

SANDIA REPORT

SAND2019-10488

Printed September 2019



Sandia
National
Laboratories

Well Casing Baseline Analysis for the Bayou Choctaw Strategic Petroleum Reserve Site

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ABSTRACT

This report analyzes data from multi-arm caliper (MAC) surveys taken at the Bayou Choctaw Strategic Petroleum Reserve site to determine baseline statistics for the original innermost cemented casing or the subsequent installed liner. Along with analyzing the internal diameters from the MAC surveys, this analysis looks to approximate casing weight, an important metric for determining the strength of well sections. Casing weight is calculated for each section, survey, and well. Results from the analysis show most wells reflect the dimensions in the original as-built drawings. There are, however, several exceptions. Some well sections have calculated wall thicknesses outside API tolerance. In addition, some well section depths differ from the as-built drawings. All results are discussed on a well-by-well basis. Where applicable, information from this report should be used to update as-built drawings and aid in creating more accurate well models for future studies.

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NOMENCLATURE

#/F Pound Mass per Linear Foot

ASTM American Society for Testing and Materials

BC Bayou Choctaw

BHF Bradenhead Flange

EID Expected Internal Diameter

EOD Expected Outer Diameter

MAC Multi-Arm Caliper

MID_{min} Minimum Measured Internal Diameter

RWD Relative Wall Displacement

SPR Strategic Petroleum Reserve

1. INTRODUCTION

The Strategic Petroleum Reserve (SPR) stores large amounts of oil in subsurface salt caverns to supply the United States in times of national shortage. To achieve these goals SPR must assure the integrity of cavern wells. One method for monitoring well integrity is through the use of multi-arm caliper (MAC) surveys. MAC surveys measure the internal dimensions of the well which can then be used to infer the structural integrity. Each well is designed to withstand the stresses and strains they will experience at a given depth. Generally, these stresses and strains will increase with depth, therefore thicker and stronger well sections will be used at greater depths [5]. Since the outer diameter of the well casing remains constant, the inner diameter is varied to account for thicker well walls.

A previous report by B. Roberts [6] suggested some of the installed well casings at the SPR sites may be different from the as-built drawings. Subsequent reports by Moriarty and Roberts [4, 2, 3] analyzed the well dimensions at the Big Hill, Bryan Mound, and West Hackberry SPR sites. These reports showed several wells had installed casings that did not match the original as-built specifications. Well casings not designed to specification can, under certain circumstances, affect well operations. The worst, but least likely, scenario is a casing section warping and/or collapsing because it was weaker than the design required. There is also a small possibility that an instrument will become stuck in a section with a smaller or warped inner diameter. In addition to the physical effects, accurate well volumes are needed for modelling and analysis of wells.

This report investigates the casings of all wells at the Bayou Choctaw (BC) SPR site to determine if the installed casings match the as-built specifications. MAC data will be used to find the internal, or inner, diameter. The inner diameter of the well will be used to estimate the wall thickness and subsequently, the type of each casing. The casing types are differentiated by their outside diameter, material, and weight per linear foot. While there is no way to accurately determine the casing's material, the outside diameter and casing weight can be determined from as-built drawings and MAC surveys.

2. METHODOLOGY

The methods used in this report are taken largely from the aforementioned Well Casing Baseline Analysis for the Big Hill Strategic Petroleum Reserve Site SAND report by Moriarty and Roberts [4].

Since 2010, the SPR has been measuring the internal dimensions of wells at Bayou Choctaw using multi-arm caliper surveys. This type of survey uses a tool that is lowered into a well and samples at a vertical resolution between 0.025 and 0.1 feet. Each MAC has up to 60 arms that measures the distance between the well wall and a central point inside the tool to get an arm length. Individual internal diameters can be obtained by adding the lengths given by two arms on opposite sides of the sampling tool. All depths of internal diameters are reported with respect to the bradenhead flange (BHF).

The internal diameter measurements can be noisy, especially around the casing collar, and therefore difficult to analyze. To mitigate this, a median filter with a window size of 2 ft. is applied to each internal diameter measurement to reduce noise while preserving the shape of the original data. An example of filtering is provided in Figure 2-1. The unfiltered data shows large jumps near the casing collar. This is in contrast to the filtered data which still reflects the original data but without jumps.

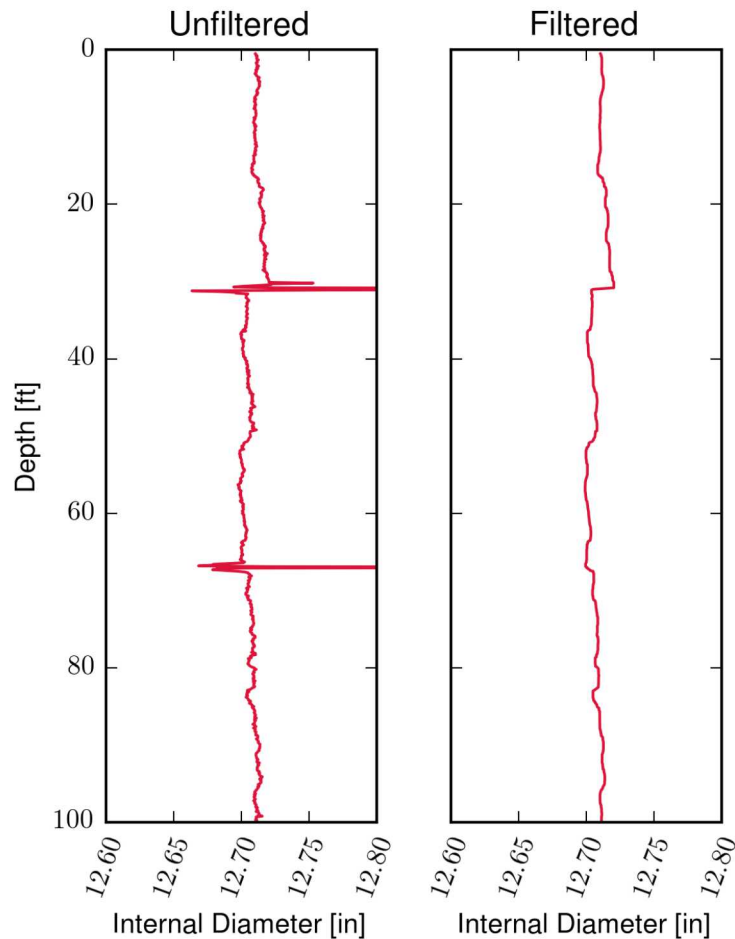


Figure 2-1 Difference between the unfiltered raw internal diameter measurements (left) and the filtered measurements (right)

Although most variation in internal diameter was seen near the casing collar, it was not a reliable predictor of casing collar location. In this study, relative wall displacement (RWD) was used to identify casing collar depths. This parameter was adapted from a 2015 Roberts report [1] and is the maximum absolute difference between the measured and expected internal radii normalized by the expected casing wall thickness (Equation 1). The RWD is presented as follows:

$$(1) \quad RWD = \frac{0.5 \times \max(|MID_{\min} - EID|, |MID_{\max} - EID|)}{EOD - EID}$$

where $MID_{\min}$ and $MID_{\max}$ are the minimum and maximum measured internal diameters, respectively, EID is the expected internal diameter, and EOD is the expected outer diameter. The RWD is sensitive to the jumps seen near the collar regardless of casing weight and is therefore useful in identifying the depths of casing sections. Figure 2-2, below, is an example of how RWD values were used to determine casing section depths.

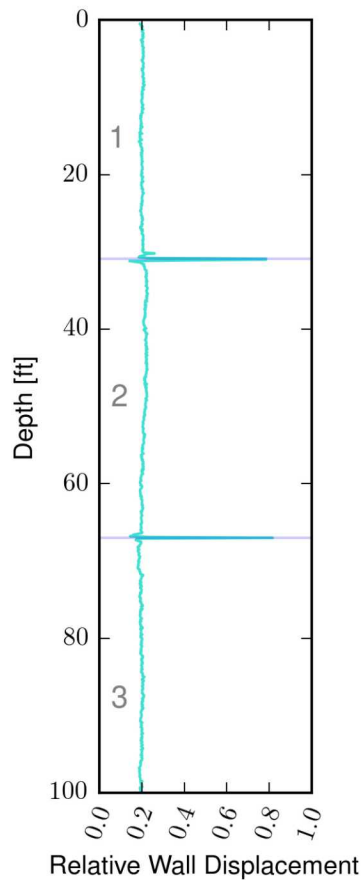


Figure 2-2 Example of relative wall displacement with calculated collar locations marked by the horizontal blue lines and casing sections numbered on the left section of the graph.

2.1. Determination of Well Casing Weight

Once the internal diameters are filtered and the casing collar depths are located, the next step is to determine the casing weight of each well section. Casing weight is a function of the well's external diameter and wall thickness. External diameter information is taken from the as-built drawings while wall thickness is calculated from the difference in measured internal diameter and the assumed external diameter.

Each casing weight is given an allowable tolerance as described by ATSM A999. ATSM A999 states that the actual wall thickness may not be less than 85% of the nominal wall thickness [1]. This threshold was used to determine the actual casing weights of each section. In addition, it is possible that measured wall thickness is greater than the specified wall thickness. For the purposes of this report the maximum allowable wall thickness is 115% of the nominal wall thickness.

