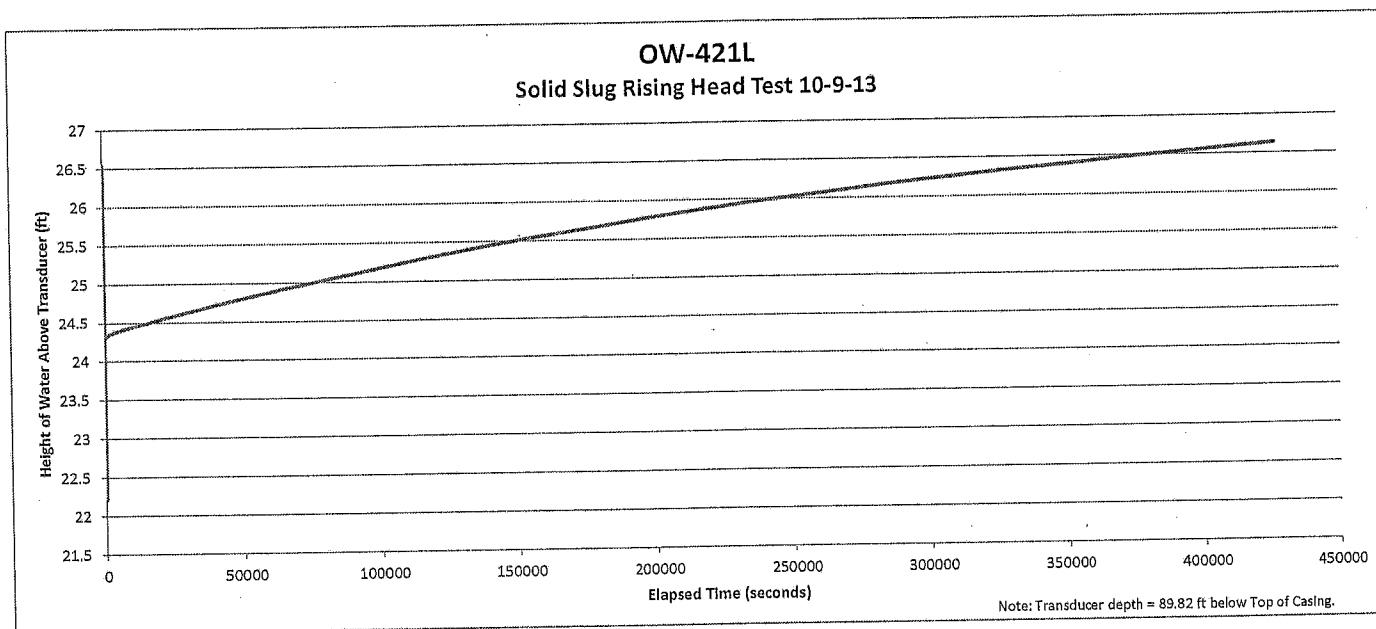
Prepared by/Date: KAL 1/10/14

Checked by/Date: JAS 1/11/14



Prepared by/Date: KLH 1/10/14

Checked by/Date: JAS 7/10/14



Prepared by/Date: KAL 1/10/14

Checked by/Date: JAS 1/10/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-421D**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Solid**

**Test Dates: 10/2/2013; 10/8/2013; 10/11/2013**

Well Construction Diagram

Plots:

- Background water level for falling head test
- Falling head test
- Background water level for rising head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 421DBF 2013-10-02 15.10.43 (contains background for falling head test)
- 421DF 2013-10-08 09.13.27 (contains test data for falling head test)
- 421DBR 2013-10-11 14.57.20 (contains background data for rising head test)
- 421DR 2013-10-11 14.52.30 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 135.66 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KL 1/10/14

Checked by/Date: KL 7/11/14

Clinch River Data Report Rev. 4 CRP-1112.16

Page E.4-144 of 185

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-421D

Date of Observation Well Installation: 8/13/13

Date of Well Development: 9/19/13

Observation Well Northing: 570520.1 US ft Easting: 2446424.4 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/19/2013 through 9/19/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

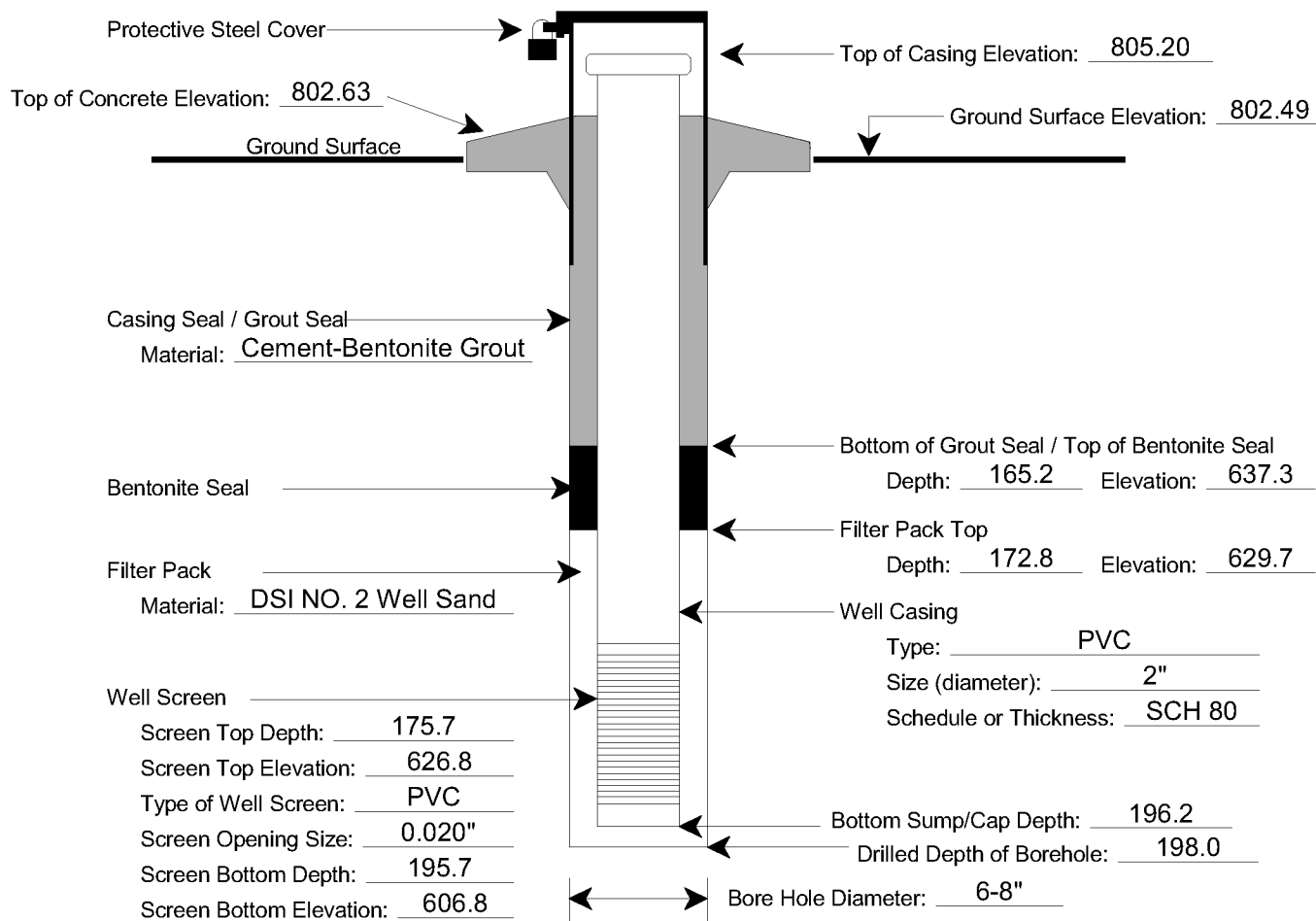
AMEC Inspector Supervising Well Installation: J. Goddard

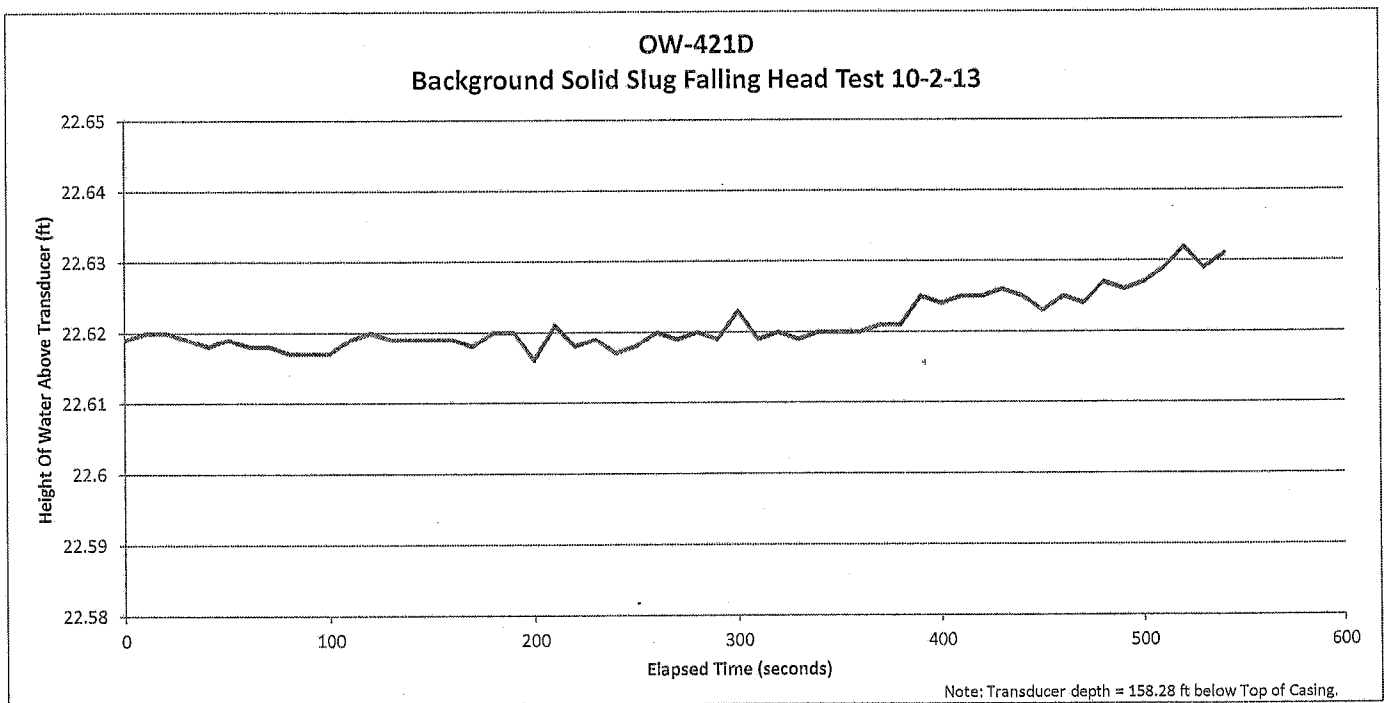
Static Water Level Elevation (NAVD88) collected December 9, 2013: 744.02

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

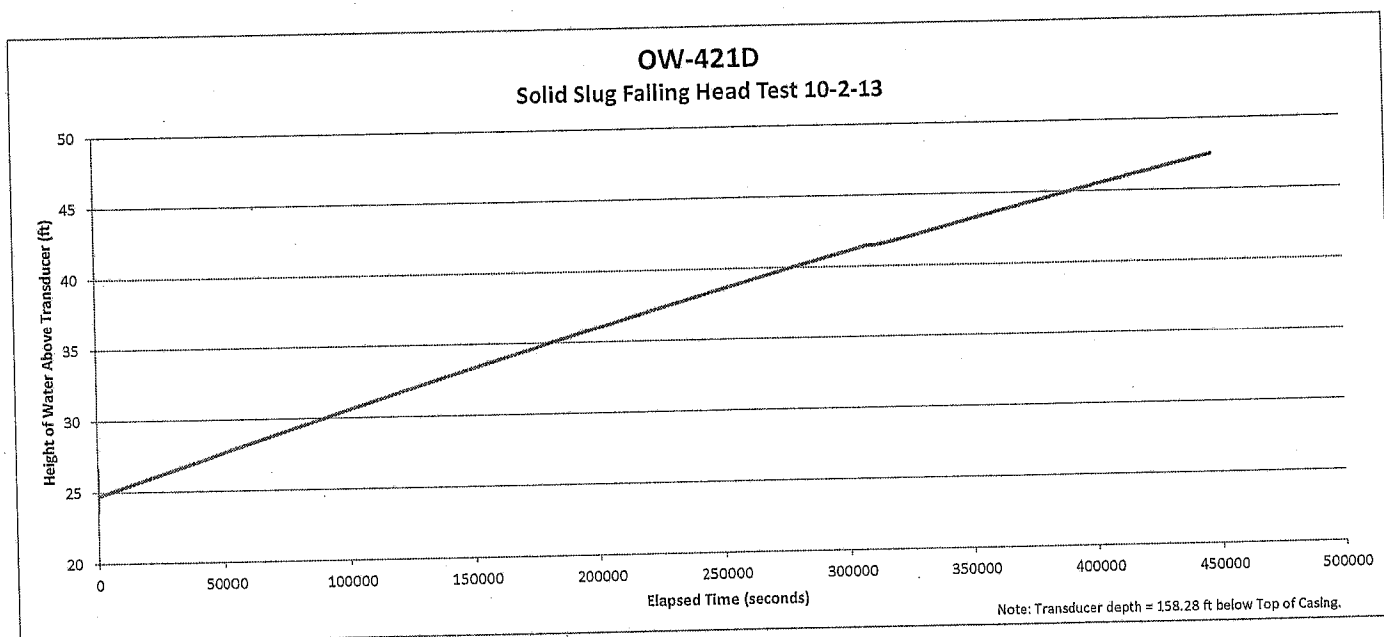
DIAGRAM NOT TO SCALE





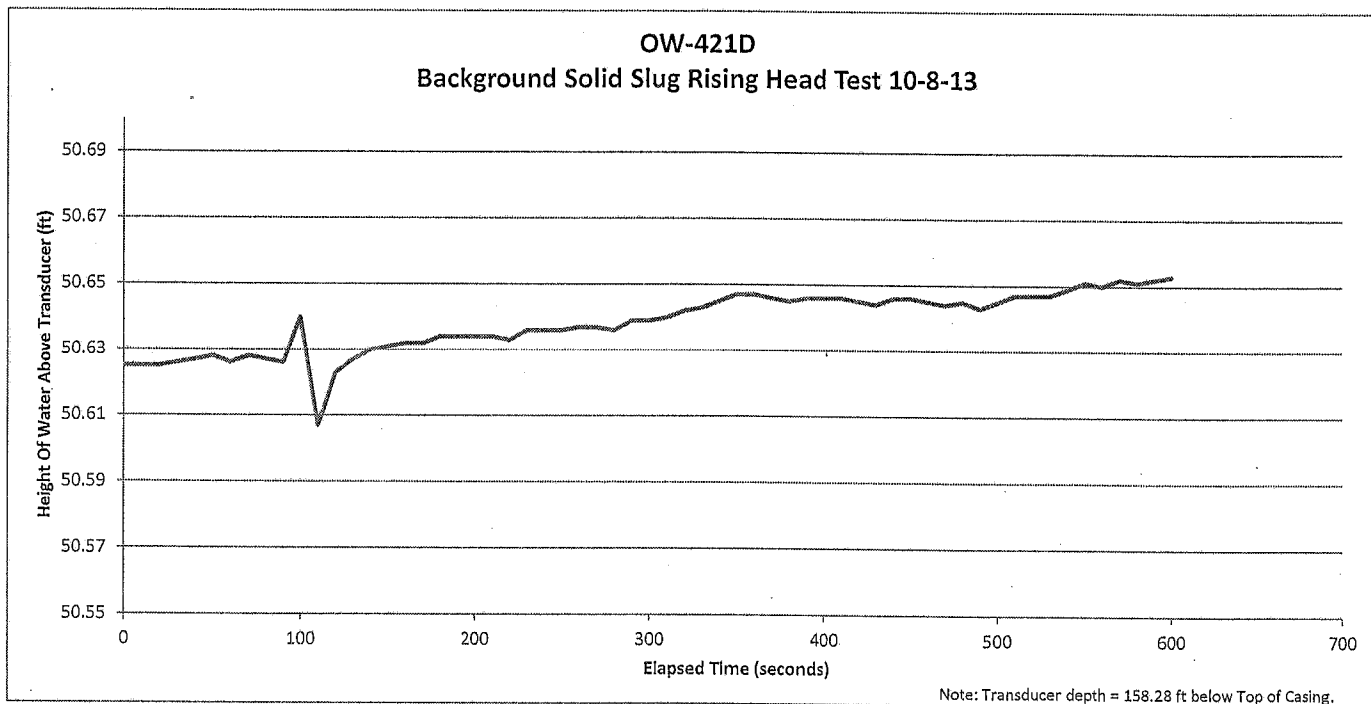
Prepared by/Date: ICW 11/10/14

Checked by/Date: JOZ 11/11/14



Prepared by/Date: KAL 1/10/14

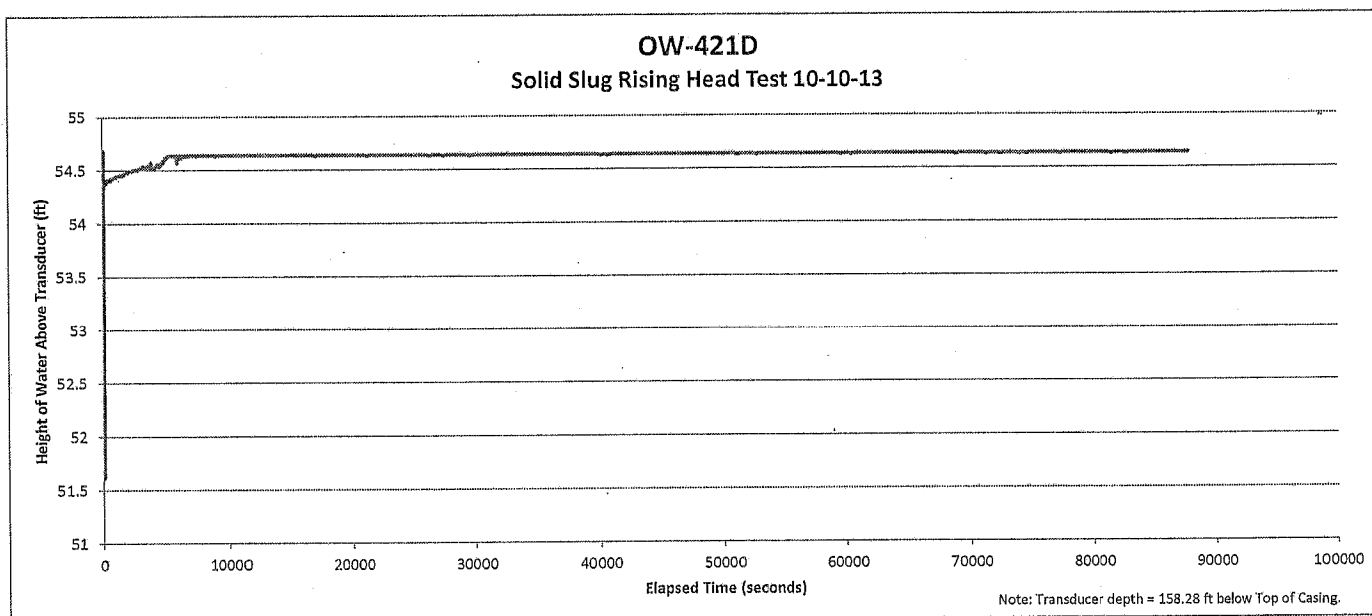
Checked by/Date: JDS 1/11/14



Prepared by/Date: KHL 1/10/14

Checked by/Date: [Signature] 1/11/14





Prepared by/Date: KHL/10/14

Checked by/Date: JS/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-423U**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/15/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 423UBR 2013-09-15 14.36.08 (contains background and pressurization/equalization data for rising head test)
- 423UR 2013-09-15 14.34.16 (contains test data for rising head test)
- 423UBF 2013-09-15 14.37.47 (contains background and vacuum/equalization data for falling head test)
- 423UF 2013-09-15 13.05.22 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 39.58 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAC 11/14

Checked by/Date: gog 11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-423U

Date of Observation Well Installation: 8/18/13

Date of Well Development: 9/1/13

Observation Well Northing: 571494.1 US ft Easting: 2448309.5 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed approximately 21.0 and 41.0 feet below ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 8/31/2013 through 9/1/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

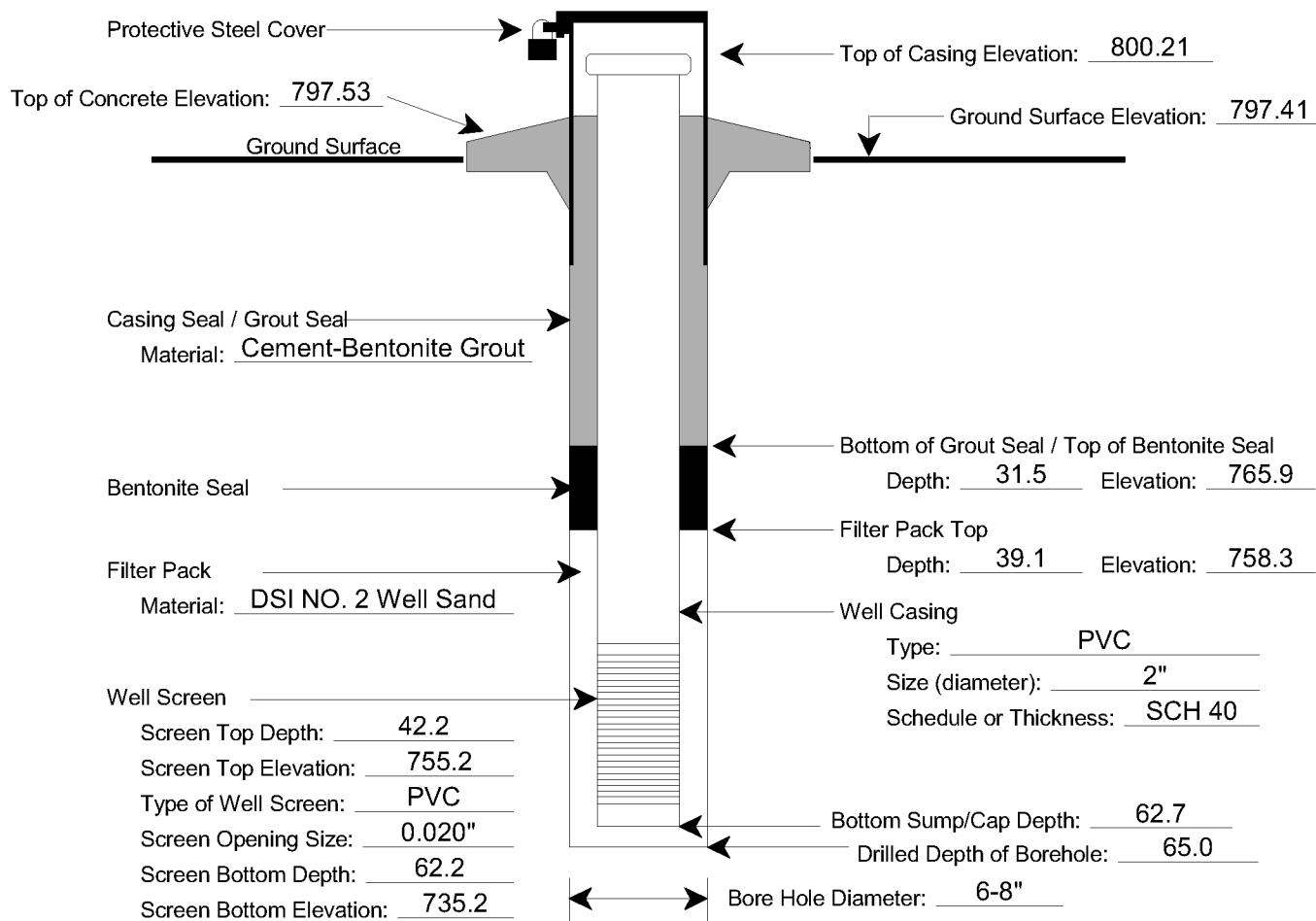
AMEC Inspector Supervising Well Installation: J. Goddard

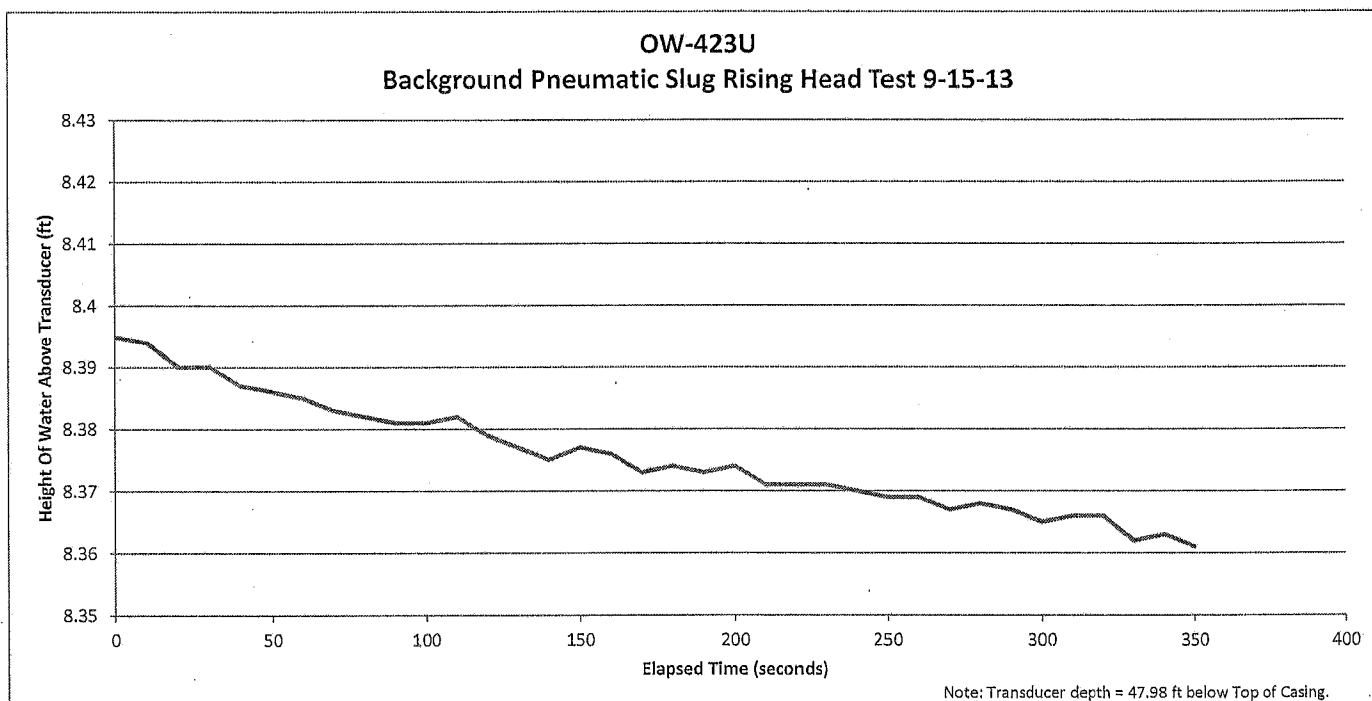
Static Water Level Elevation (NAVD88) collected December 9, 2013: 765.60