Since each survey had multiple arms only the median internal diameter at each depth was used to determine the casing weight. If the majority of median internal diameter measurements in a section are within the specified tolerance then that section is considered to be the casing weight given in the as-built drawings. Otherwise, that section is out of tolerance and not the casing specified in the as-built drawings. If this is the case, then the well section is considered to be the casing weight with the closest corresponding wall thickness.

3. RESULTS

The results are presented several ways. First, Table 3 presents general findings. Each row in the table shows results for a well. For each well, the number of surveys conducted, and the percentage of sections outside tolerance are shown. If there were multiple surveys the percentage is shown as a range between the minimum and maximum values. The last column in the table shows any notes. Reasoning for these notes are further discussed later in this section.

Table 3-1 Summary of Results

Well	# of Surveys	% Outside Tolerance	Notes
BC-015	2	0%	
BC-15A	2	0%	
BC-17	1	100%	Unknown grade & connection
BC-17A	2	9%–11%	Depths inverted in as-builts
BC-18	1	83%	Larger inner diameter than expected
BC-18A	1	0%	
BC-19	2	2%–17%	
BC-19A	1	4%	
BC-20A	1	3%	
BC-101A	2	10%	
BC-101B	1	2%	Only section out of tolerance at bottom
BC-102B	1	0%	
BDW-001	1	7%	Depths inverted in as-builts
BDW-007	1	3%	
BDW-010	1	82%	Larger inner diameter than expected

Secondly, results from each survey are presented and discussed. The as-built information for each well is presented along with graphical representations of internal diameter survey results. Each of the figures show the nominal value, the median measured internal diameter, and the minimum and maximum internal diameters. The depth of each section is shown with a horizontal blue line and numbered to the right of the figure. Any sections calculated to be outside the design specifications have their section numbers in bold. For calculated weights, please refer to the tables in Appendix A.

3.1. Bayou Choctaw 004

Little is known about the as-built specifications of the Bayou Choctaw 004 well. At the time of writing there was a single survey taken of the 13 3/8" casing on February 10th, 2016. The results presented in Figure 3-1 are shown with tolerances for a 54.5 #/F well casing for reference. Without knowing the approximate lengths of the well, it is extremely difficult to accurately identify the depths of the casings. As such, no individual sections were defined and there is no table for BC-004 in Appendix A.

Table 3-2 BC-004 Innermost Cemented Casing As-Built Information

Grade		Outside Diameter		Connection Type	
Not Specified		13 3/8"		Not Specified	

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
Not Specified	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified

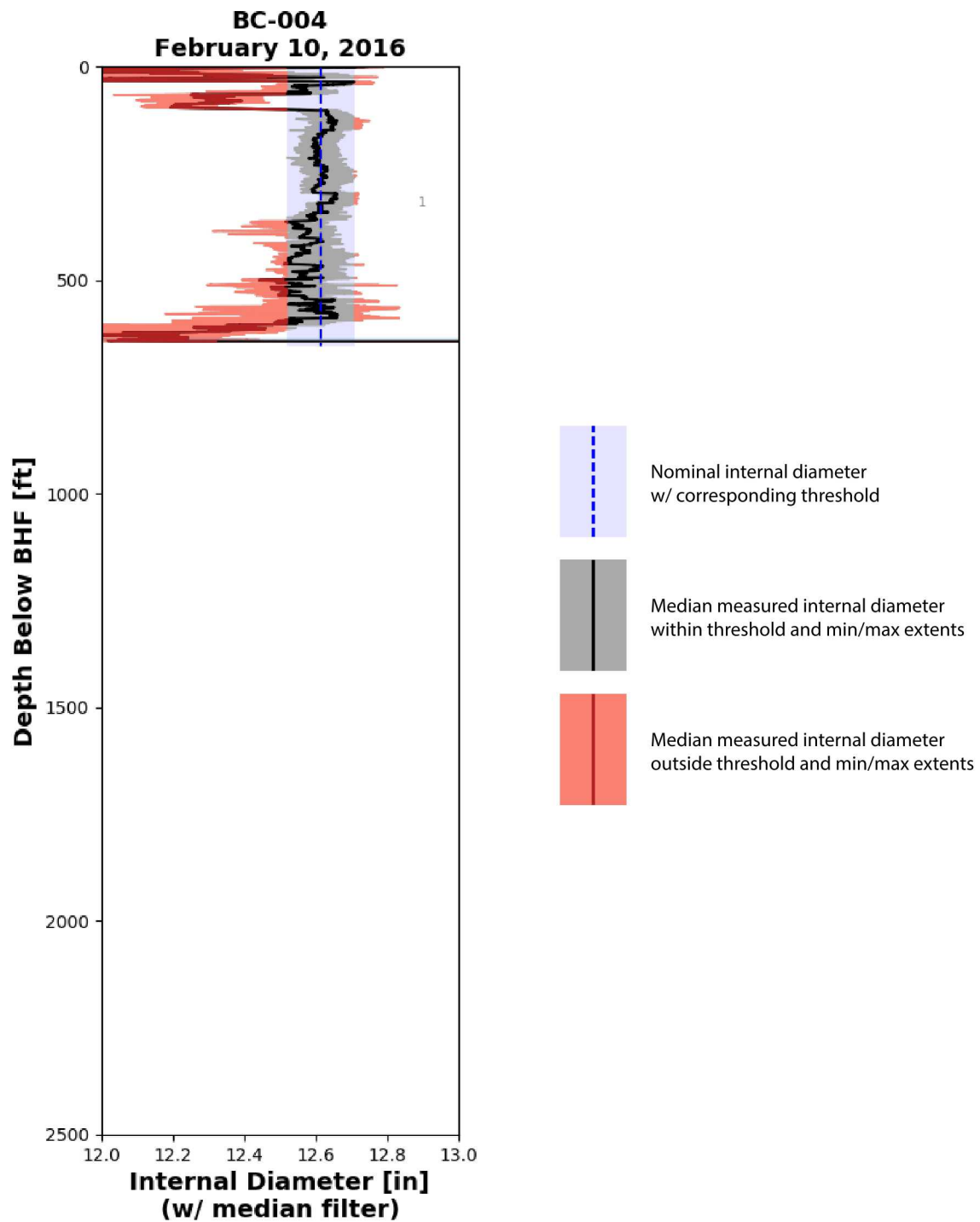


Figure 3-1 Measured internal diameter of BC-004 taken on February 10, 2016.

3.2. Bayou Choctaw 015

There have been two surveys of BC-015, one on September 27, 2010 and another approximately five years later on September 23, 2015. The surveys are shown in Figures 3-2 and 3-3 respectively. Most internal diameters are slightly larger than the nominal value but all sections are calculated to be within the tolerance.

Table 3-3 BC-015 Innermost Cemented Casing As-Built Information

Grade		Outside Diameter		Connection Type	
K-55		10 3/4"		Buttress	

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
51	0	2477	0.45	9.85	2700

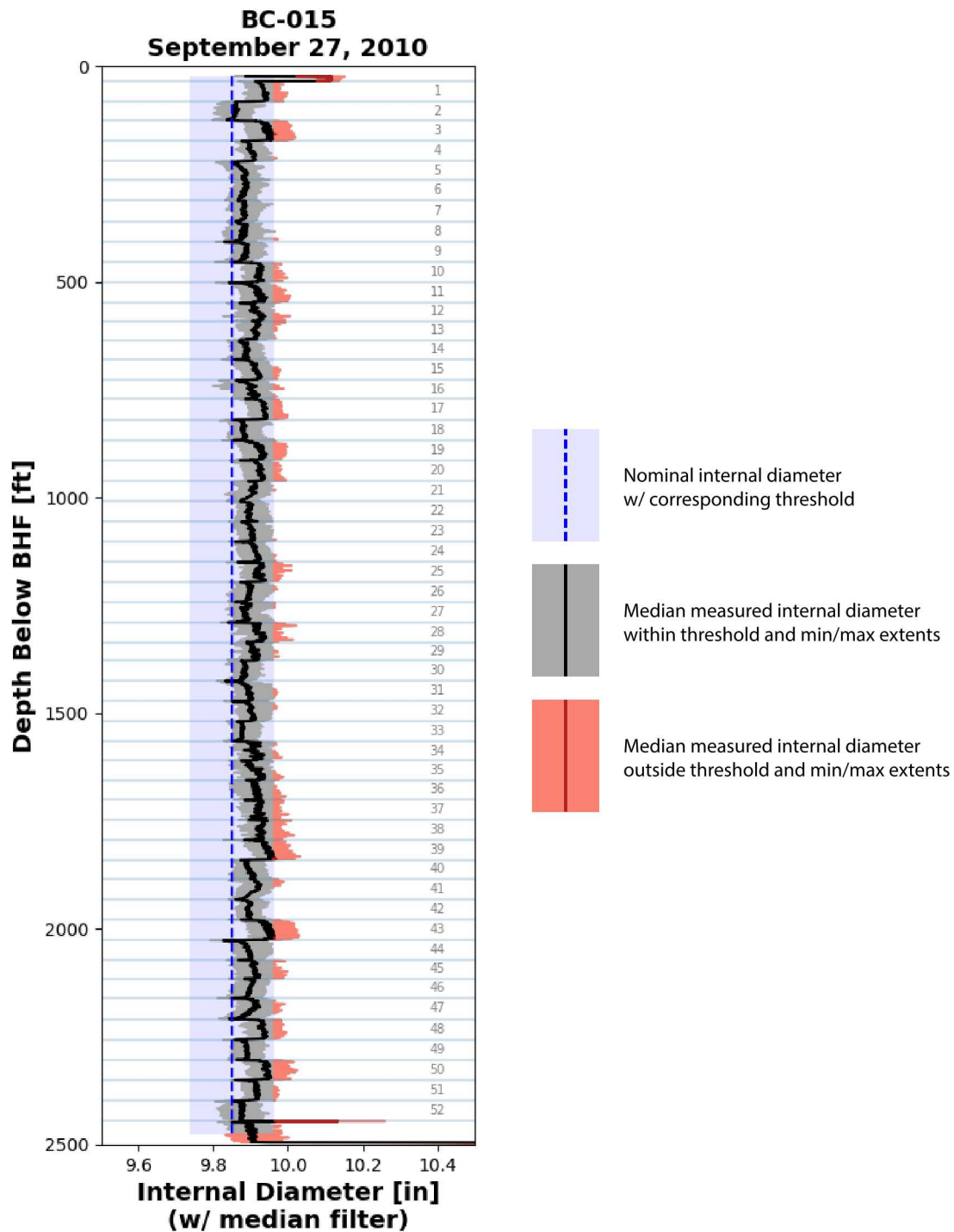


Figure 3-2 Measured internal diameter of BC-015 taken on September 27, 2010. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