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

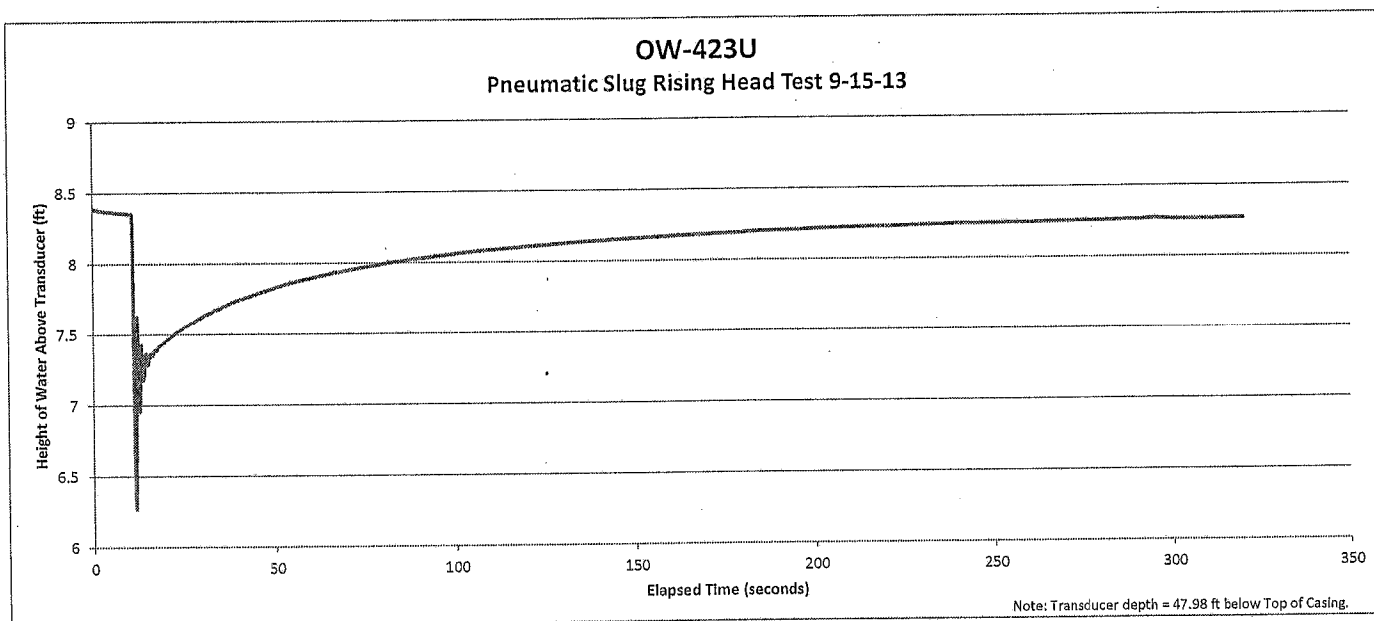
## DIAGRAM NOT TO SCALE





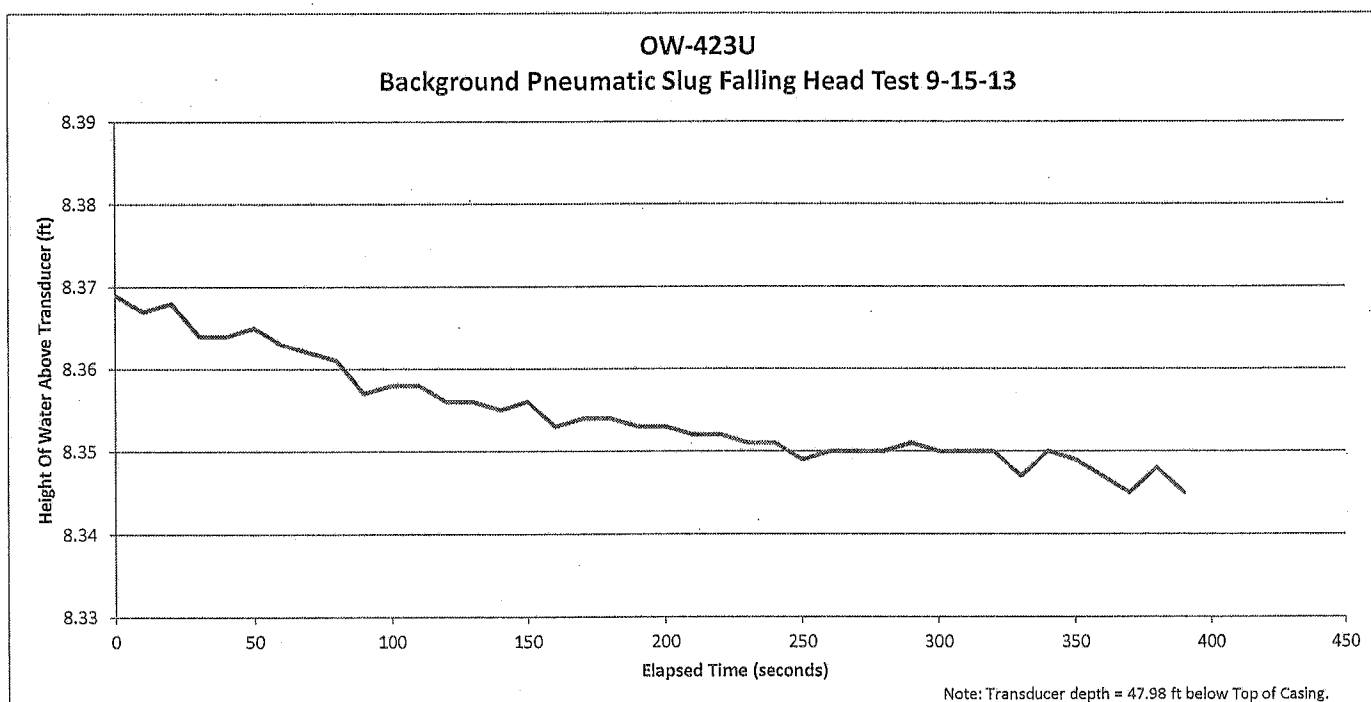
Prepared by/Date: KHL 1/10/14

Checked by/Date: JGJ 1/11/14



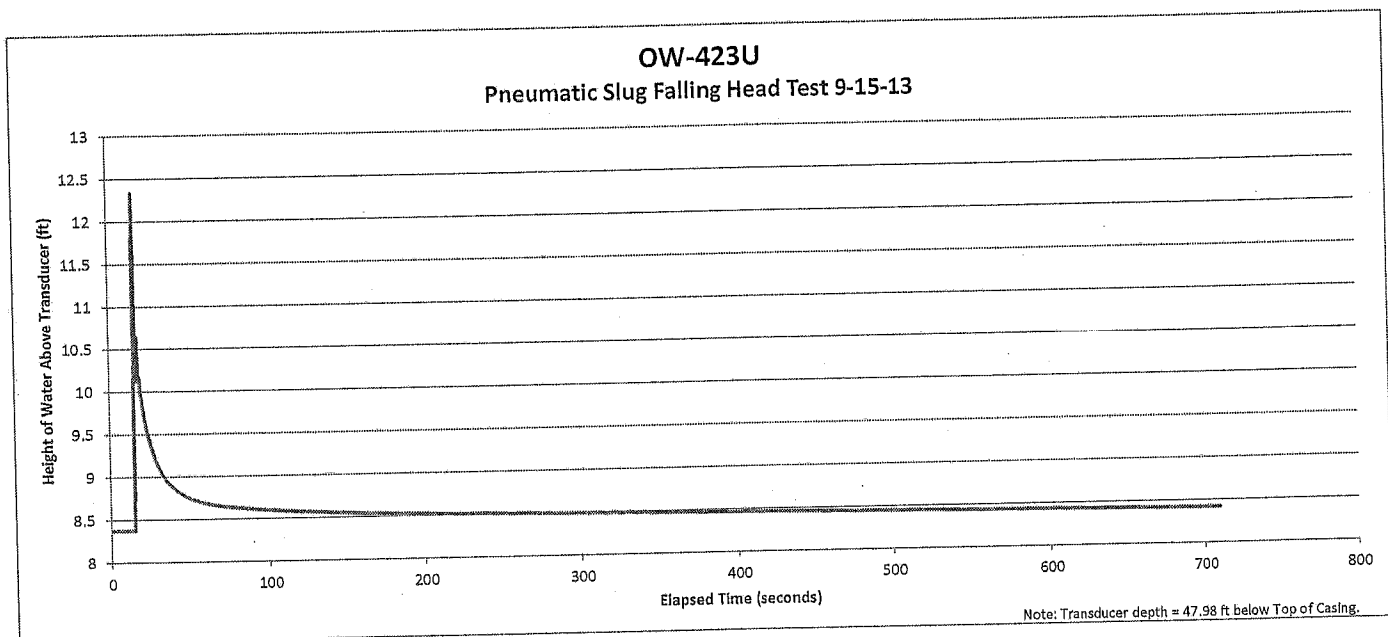
Prepared by/Date: KAL 1/10/14

Checked by/Date: JAS 1/11/14



Prepared by/Date: KAL 1/10/14

Checked by/Date: JAG 1/11/14



Prepared by/Date: KHL 1/16/14

Checked by/Date: JJ 1/16/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-423L**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Solid**

**Test Dates: 9/16/2013**

Well Construction Diagram

Plots:

- Background water level for falling head test
- Falling head test
- Background water level for rising head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 423LBF 2013-09-16 11.58.12 (contains background data for falling head test)
- 423LF 2013-09-16 12.36.09 (contains test data for falling head test)
- 423LBR 2013-09-16 13.19.04 (contains background data for rising head test)
- 423LR 2013-09-16.16.48.49 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 30.72 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAL 1/10/14

Checked by/Date: JS 1/11/14



# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-423L

Date of Observation Well Installation: 8/17/13

Date of Well Development: 9/2/13

Observation Well Northing: 571481.6 US ft Easting: 2448293.2 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/1/2013 through 9/2/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

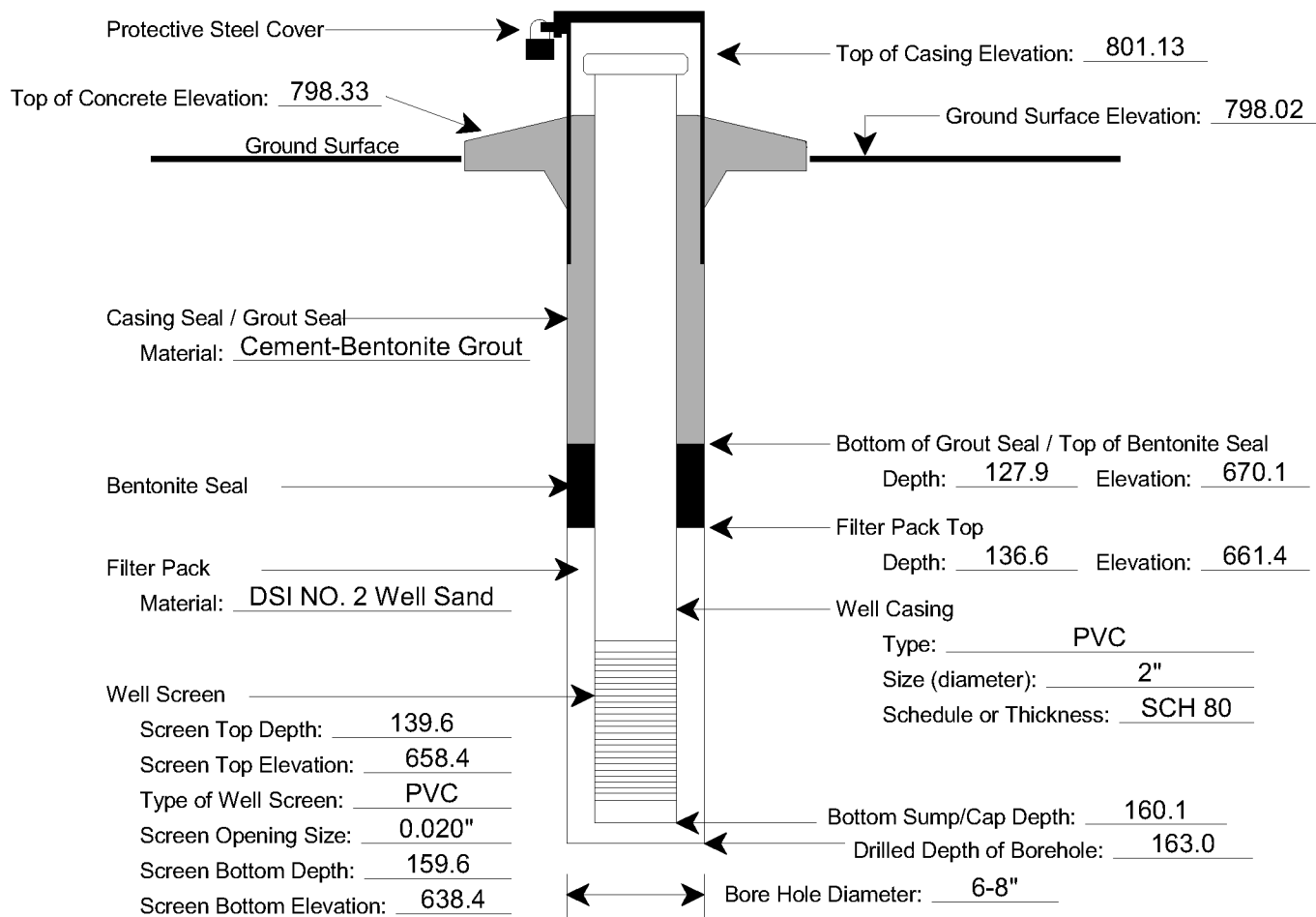
AMEC Inspector Supervising Well Installation: J. Goddard

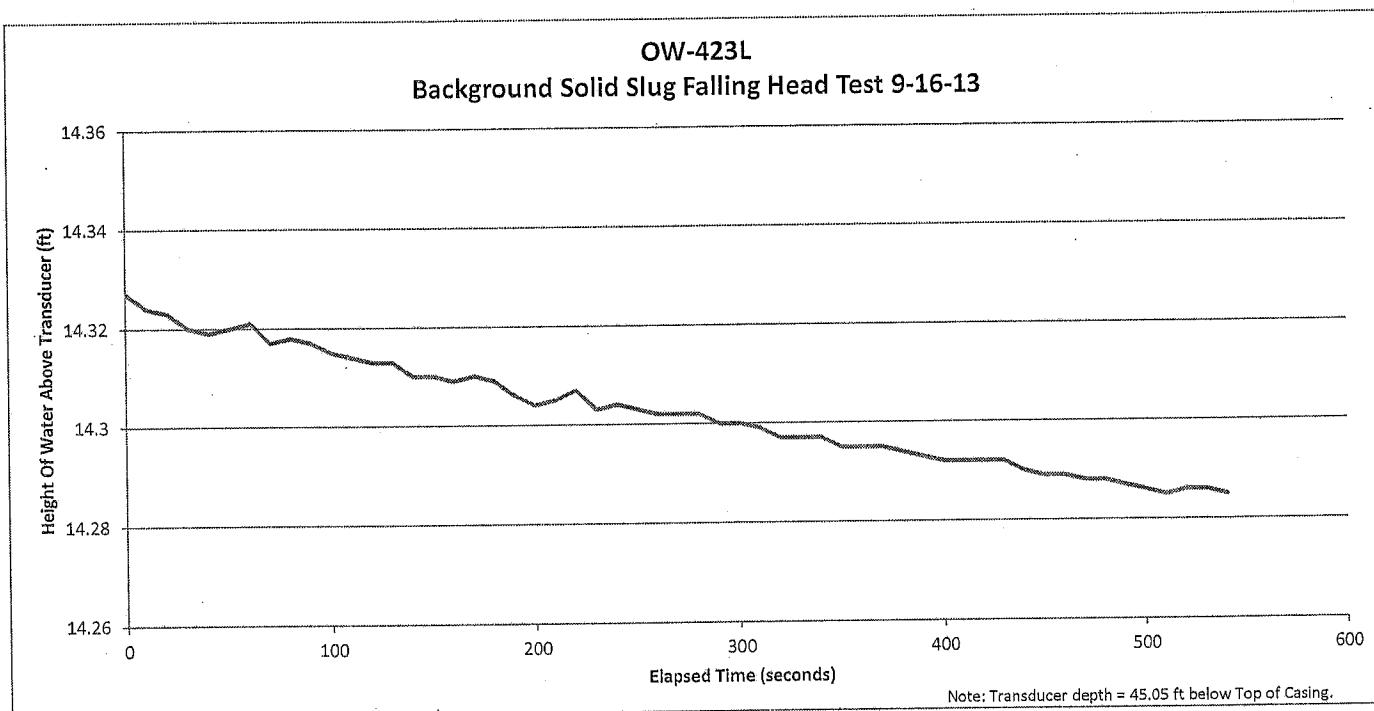
Static Water Level Elevation (NAVD88) collected December 9, 2013: 780.29

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

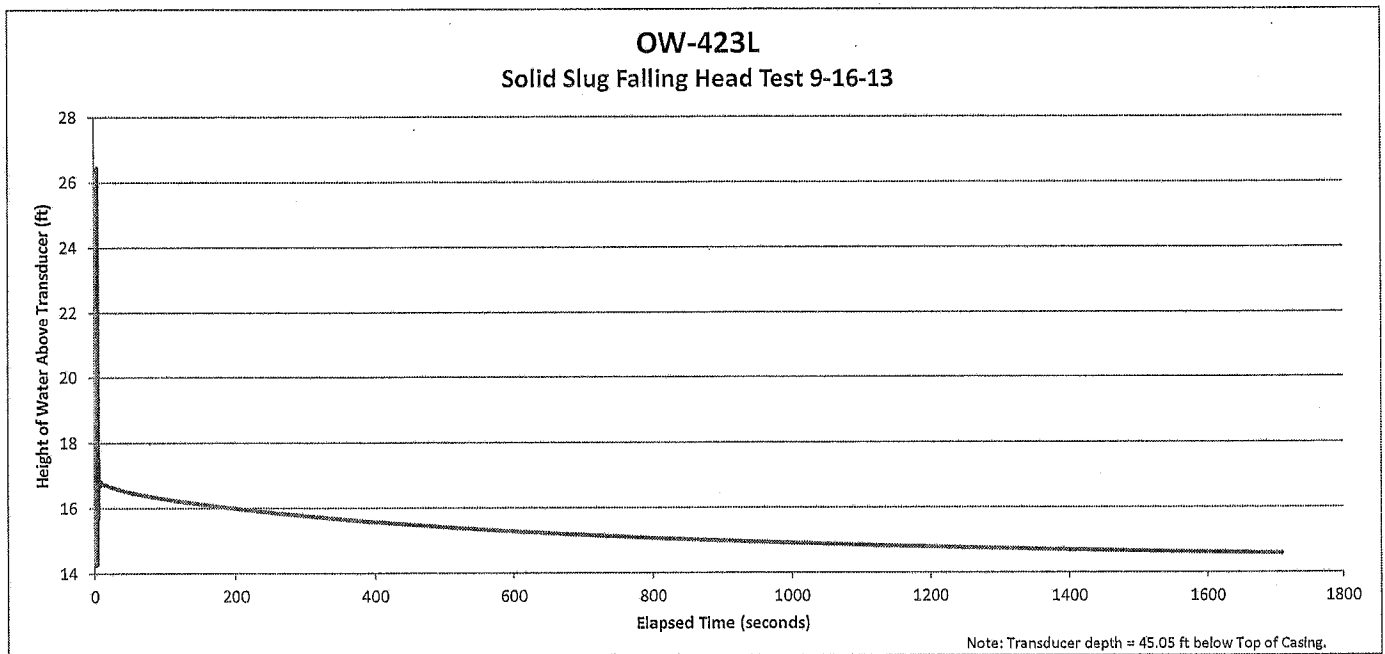
DIAGRAM NOT TO SCALE





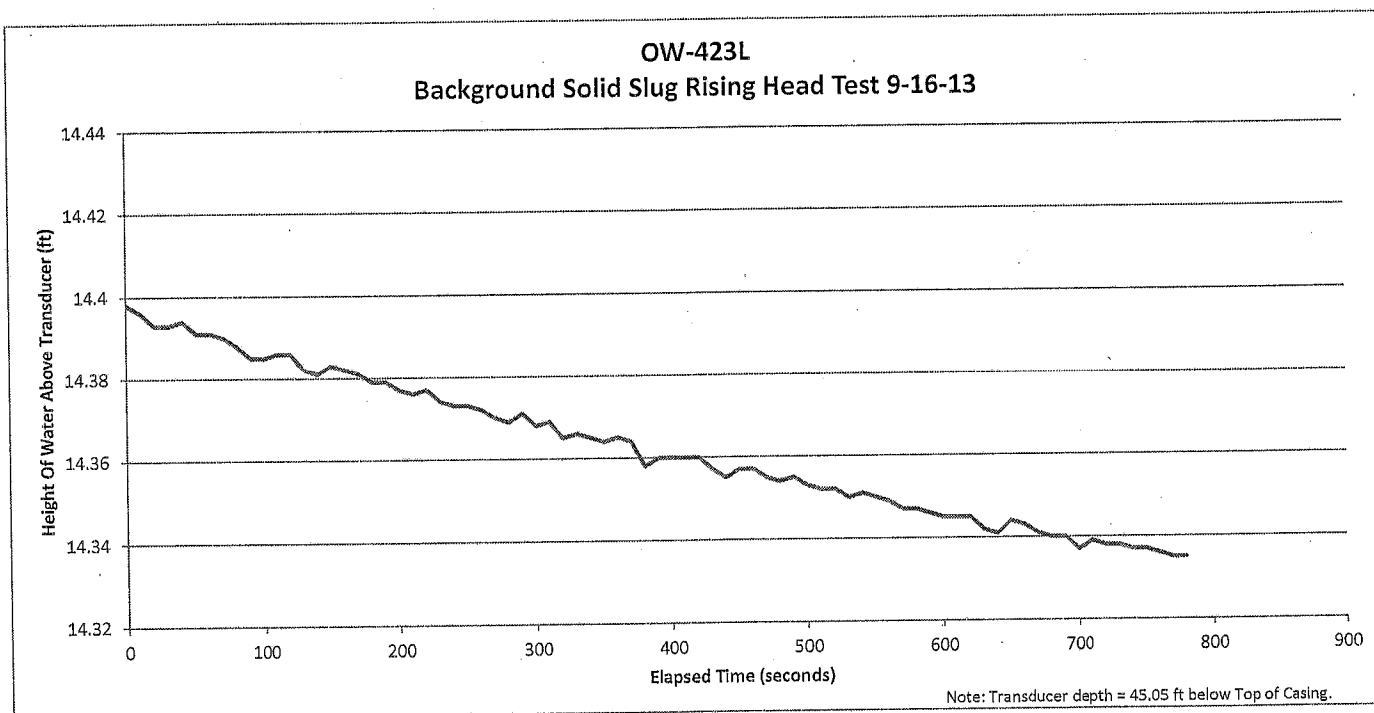
Prepared by/Date: KBL 1/10/14

Checked by/Date: JG 1/11/14



Prepared by/Date: KHL 1/10/14

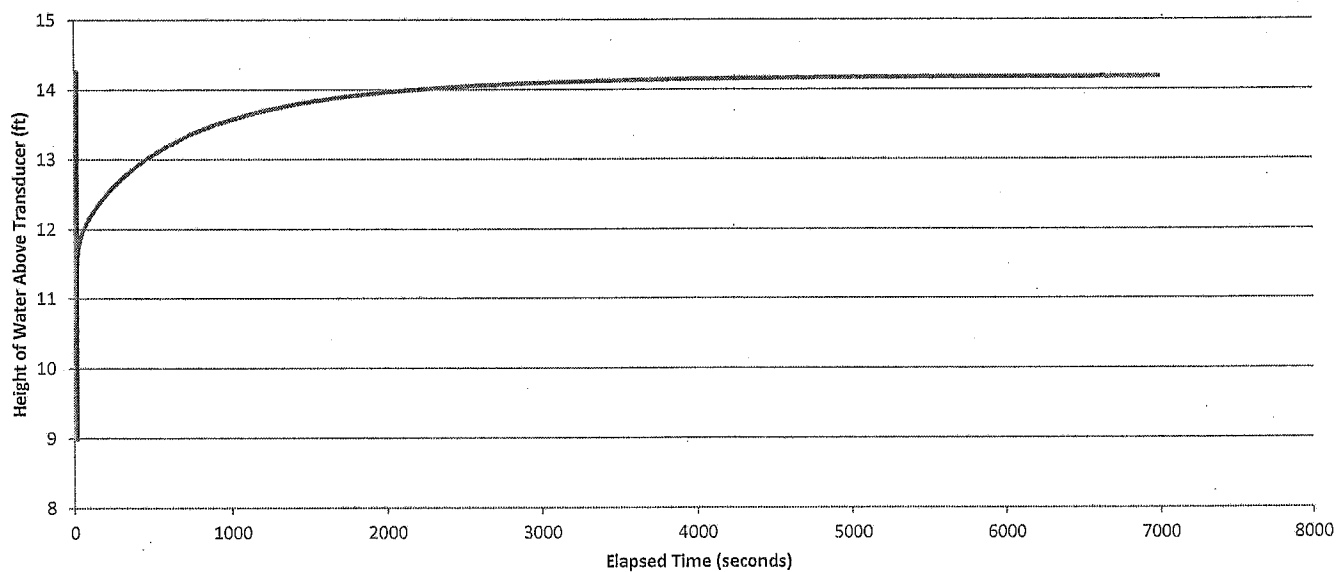
Checked by/Date: JAJ 1/10/14



Prepared by/Date: KAL 1/15/14

Checked by/Date: MS 1/16/14

**OW-423L**  
**Solid Slug Rising Head Test 9-16-13**



Prepared by/Date: KHL 1/10/14

Checked by/Date: JRS 1/14/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-423D**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Pneumatic**

**Test Dates: 9/15/2013; 9/16/2013**

Well Construction Diagram

Plots:

- Background water level for rising head test
- Rising head test
- Background water level for falling head test
- Falling head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 423DBR 2013-09-15 16.12.55 (contains background and pressurization/equalization data for rising head test)
- 423DR 2013-09-15 18.03.46 (contains test data for rising head test)
- 423DBF 2013-09-16 16.21.46 (contains background and vacuum/equalization data for falling head test)
- 423DF 2013-09-16 17.28.12 (contains test data for falling head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background and pressurization (or vacuum)/equalization file prior to initiating a test; only that time frame from the "background" file is plotted.
2. Static water level (below top of casing) prior to testing = 29.86 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAL 1/10/14

Checked by/Date: AG 1/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-423D

Date of Observation Well Installation: 8/16/13

Date of Well Development: 9/13/13

Observation Well Northing: 571457.9 US ft Easting: 2448262.0 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 9/4/2013 through 9/13/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

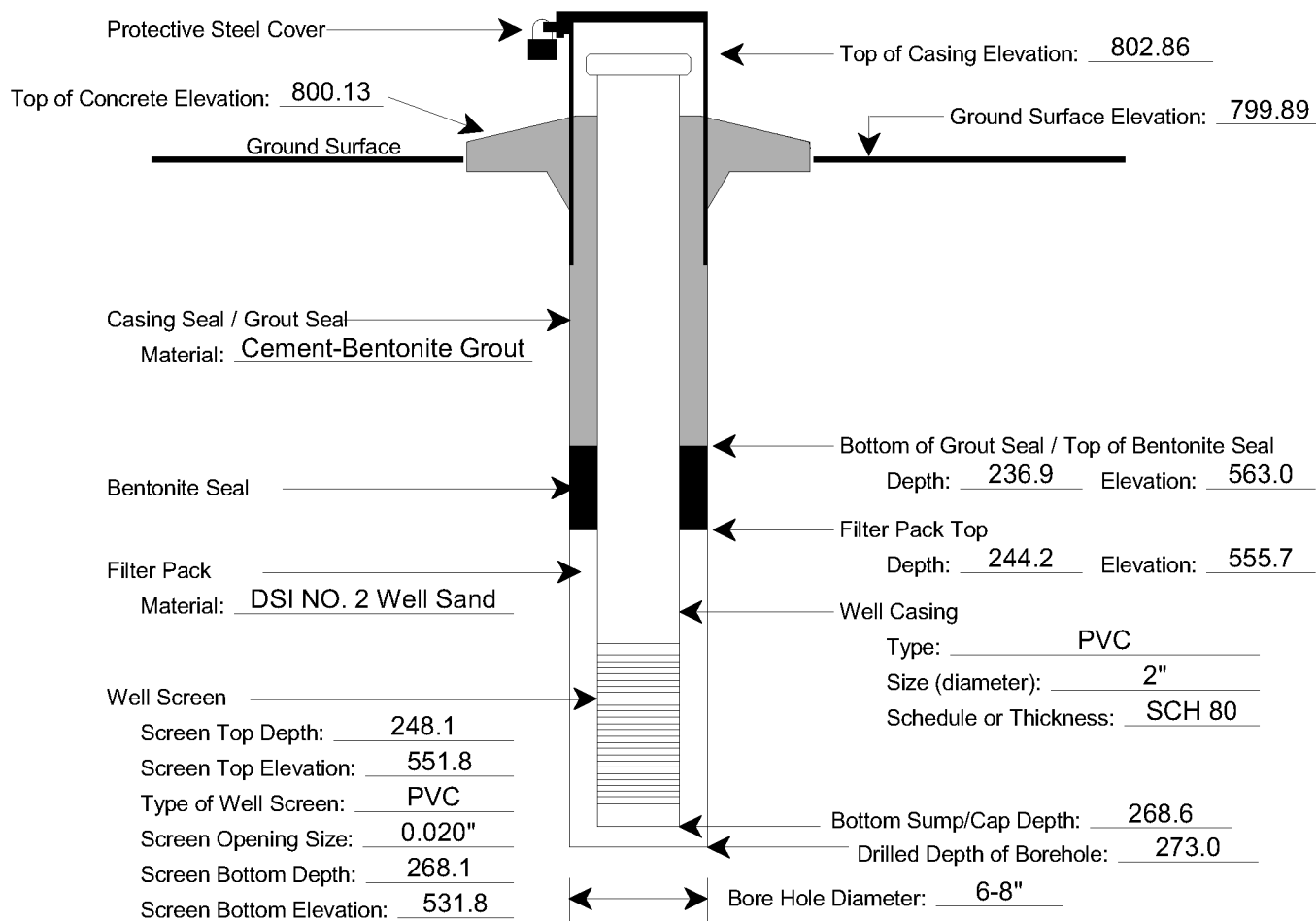
AMEC Inspector Supervising Well Installation: J. Goddard

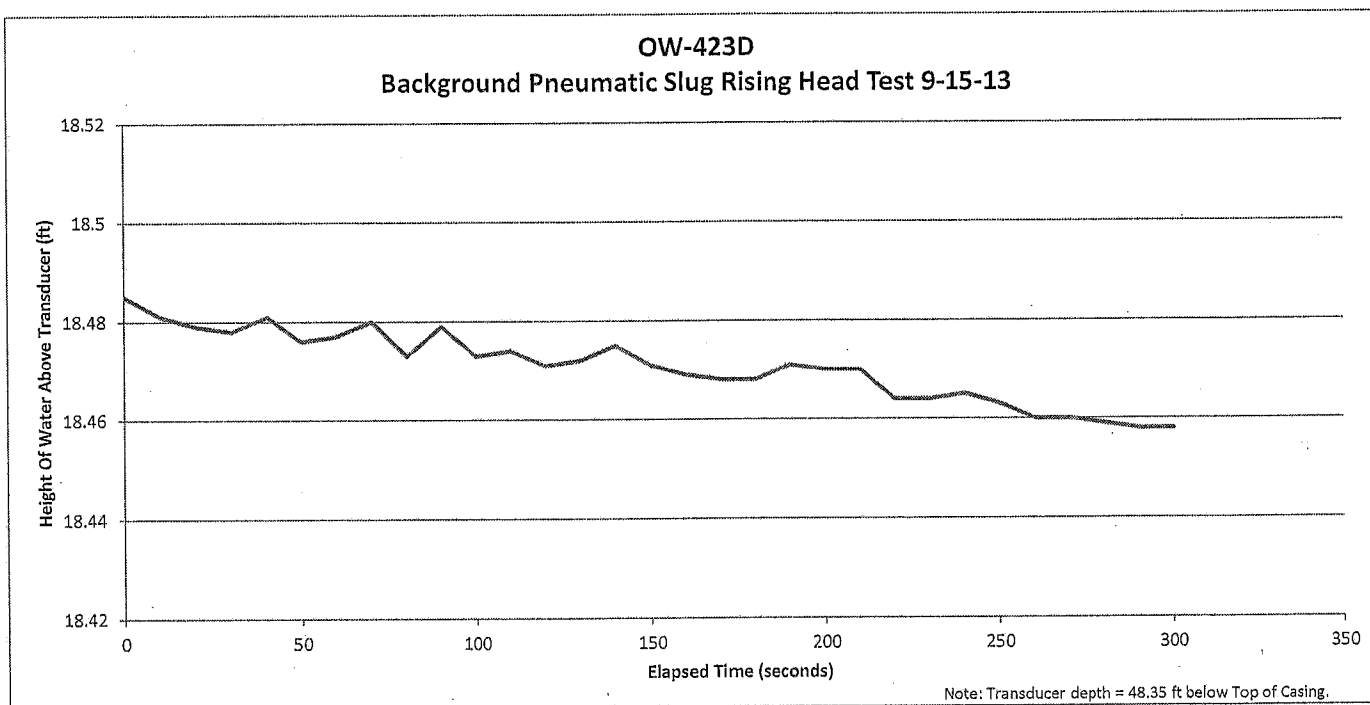
Static Water Level Elevation (NAVD88) collected December 9, 2013: 782.28