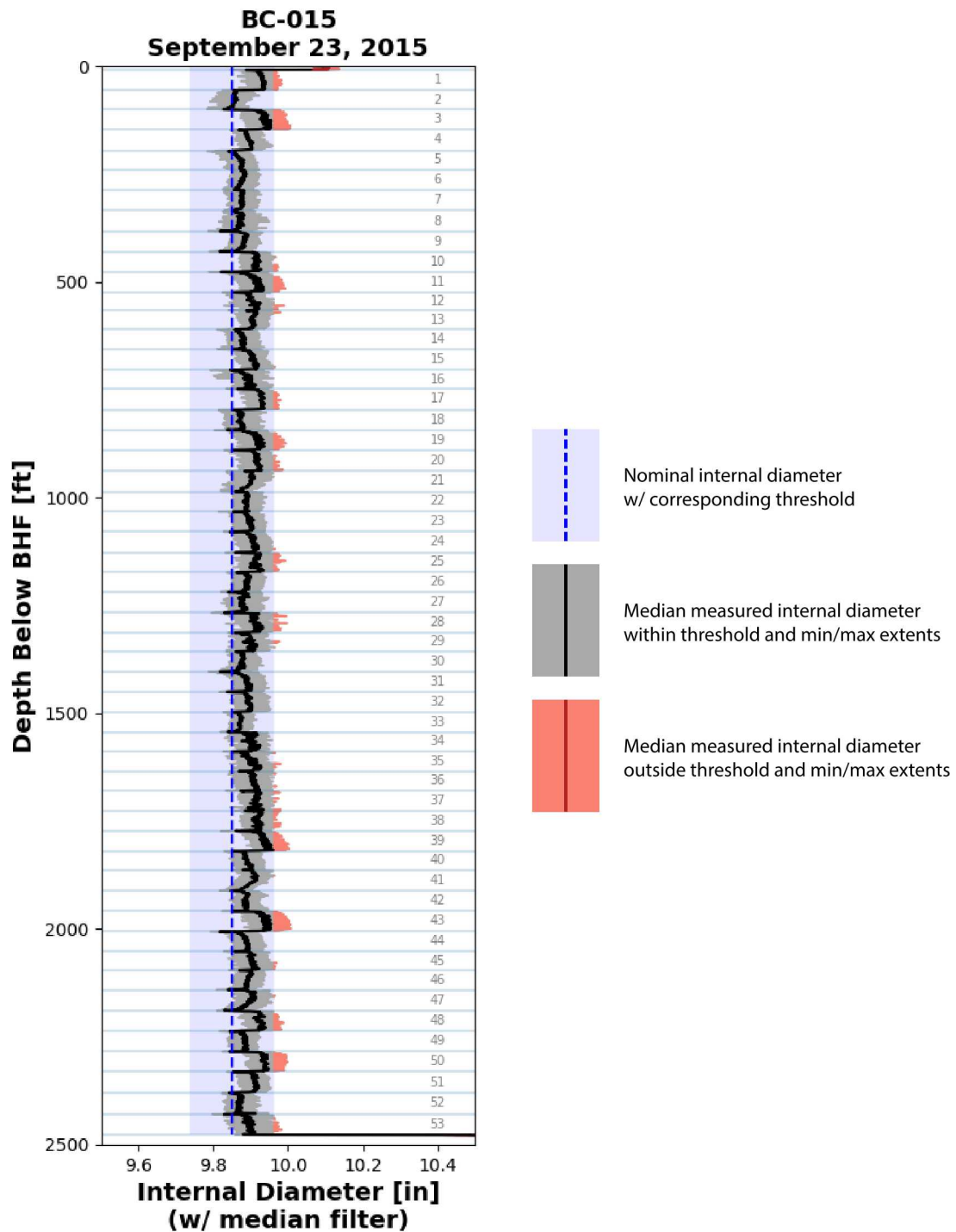


Figure 3-3 Measured internal diameter of BC-015 taken on September 23, 2015. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.3. Bayou Choctaw 015A

Bayou Choctaw 015A uses a single weight for the entire length of the well. It is a 61 #/F, 13 3/8" casing. Although most of the measured internal diameters are larger than the nominal values both surveys indicate all sections are calculated to be within the given tolerance.

Table 3-4 BC-015A Innermost Cemented Casing As-Built Information

Grade		Outside Diameter		Connection Type	
K-55		13 3/8"		ST&C	

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
61	0	2405	0.43	12.515	1540

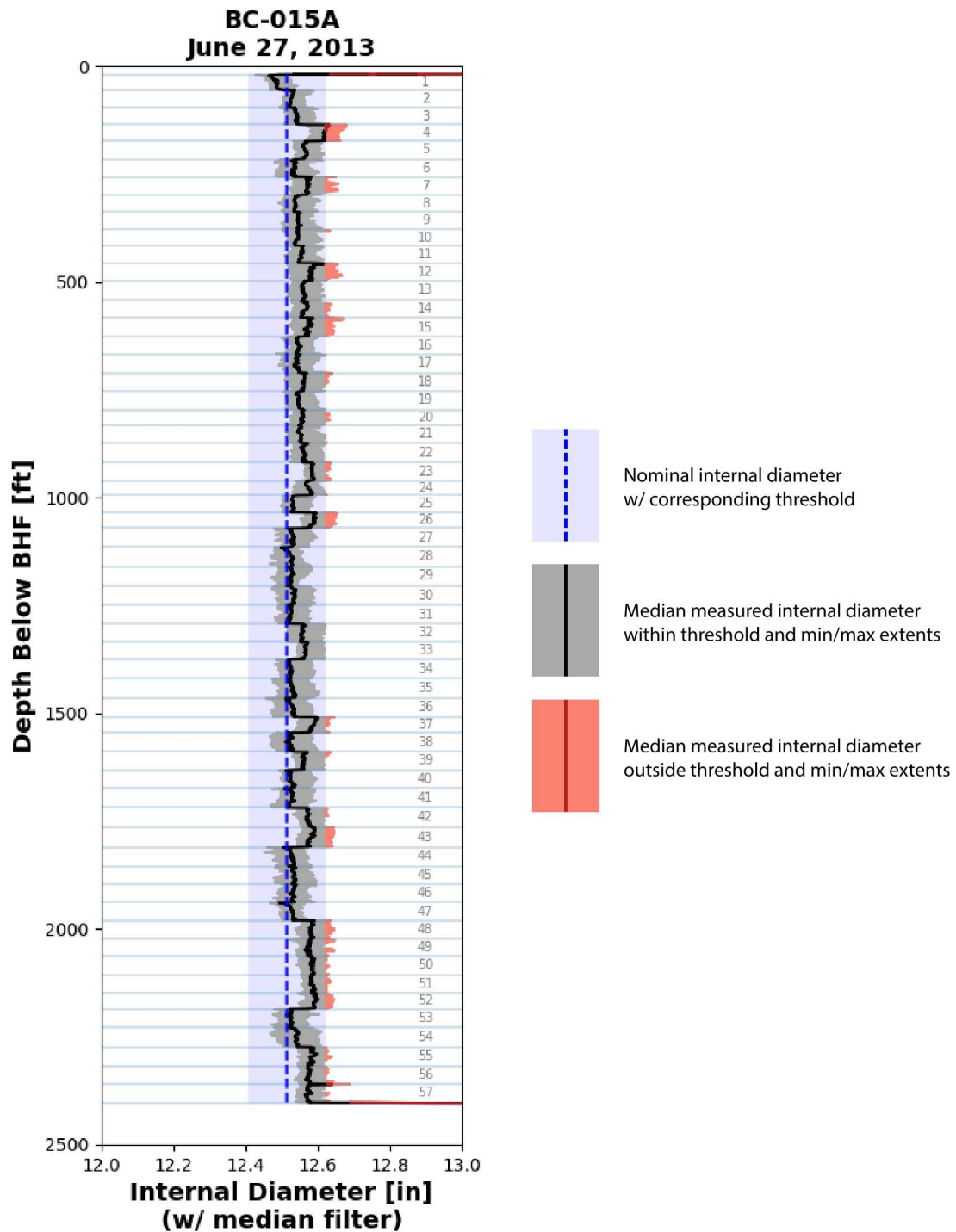


Figure 3-4 Measured internal diameter of BC-015A taken on June 27, 2013. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