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

DIAGRAM NOT TO SCALE

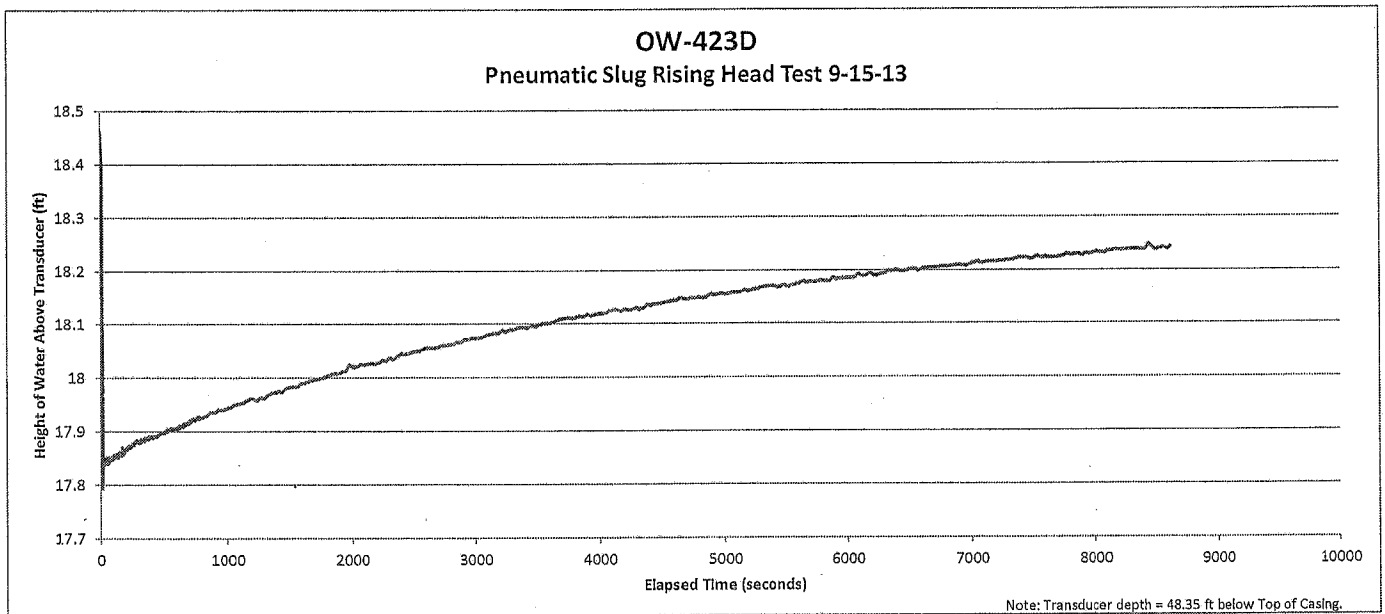




Prepared by/Date: KAL 1/10/14

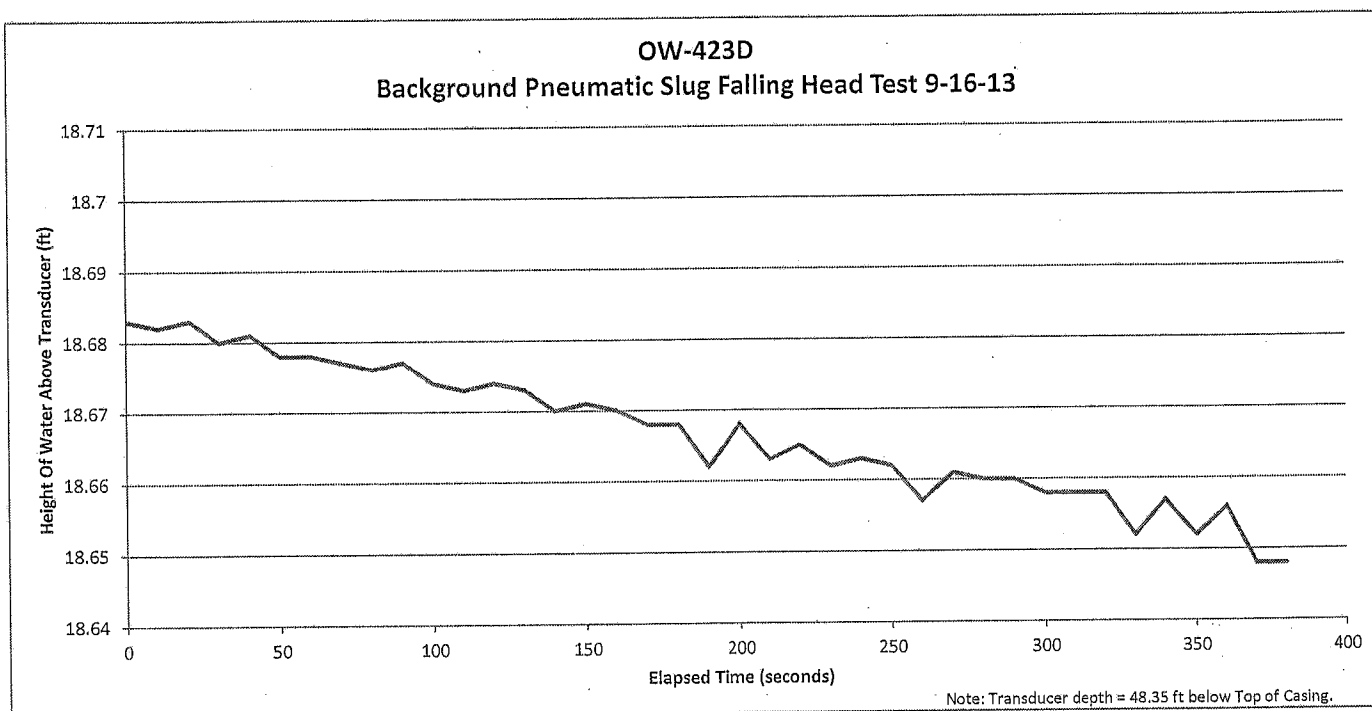
Checked by/Date: JDS 1/11/14





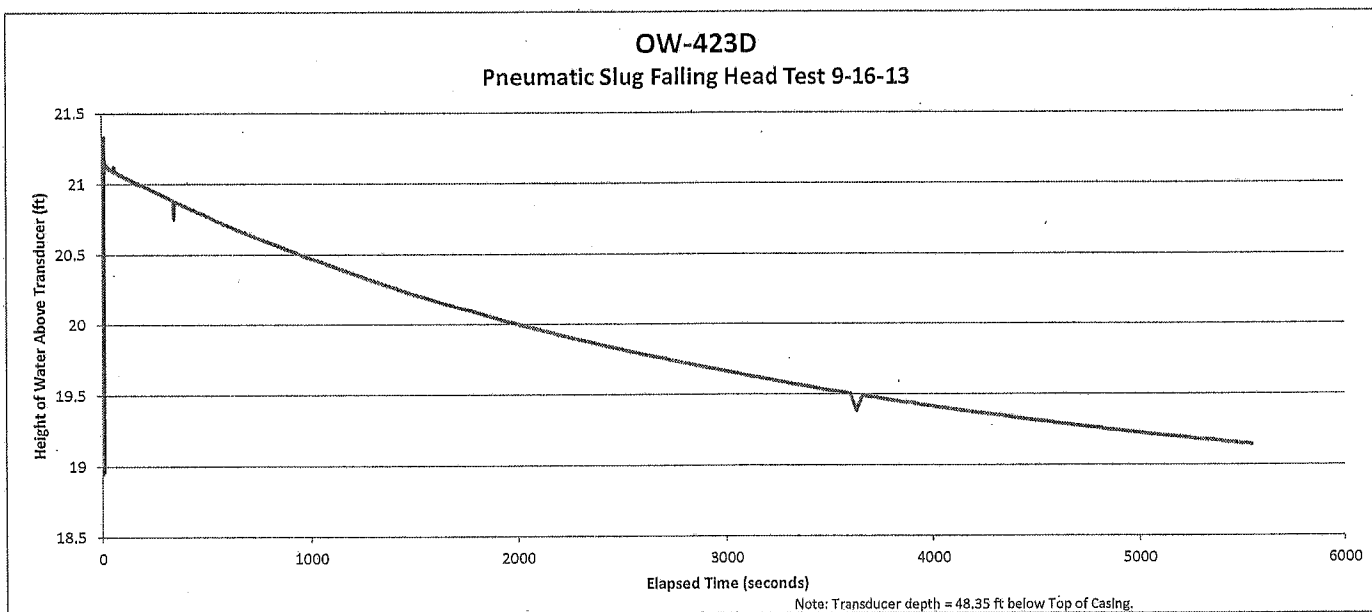
Prepared by/Date: KAL 1/10/14

Checked by/Date: JAS 1/11/14



Prepared by/Date: KHL 1/10/14

Checked by/Date: JAL 1/11/14



Prepared by/Date: KHL 1/10/14

Checked by/Date: JAS 1/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-428U  
Test Method: ASTM D 4044-96 (2008), Sections 8 and 9  
Test Type: Solid  
Test Dates: 11/10/2013**

Well Construction Diagram

Plots:

- Background water level for falling head test
- Falling head test
- Background water level for rising head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 428UBGF 2013-11-10 13.58.02 (contains background data for falling head test)
- 428UF 2013-11-10 13.57.49 (contains test data for falling head test)
- 428UBGR 2013-11-10 13.57.09 (contains background data for rising head test)
- 428UR 2013-11-10 13.56.52 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 42.56 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAR 11/10/14

Checked by/Date: GRJ 11/11/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-428U

Date of Observation Well Installation: 10/16/13

Date of Well Development: 10/31/13

Observation Well Northing: 570781.4 US ft Easting: 2448710.6 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 10/30/2013 through 10/31/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

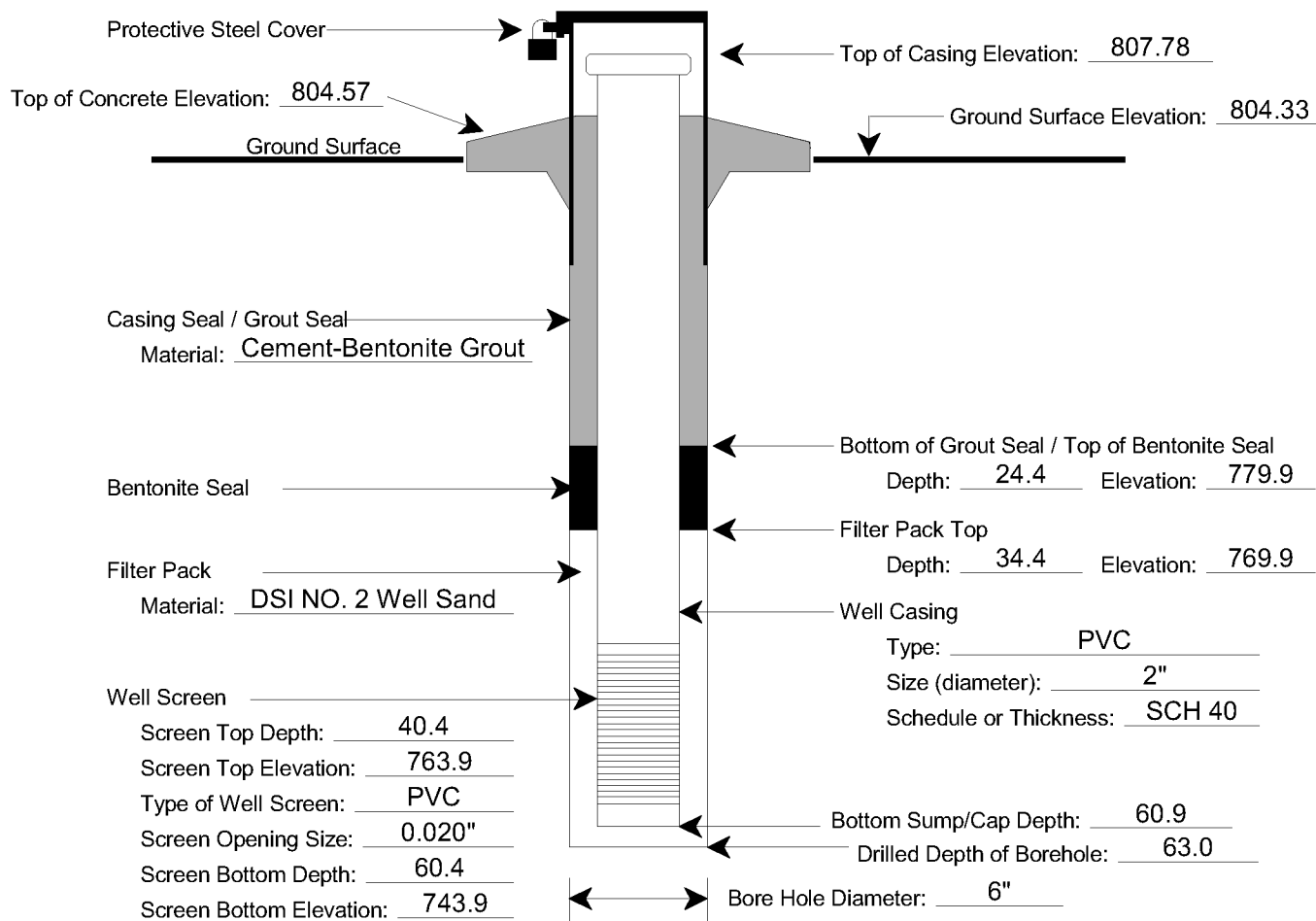
AMEC Inspector Supervising Well Installation: N. Smith

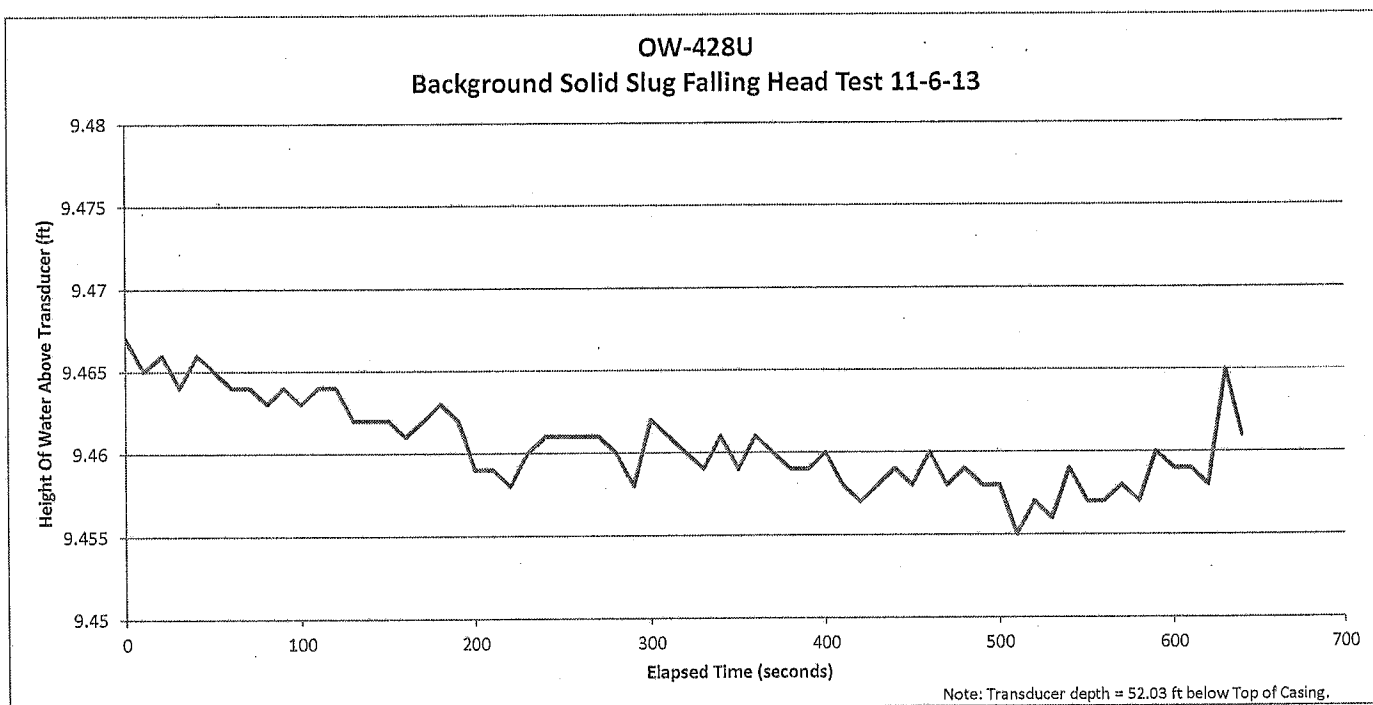
Static Water Level Elevation (NAVD88) collected December 9, 2013: 790.27