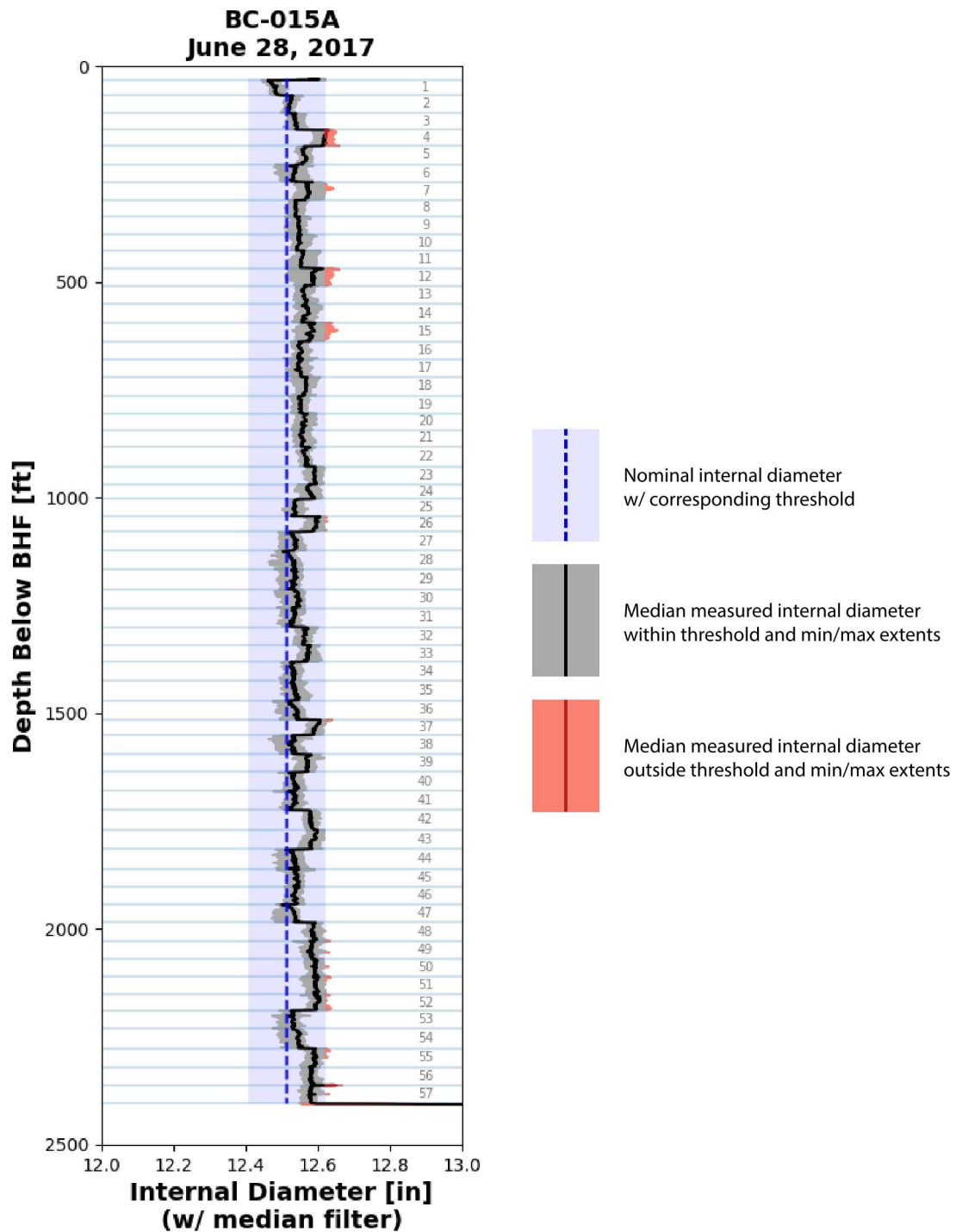


Figure 3-5 Measured internal diameter of BC-015A taken on June 28, 2017. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.4. Bayou Choctaw 017

Bayou Choctaw 017 has a 10 3/4" liner but the details of the material and joint type are not provided in the historical record. In addition, the as-built drawings indicate the liner is a 40.5 #/ft casing but the MAC shows a significantly narrower diameter and, therefore, thicker wall. The sections are calculated to be closer to 45.5 and 51 #/F with most of the sections being 45.5 #/F.

Table 3-5 BC-017 Innermost Cemented Casing As-Built Information

Grade		Outside Diameter		Connection Type	
Not Provided		10 3/4"		Not Provided	

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
40.5	0	2536	0.35	10.05	Unknown

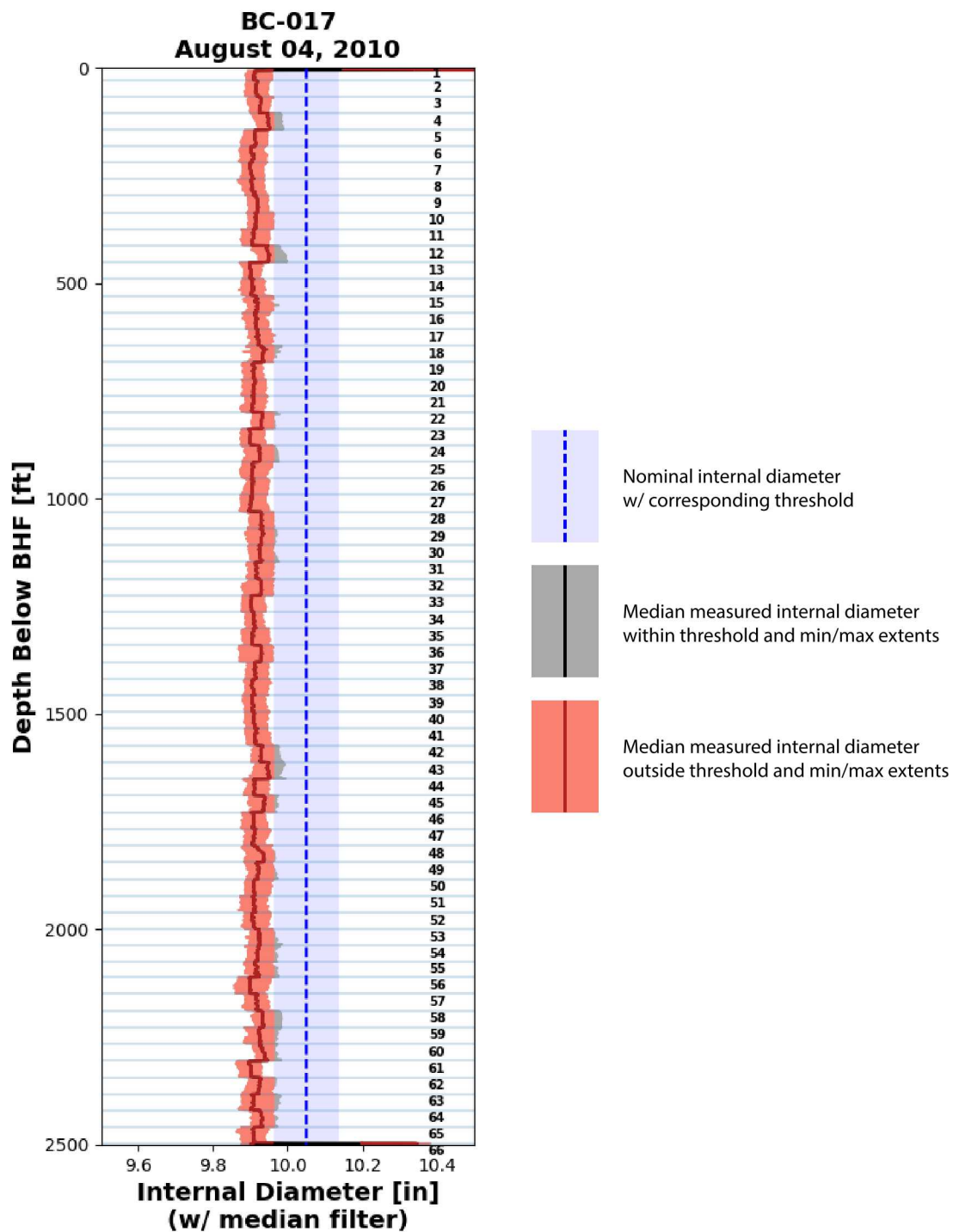


Figure 3-6 Measured internal diameter of BC-017 taken on August 4, 2010. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.5. Bayou Choctaw 017A

There have been two surveys of Bayou Choctaw 017A, one on June 5, 2013 and another on July 19, 2017. Both surveys have similar results but are significantly different from the as-built drawings. It is likely the depths in the as-built drawing are incorrectly inverted. The survey data alongside the original as-built depths are shown in Figures 3-7 and 3-9. The survey data with the corrected casing weight depths are presented in 3-8 and 3-10.

If we consider the corrected configuration most of the casing sections are calculated to be the correct weight. Only several sections in the 61 #/F casing are outside of tolerance. Sections 35, 36, 42, 45, 49, and 50 are calculated to have higher inner diameters in both surveys. The 2017 survey shows also that section 39 is outside tolerance.