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

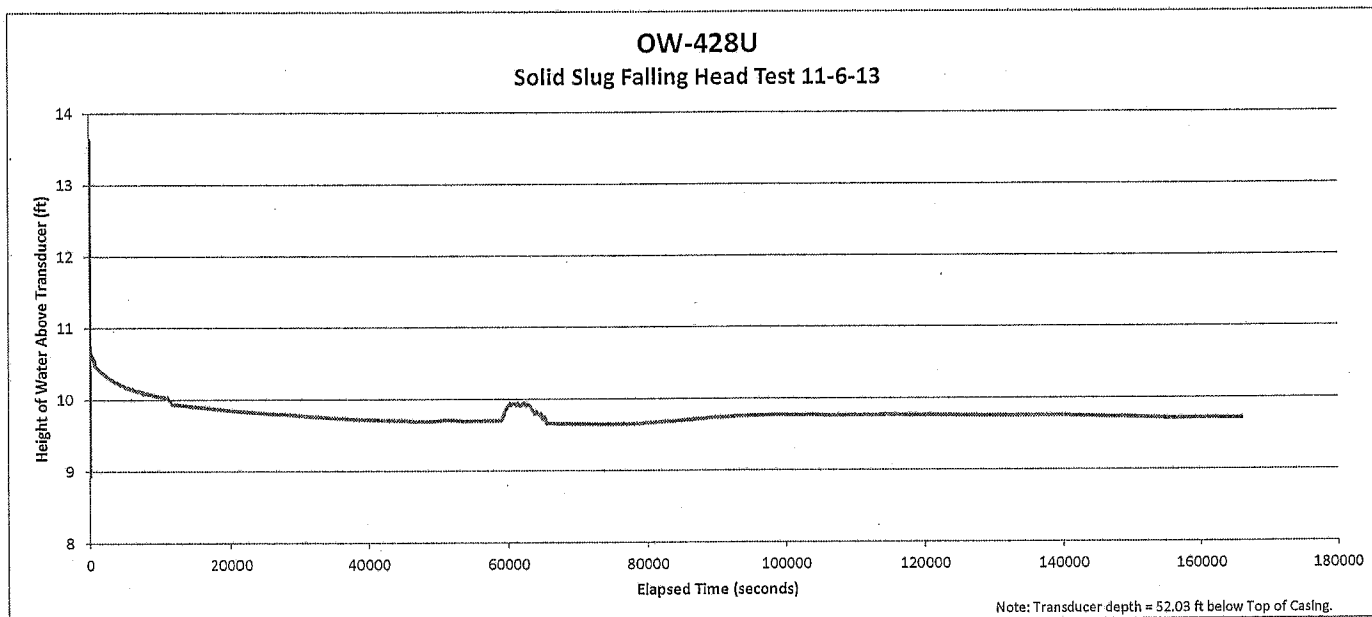
DIAGRAM NOT TO SCALE





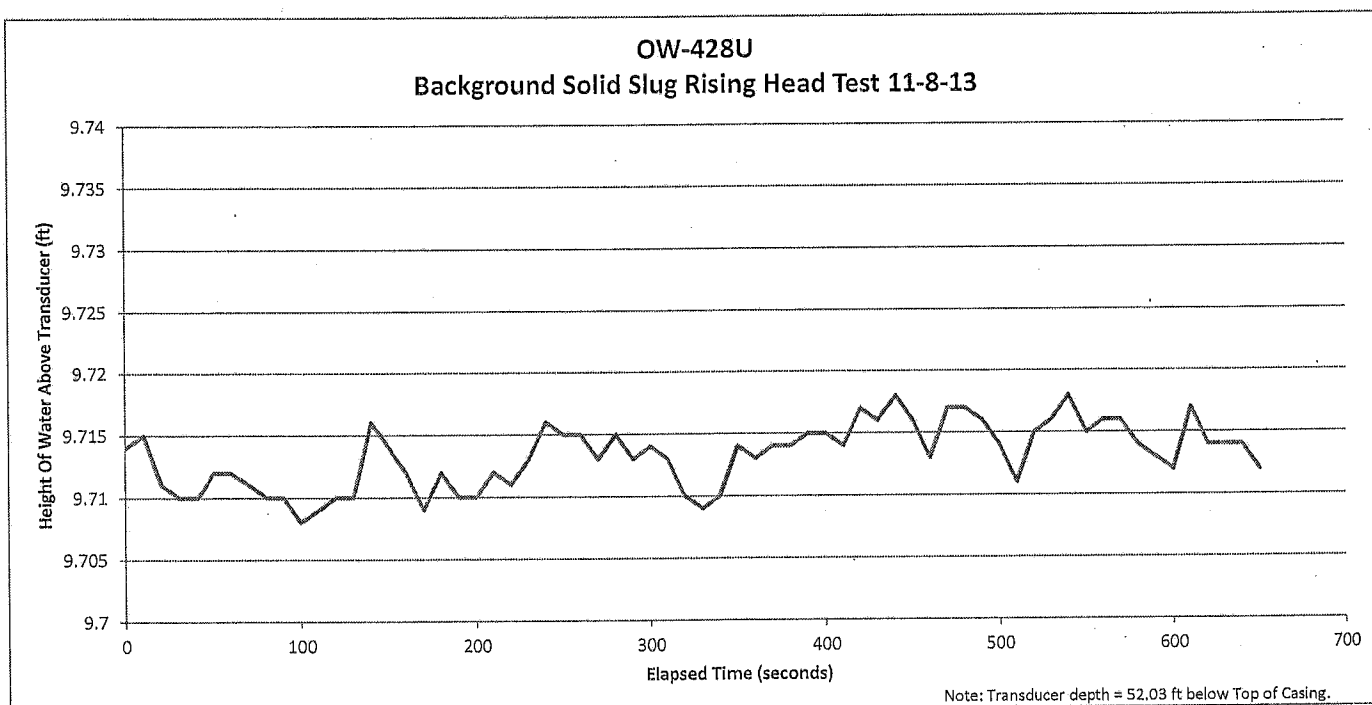
Prepared by/Date: KAL 1/20/14

Checked by/Date: [Signature] 1/21/14



Prepared by/Date: KAL 1/10/14

Checked by/Date: BJ 1/6/14

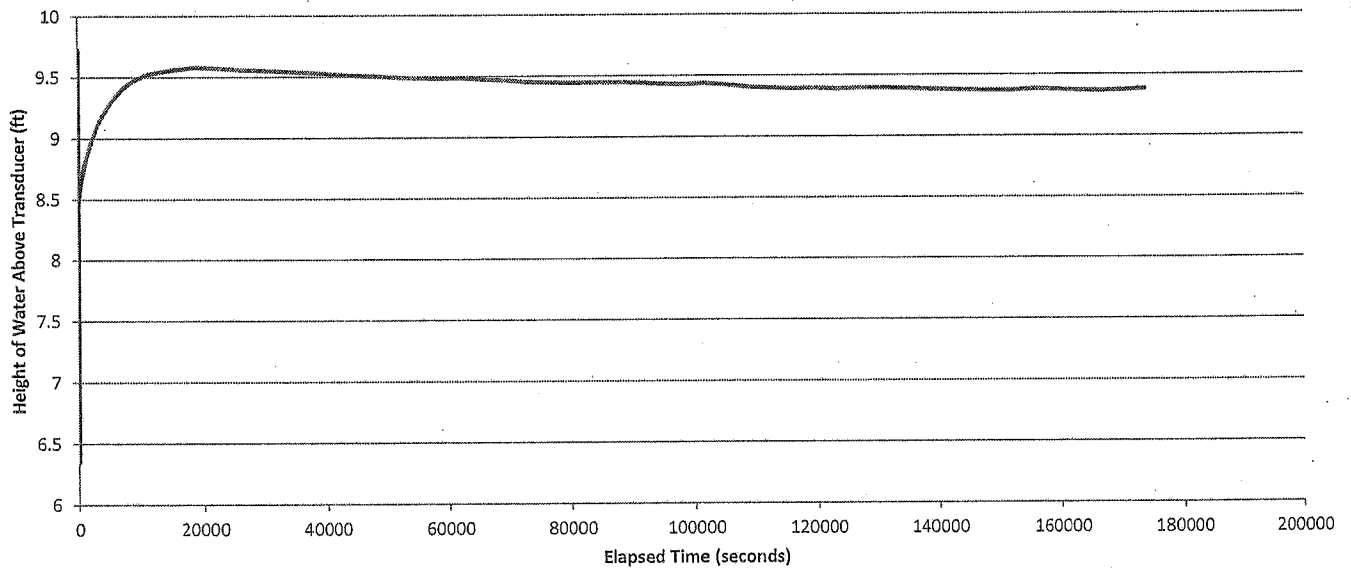


Prepared by/Date: KHL 1/20/14

Checked by/Date: GAJ 1/21/14



**OW-428U**  
**Solid Slug Rising Head Test 11-8-13**



Prepared by/Date: KRL 1/26/14

Checked by/Date: [Signature] 1/14/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-428L  
Test Method: ASTM D 4044-96 (2008), Sections 8 and 9  
Test Type: Solid  
Test Dates: 11/18/2013**

Well Construction Diagram

Plots:

- Background water level for falling head test
- Falling head test
- Background water level for rising head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 428LBG 2013-11-19 08.10.58 (contains background data for falling head test)
- 428LF 2013-11-19 08.11.29 (contains test data for falling head test)
- 428LBGR 2013-11-19 08.11.43 (contains background data for rising head test)
- 428LR 2013-11-19 18.32.15 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 28.69 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KHL 1/10/14

Checked by/Date: [Signature] 1/14/14

# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-428L

Date of Observation Well Installation: 10/11/13

Date of Well Development: 11/5/13

Observation Well Northing: 570767.9 US ft Easting: 2448696.6 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: B. Woods (M&W)

## NOTES:

License No.: TN #658

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 10/30/2013 through 11/5/2013.

Seep holes drilled into protective steel stick up cover upon completion of well installation.

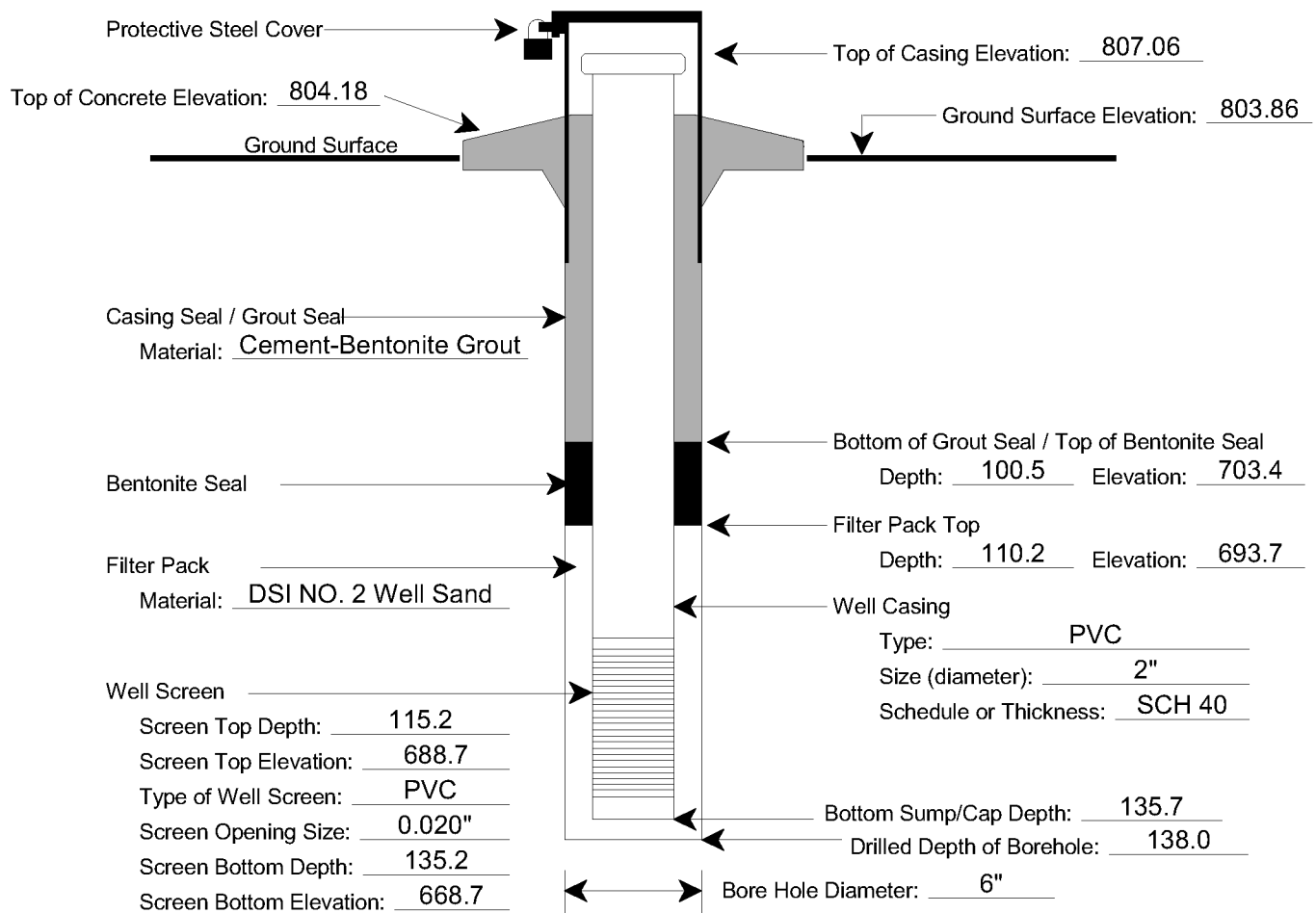
AMEC Inspector Supervising Well Installation: N. Smith

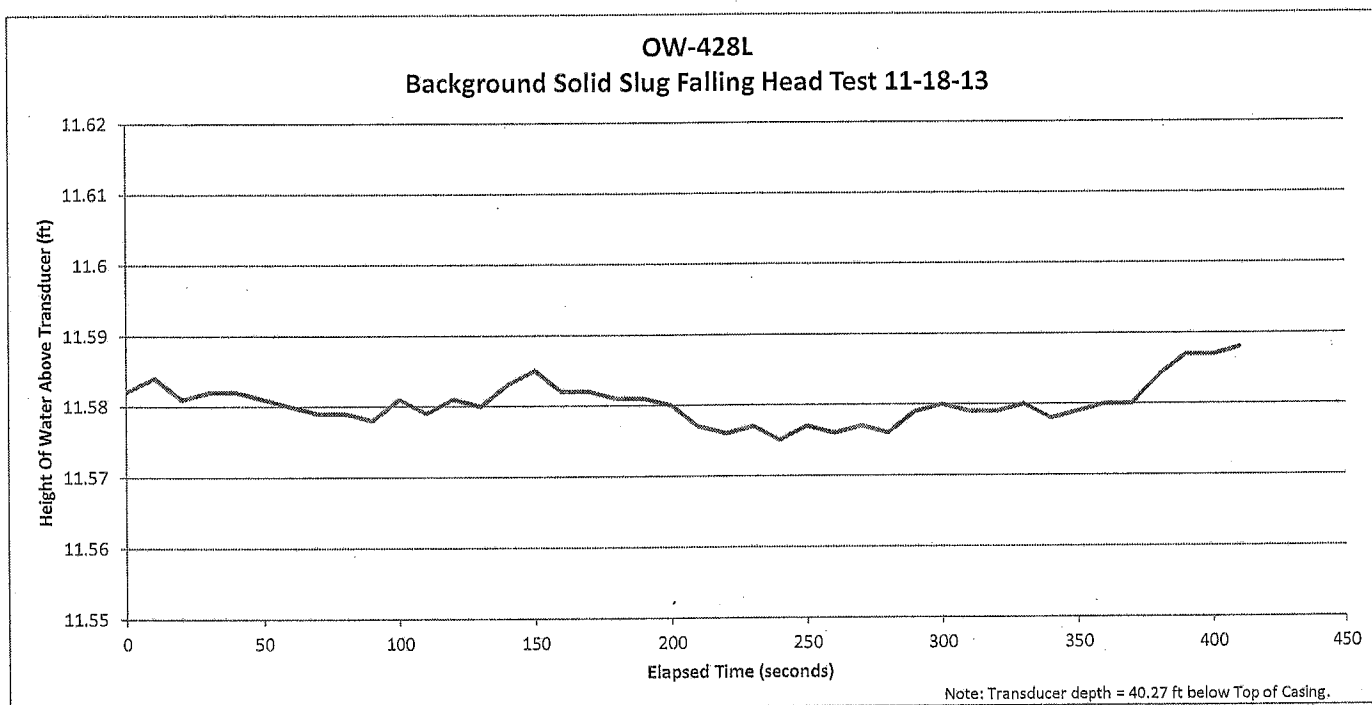
Static Water Level Elevation (NAVD88) collected December 9, 2013: 787.21

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

Concrete Surface Pad Dimensions: 2'x2'x0.5'

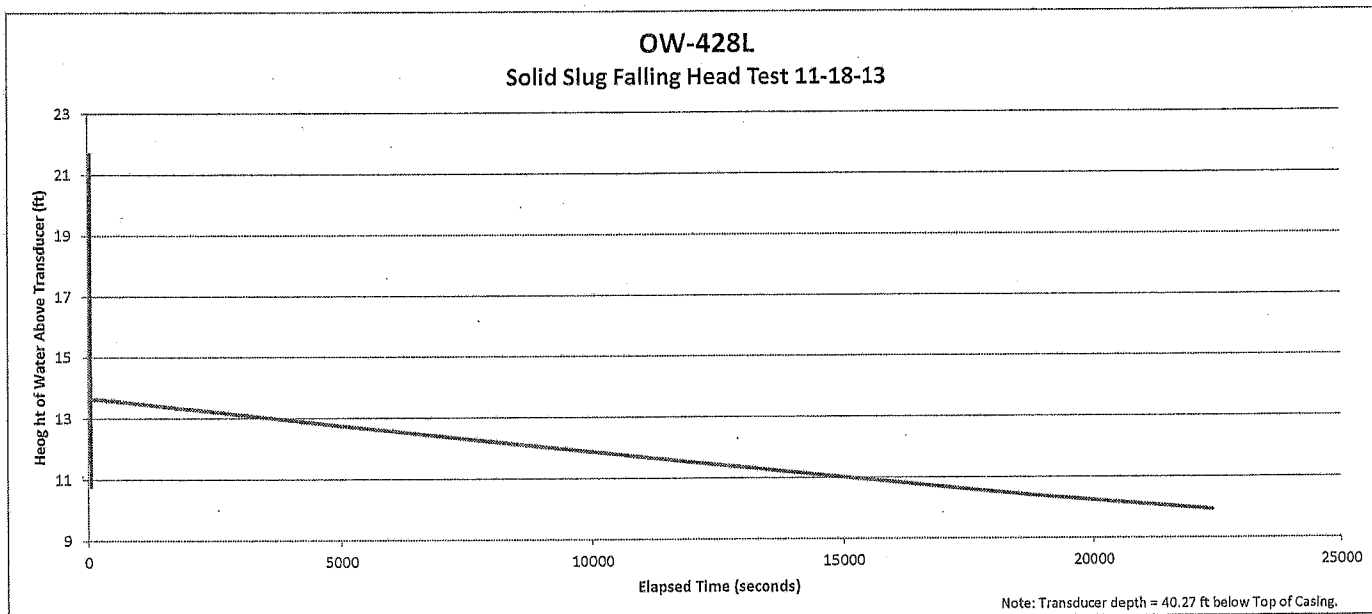
DIAGRAM NOT TO SCALE



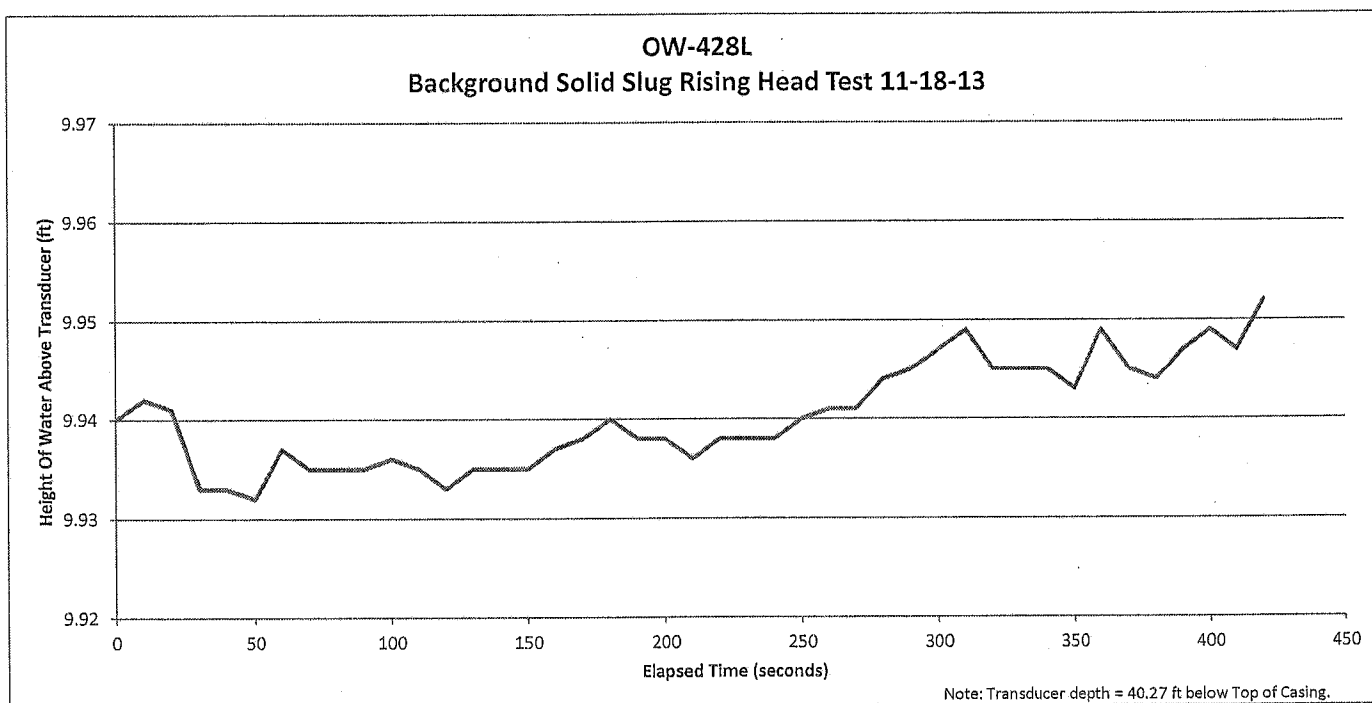


Prepared by/Date: KAL 1/10/14

Checked by/Date: [Signature] 1/6/14

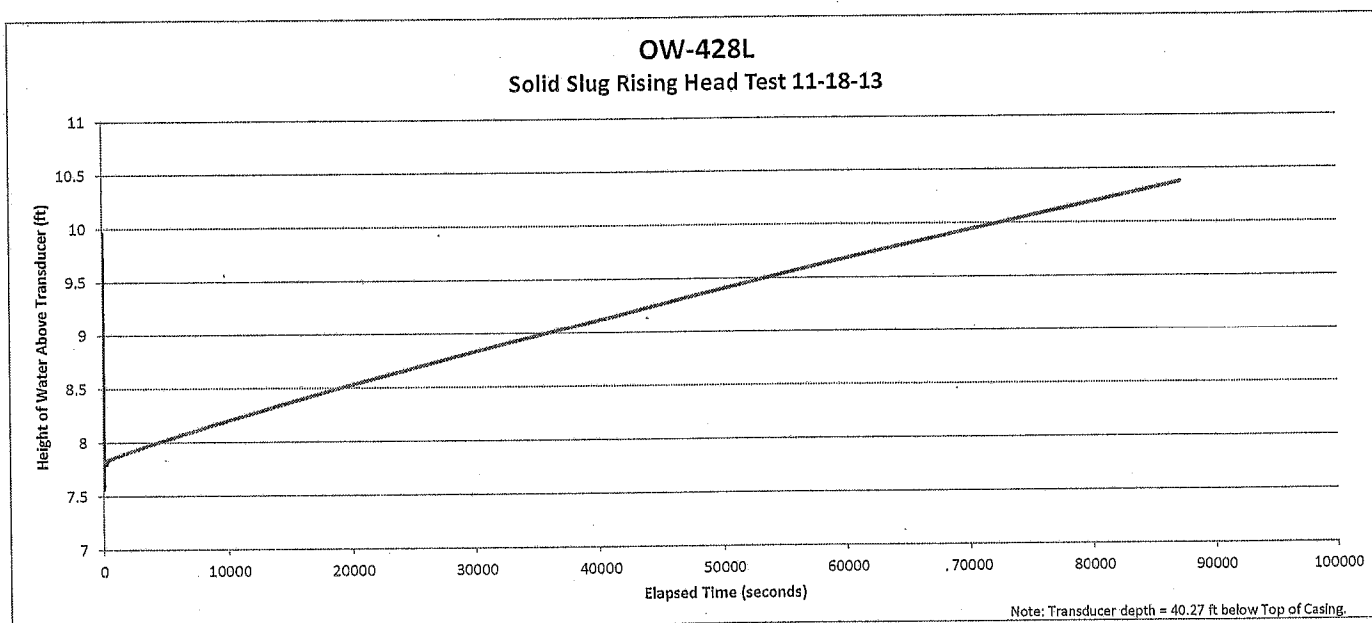


Prepared by/Date: KH 1/10/14  
Checked by/Date: [Signature] 1/11/14



Prepared by/Date: KHL 1/10/14

Checked by/Date: JGJ 1/11/14



Prepared by/Date: UM 1/10/14

Checked by/Date: JJ 1/11/14

**CLINCH RIVER SMR PROJECT  
AMEC PROJECT No. 6468-13-1072**

**SLUG TEST DATA REPORT**

**Observation Well OW-429U**

**Test Method: ASTM D 4044-96 (2008), Sections 8 and 9**

**Test Type: Solid**

**Test Dates: 11/19/2013; 11/20/2013**

Well Construction Diagram

Plots:

- Background water level for falling head test
- Falling head test
- Background water level for rising head test
- Rising head test

Copies of transducer electronic files in Excel (.xlsx) and native (.wsl) format as listed below are provided under separate cover as supporting information for this data report. The Excel files also contain the plots listed above that AMEC created from the recorded data.

- 429UBGF 2013-11-19 08.37.46 (contains background data for falling head test)
- 429UF 2013-11-19 08.38.25 (contains test data for falling head test)
- 429UBGR 2013-11-19 08.38.38 (contains background data for rising head test)
- 429UR 2013-11-20 08.40.53 (contains test data for rising head test)

Notes:

1. Water level trend prior to testing is represented by the initial five minutes (minimum) of transducer recording in the "background file prior to initiating a test.
2. Static water level (below top of casing) prior to testing = 37.15 ft.
3. The depth to static water level below top of casing prior to initial testing and the height of water above the transducer at the initial reading are added to provide the depth of the transducer below the top of the well casing reference point.
4. Water level changes during tests are represented by changes in the height of water above the transducer.

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Prepared by/Date: KAL 1/10/14

Checked by/Date: DA 1/11/14



# Observation Well Data Sheet

Prepared by/Date: MBL 4/29/14

Checked by/Date: WBD 4/29/14

Project Name: CLINCH RIVER SMR PROJECT (AMEC 6468-13-1072)

County: ROANE, TN

Observation Well I.D.: OW-429U

Date of Observation Well Installation: 10/11/13

Date of Well Development: 11/10/13

Observation Well Northing: 569989.1 US ft Easting: 2448606.2 US ft

Observation Well Driller

Observation Well Location: Clinch River SMR Site

Name: G. Akins (M&W)

License No.: TN #658

## NOTES:

Observation well installed in accordance with ASTM D 5092-04(2010)e1.

Northing and Easting = Tennessee State Plane Coordinates, NAD83, US Survey Feet.

Elevations = North American Vertical Datum of 1988 (NAVD88), Feet.

Depths/elevations referenced to surveyed ground surface.

Static water elevation referenced to mark on top of well casing.

Observation well drilled using air rotary techniques.

Steel centralizers installed above well screen and at approximately 50-ft intervals to ground surface.

PVC well screen machine-slotted by manufacturer.

Well development activities conducted between 11/8/2013 through 11/10/2013.