Table 3-6 BC-017A Innermost Cemented Casing As-Built Information

Grade		Outside Diameter		Connection Type	
K-55		13 3/8"		Buttress	

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
68	0	484	0.48	12.415	1950
61	484	1397	0.43	12.515	1540
54.5	1397	2368	0.38	12.615	1130
68	2368	2482	0.48	12.415	1950

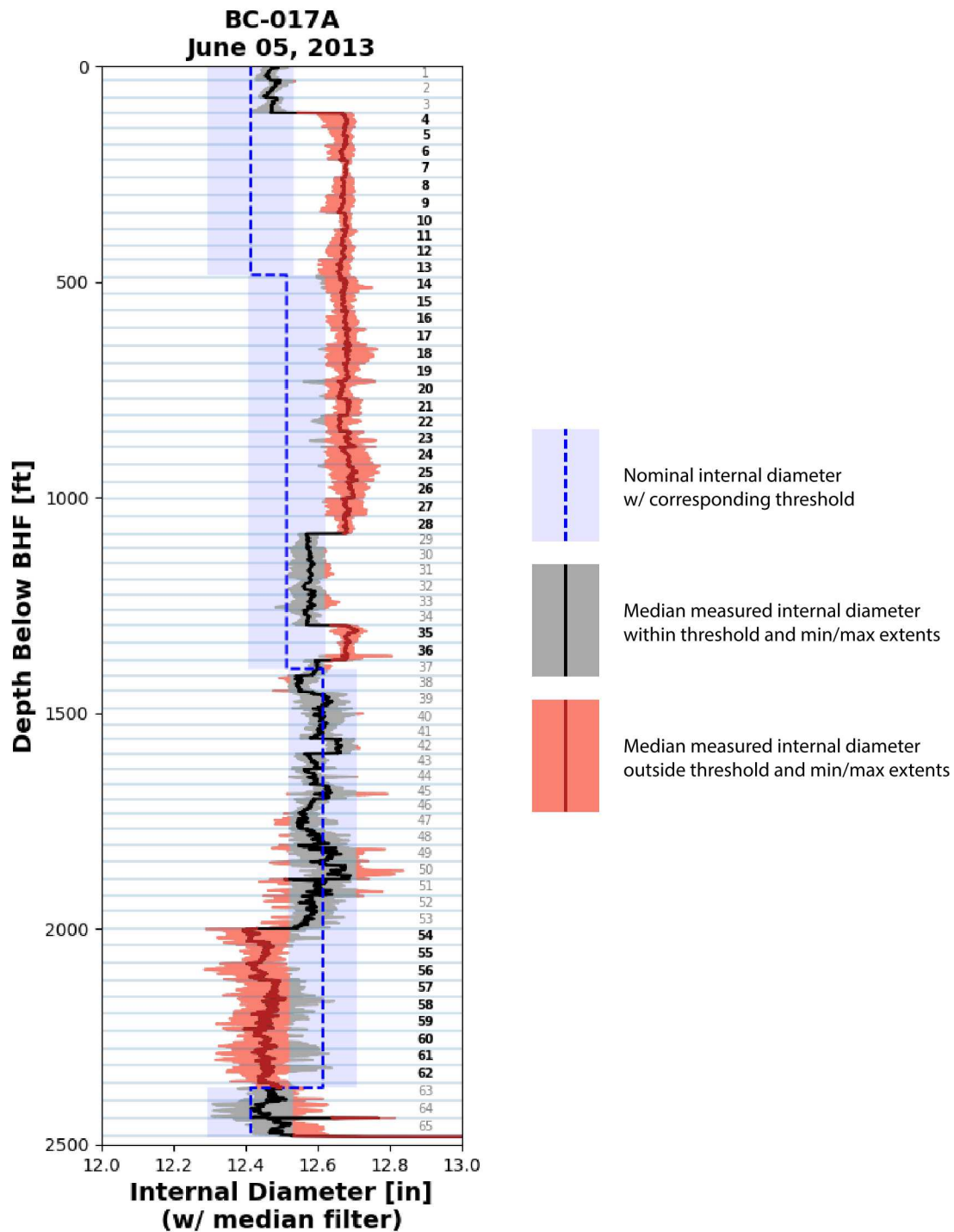


Figure 3-7 Measured internal diameter of BC-017A taken on June 5, 2013. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

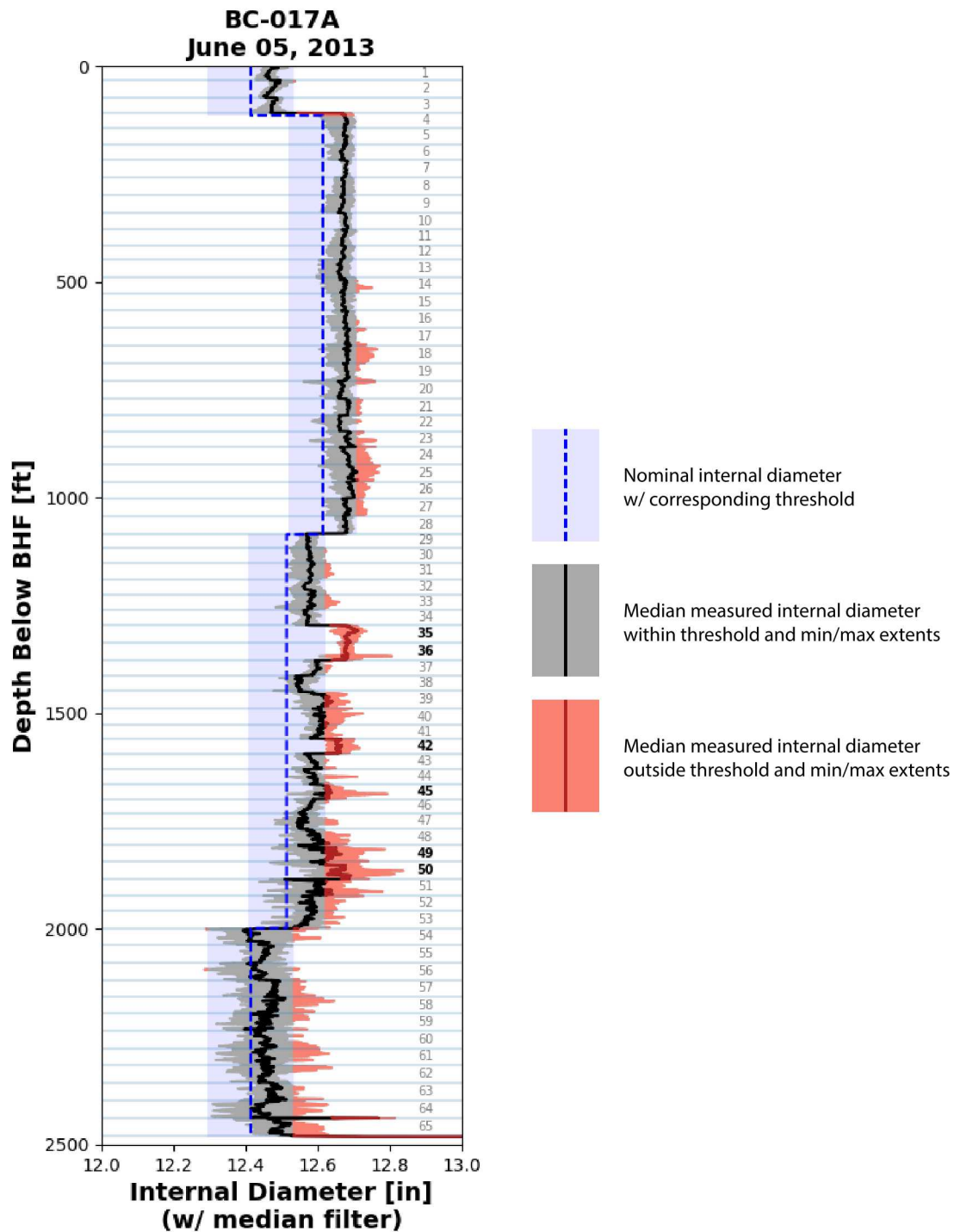


Figure 3-8 Measured internal diameter of BC-017A taken on June 5, 2013 with corrected orientation. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

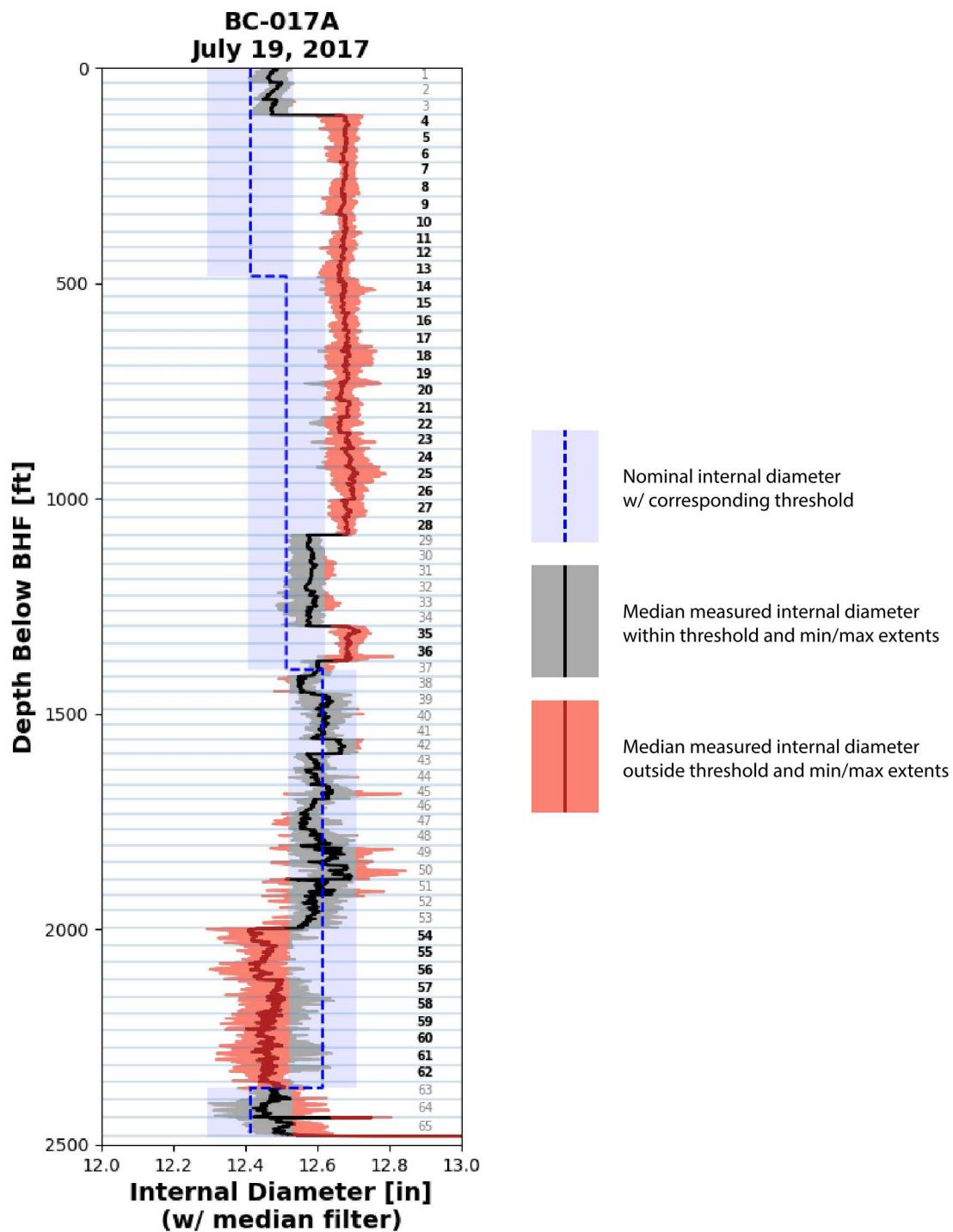


Figure 3-9 Measured internal diameter of BC-017A taken on July 19, 2017. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

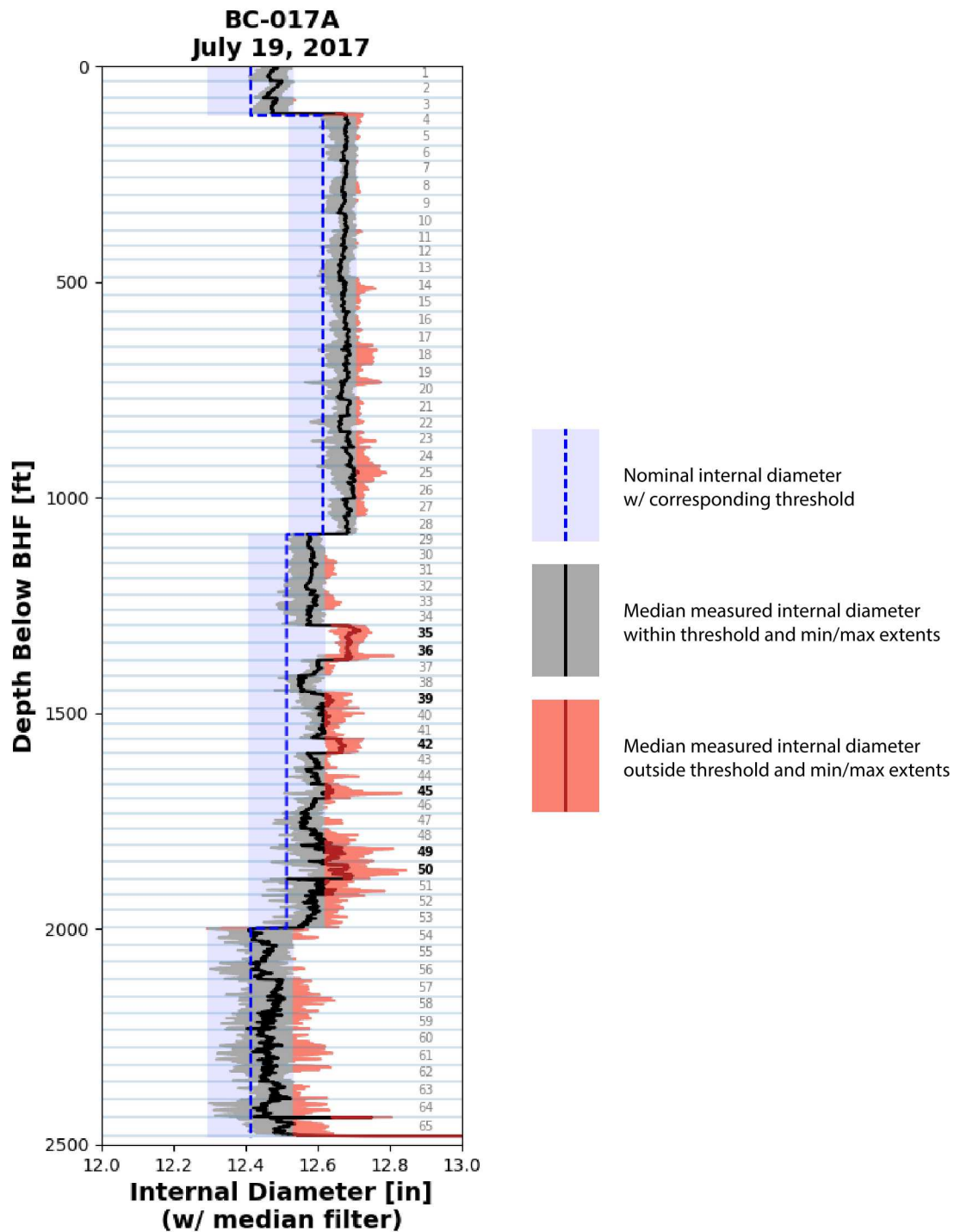


Figure 3-10 Measured internal diameter of BC-017A taken on July 19, 2017 with corrected orientation. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.6. Bayou Choctaw 018

At the time of writing there was a single survey of Bayou Choctaw 018. BC-018 is unique in that there is also a liner at the bottom portion of the well. The information for the original innermost cemented casing and the installed liner can be found in Tables 3-7 and 3-8 respectively. The MAC shows that the measured internal diameter for the innermost cemented casing is larger than described in the as-builts. The liner shows that several sections are also larger than described in the as-builts. The results are presented in Figures 3-11 and 3-12. Section details are detailed in Appendix A.

Table 3-7 BC-018 Innermost Cemented Casing As-Built Information

Grade	Outside Diameter		Connection Type		
K-55	13 3/8"		ST&C		

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
61	0	1792	0.43	12.515	1540

Table 3-8 BC-018 Innermost Cemented Casing As-Built Information

Grade	Outside Diameter		Connection Type		
K-55	10 3/4"		ST&C		

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
51	1676	2153	0.45	9.85	2700