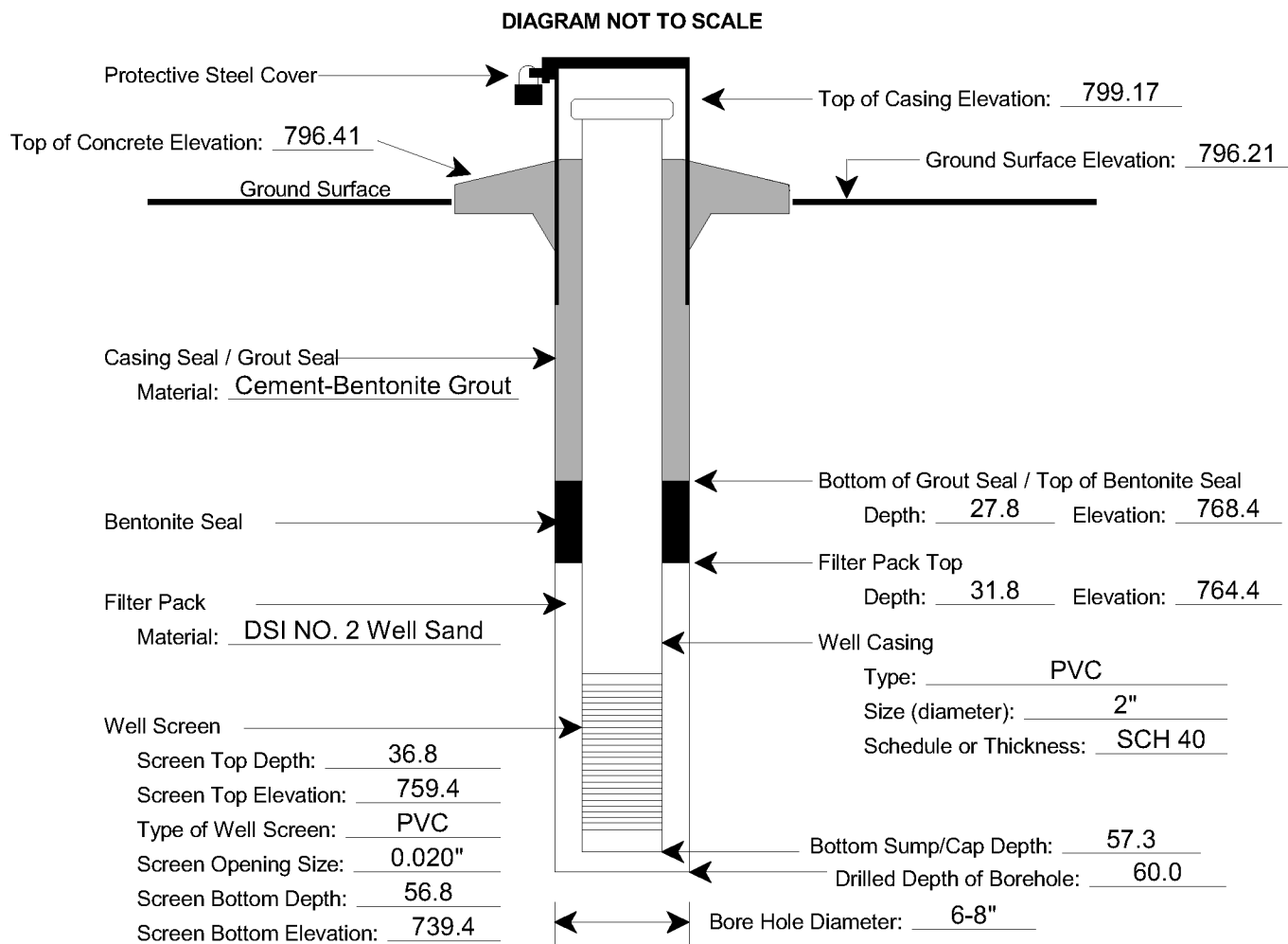
Seep holes drilled into protective steel stick up cover upon completion of well installation.

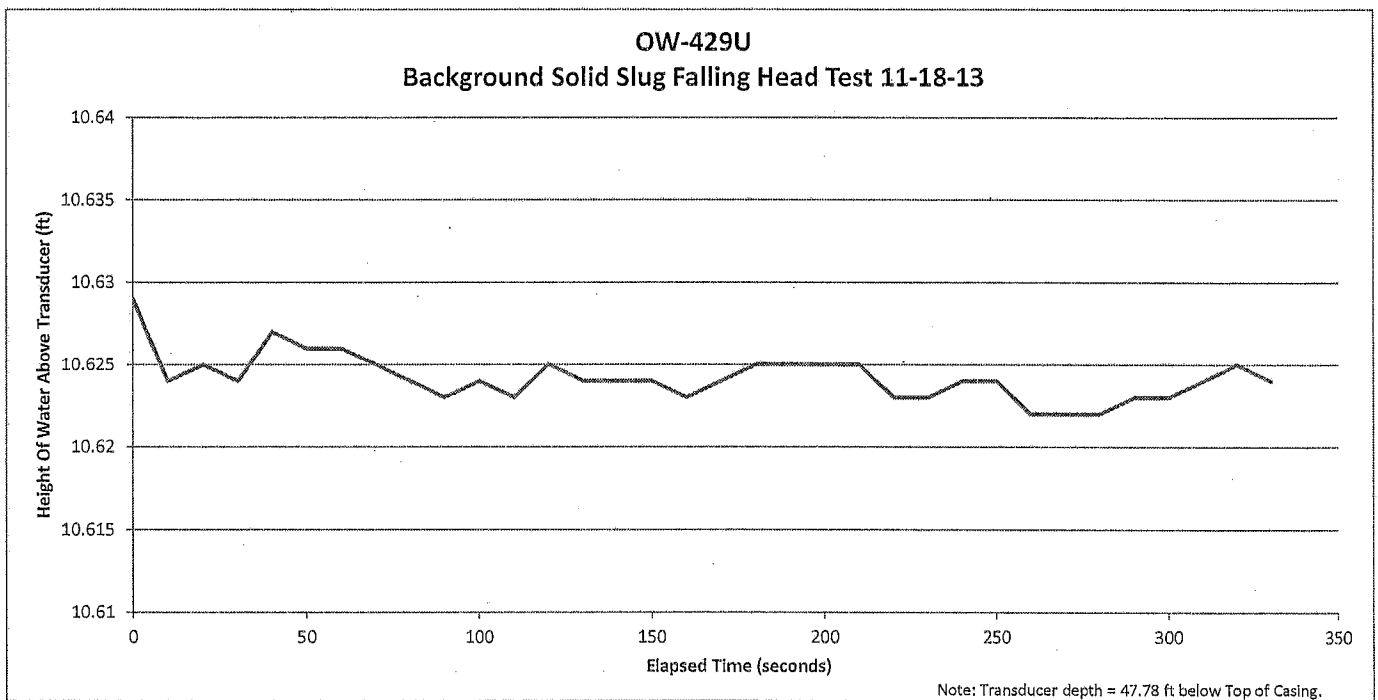
AMEC Inspector Supervising Well Installation: K. Lloyd

Static Water Level Elevation (NAVD88) collected December 9, 2013: 766.89

Type of Locking Device: Masterlock-Key A953 Type of Casing Protection: Steel Stick Up

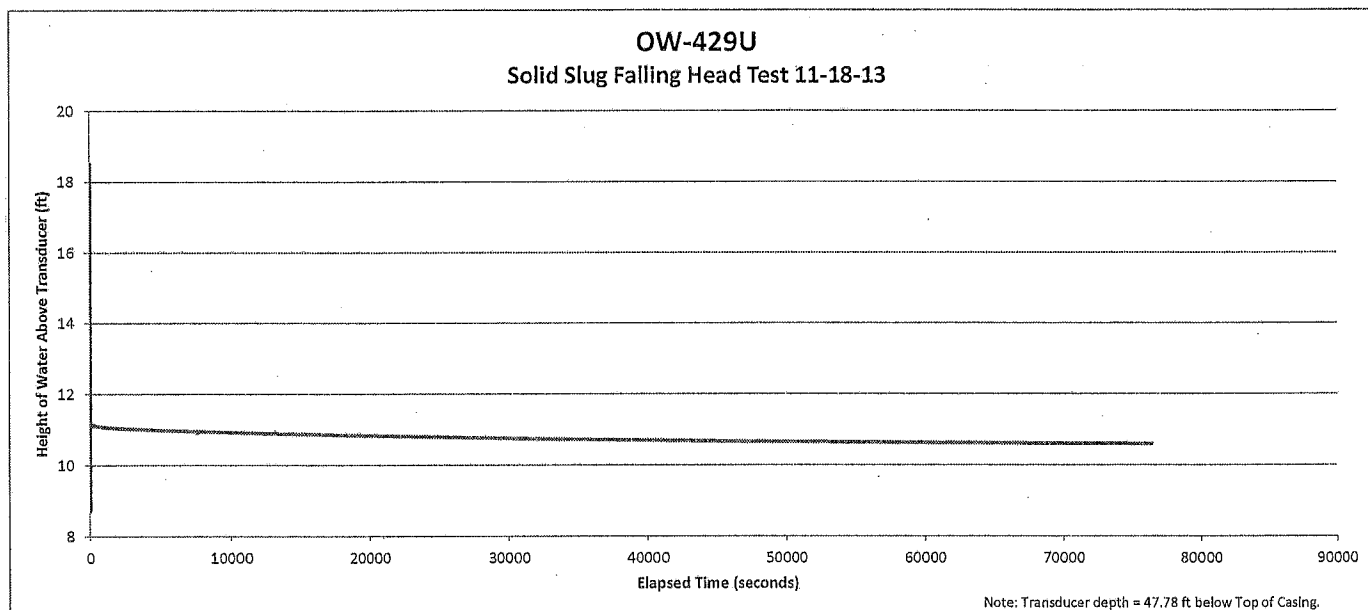
Concrete Surface Pad Dimensions: 2'x2'x0.5'





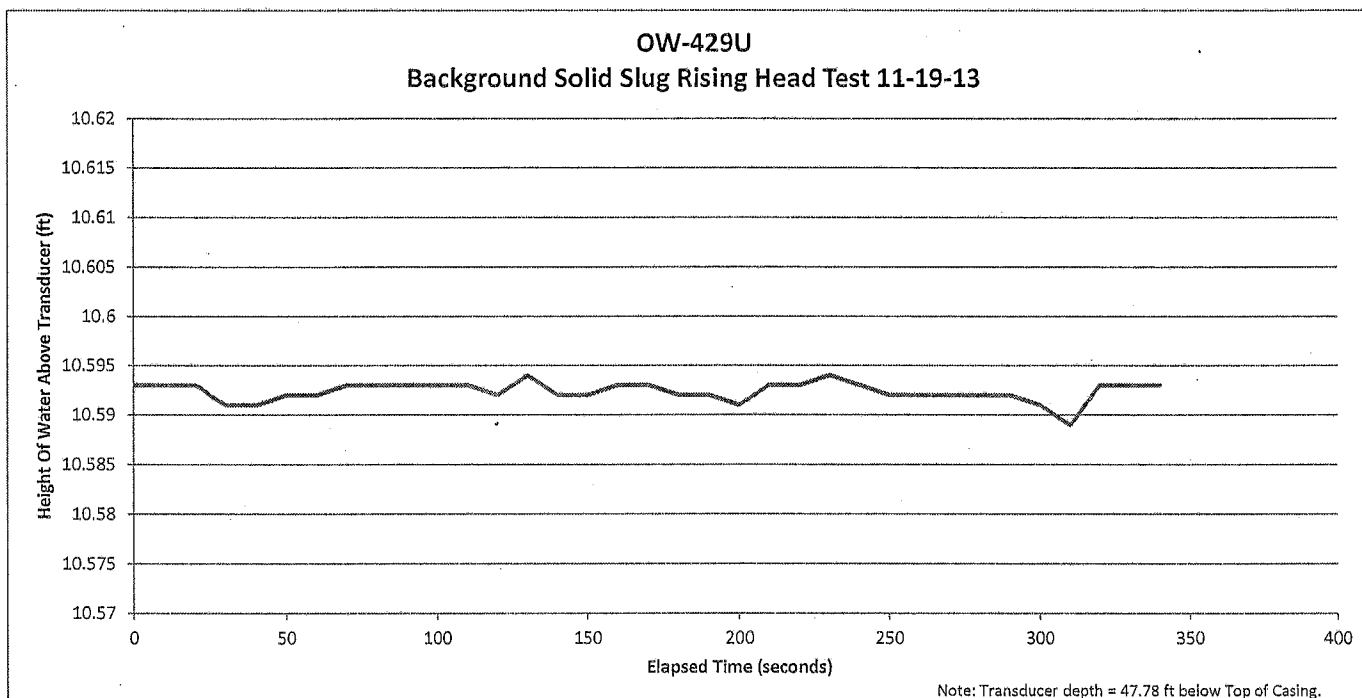
Prepared by/Date: ICHL 1/10/14

Checked by/Date: JGJ 1/11/14



Prepared by/Date: KAL 1/10/14

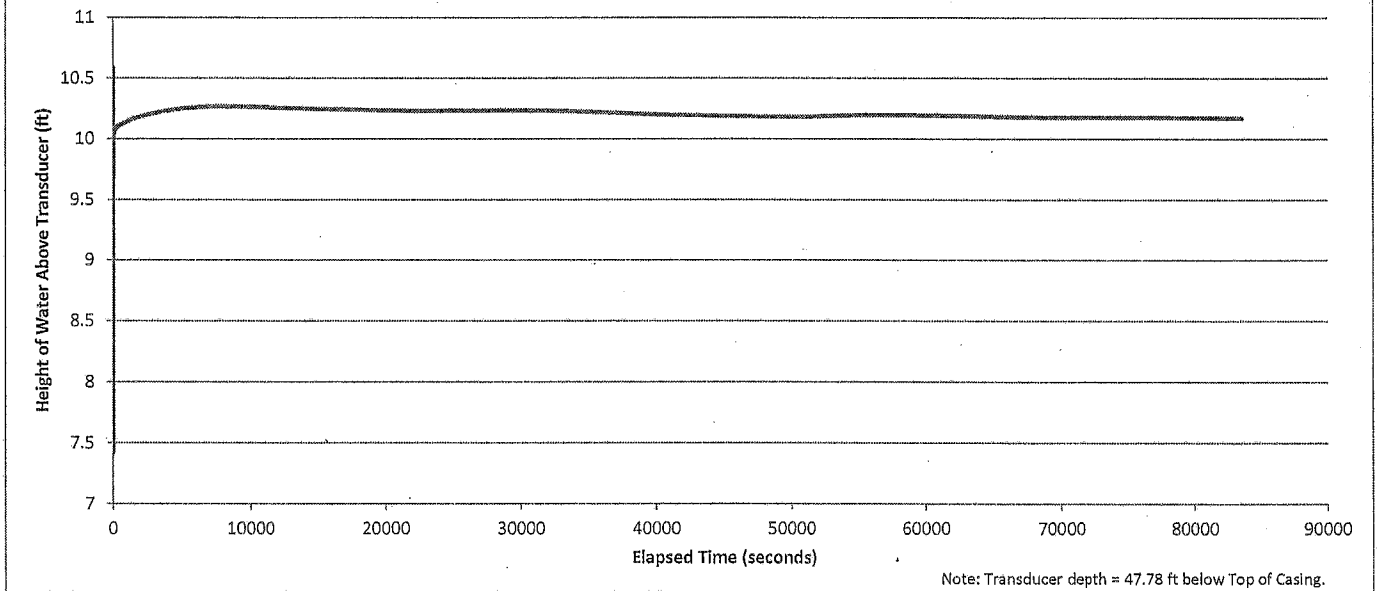
Checked by/Date: JJ 1/11/14



Prepared by/Date: KH - 11/10/14

Checked by/Date: gaw 11/11/14

OW-429U  
Solid Slug Rising Head Test 11-19-13



Prepared by/Date: KAC 11/10/14

Checked by/Date: GAJ 11/11/14