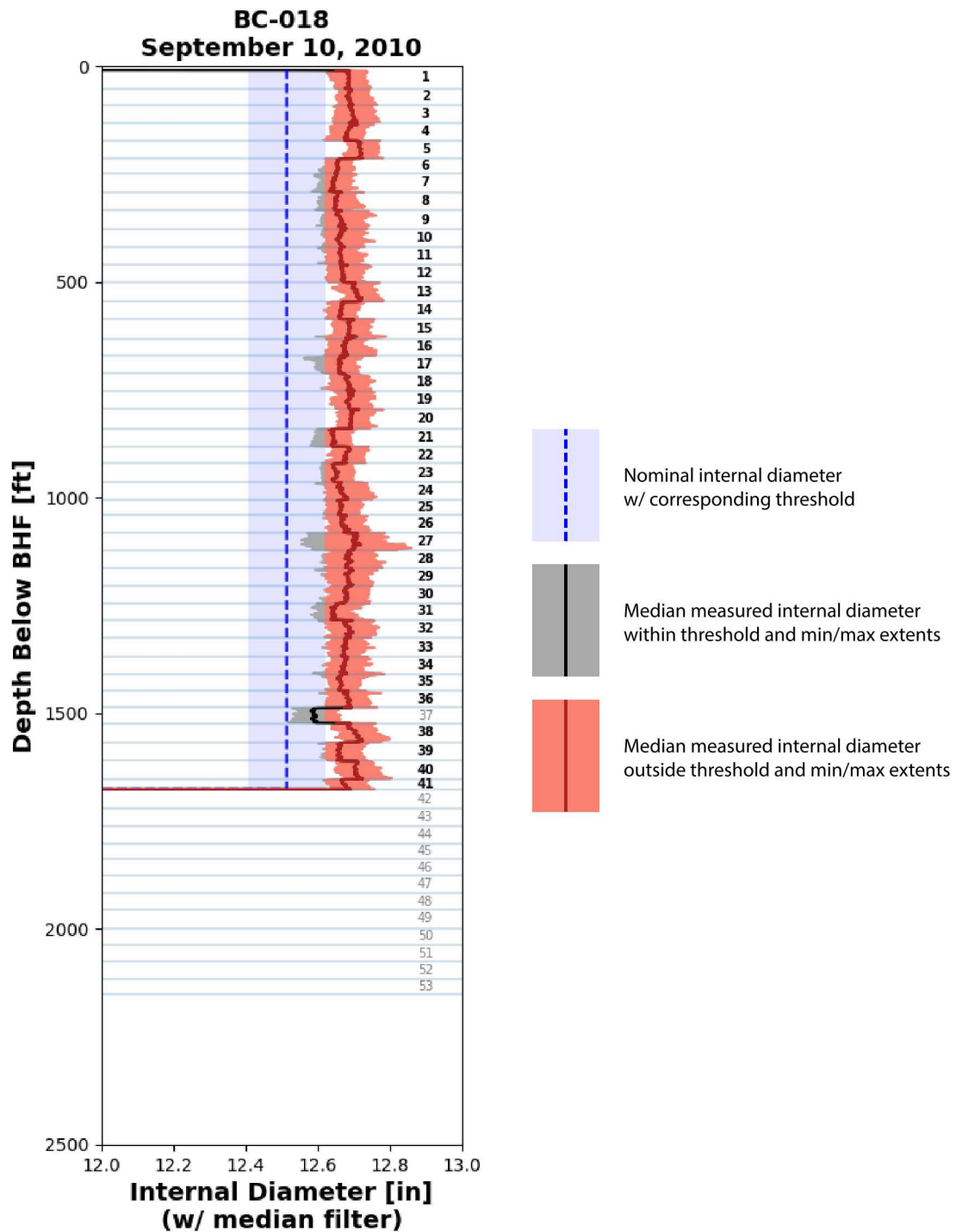


Figure 3-11 Measured internal diameter of the upper portion of BC-018 taken on September 10, 2010. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

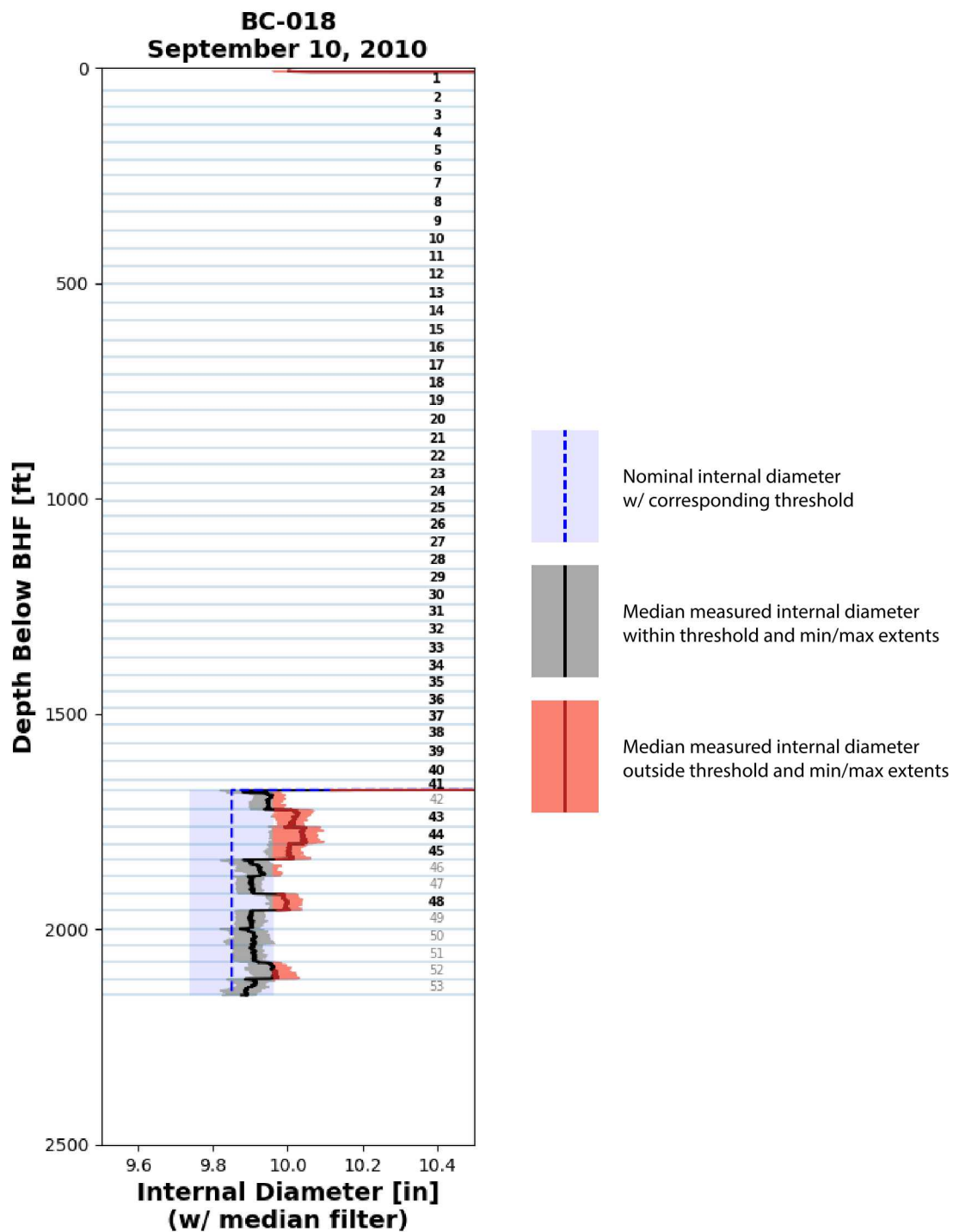


Figure 3-12 Measured internal diameter of the upper portion of BC-018 taken on September 27, 2010. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.7. Bayou Choctaw 018A

All sections of the 13 3/8" casing are within the expected tolerance as shown in Figure 3-13.

Table 3-9 BC-018A Innermost Cemented Casing As-Built Information

Grade	Outside Diameter	Connection Type
K-55	13 3/8"	ST&C

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
61	0	1787	0.43	12.515	1540

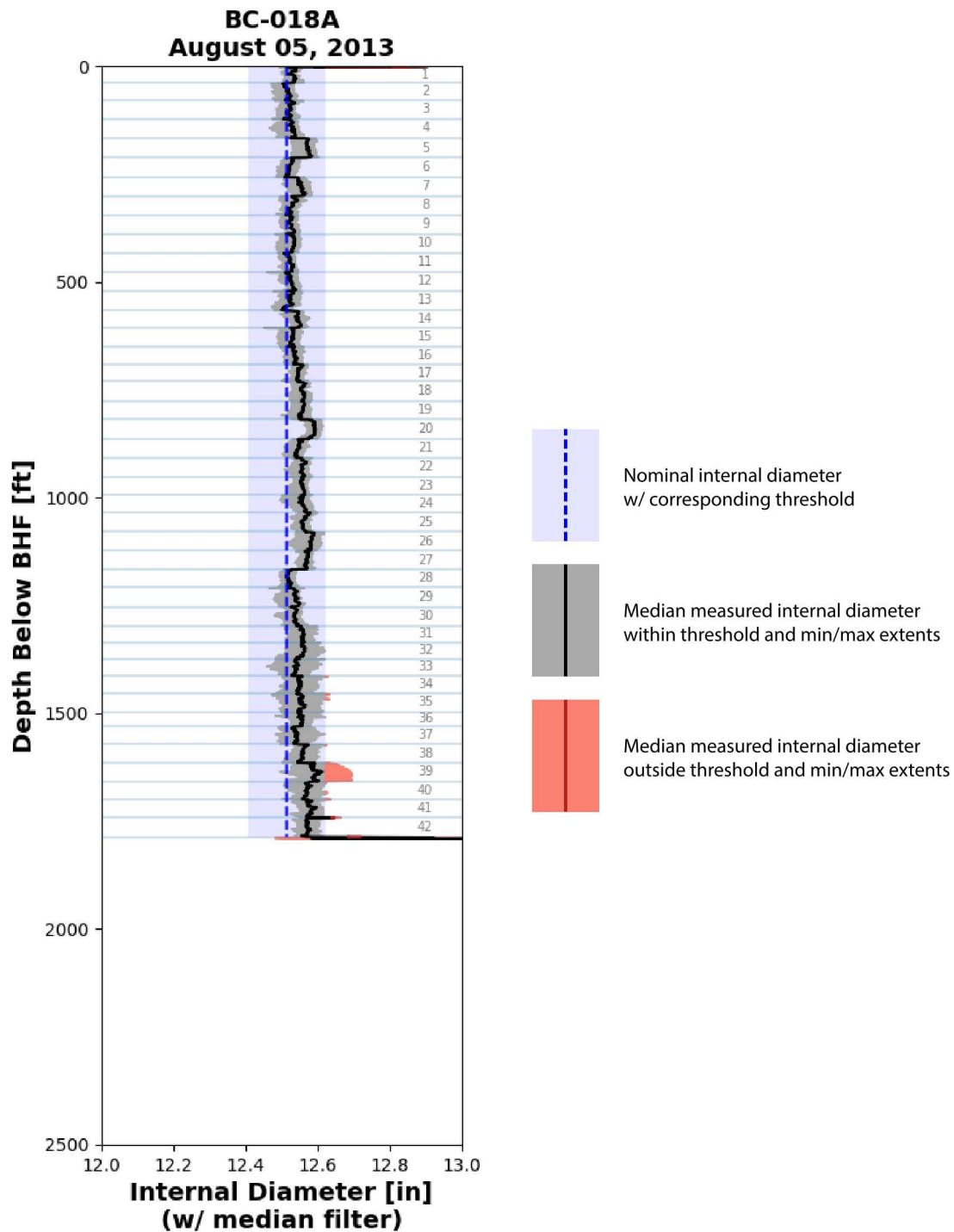


Figure 3-13 Measured internal diameter of BC-018A taken on August 5, 2013. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.8. Bayou Choctaw 019

Bayou Choctaw 19 has had 2 surveys, one in 2013 and another 2017. The innermost cemented casing is documented as a 16" and the section weights are shown as either 75 or 84 #/F, however, the depths of each casing weight are unknown. Figures 3-14 and 3-15 show the measured results with the tolerances for a 75 #/F as reference.

According to the estimates it appears a weight change in the casing occurs around 1630 ft. It's likely the 75 #/F sections are above 1630 ft. while the 84 #/F sections are below. The detailed estimates of section-by-section weights are shown in Appendix A.

Table 3-10 BC-019 Innermost Cemented Casing As-Built Information

Grade		Outside Diameter		Connection Type	
K-55		16"		ST&C	

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
84	0 (varies)	2305 (varies)	0.495	15.01	1410
75	0 (varies)	2305 (varies)	0.438	15.124	1020

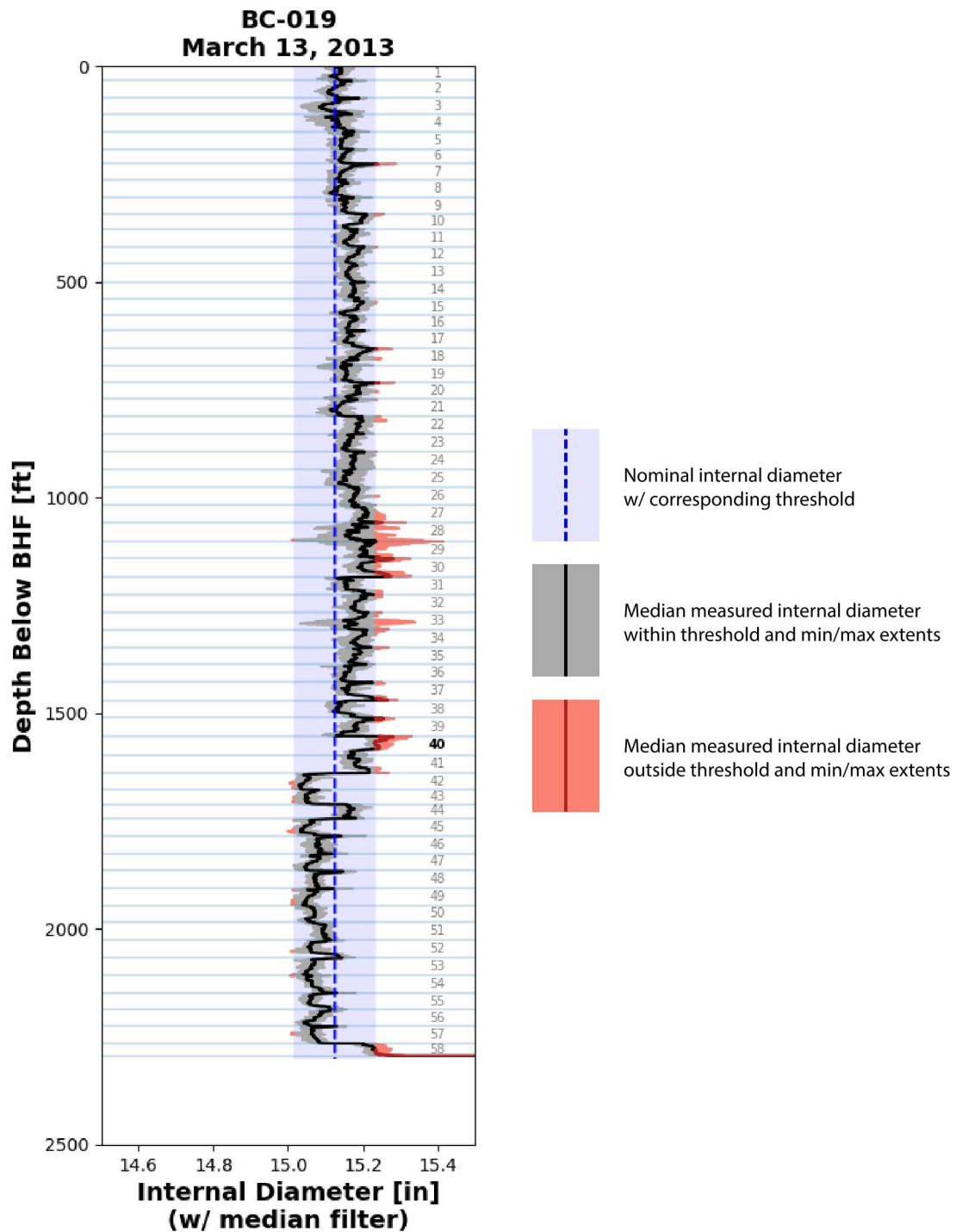


Figure 3-14 Measured internal diameter of BC-019 taken on March 13, 2013. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

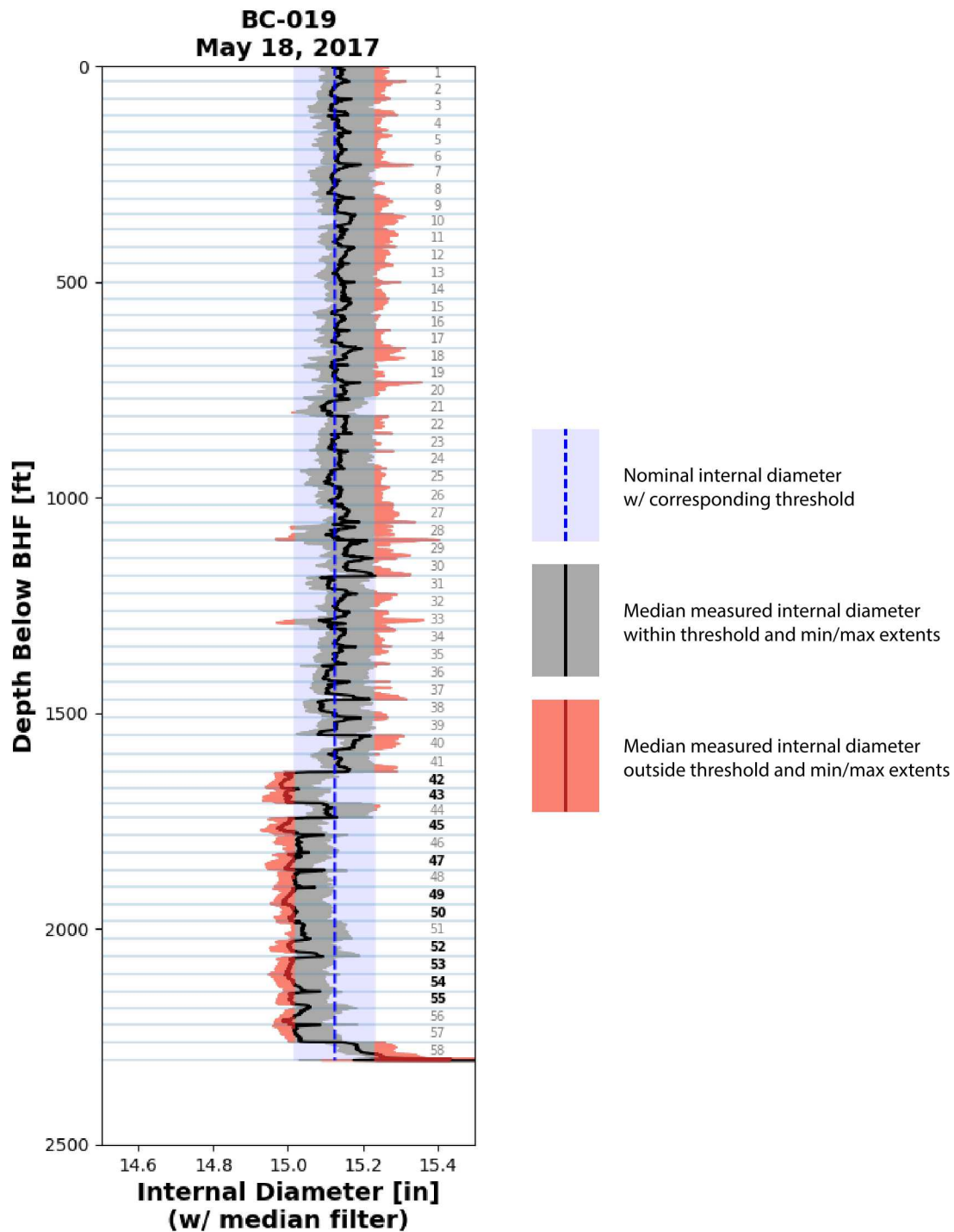


Figure 3-15 Measured internal diameter of BC-019 taken on May 18, 2017. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.9. Bayou Choctaw 019A

Bayou Choctaw 19A has had a single survey that indicates most sections are within the nominal tolerances.

Table 3-11 BC-019A Innermost Cemented Casing As-Built Information

Grade		Outside Diameter		Connection Type	
K-55		13 3/8"		ST&C	

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
54.5	0	2599	0.38	12.615	1130

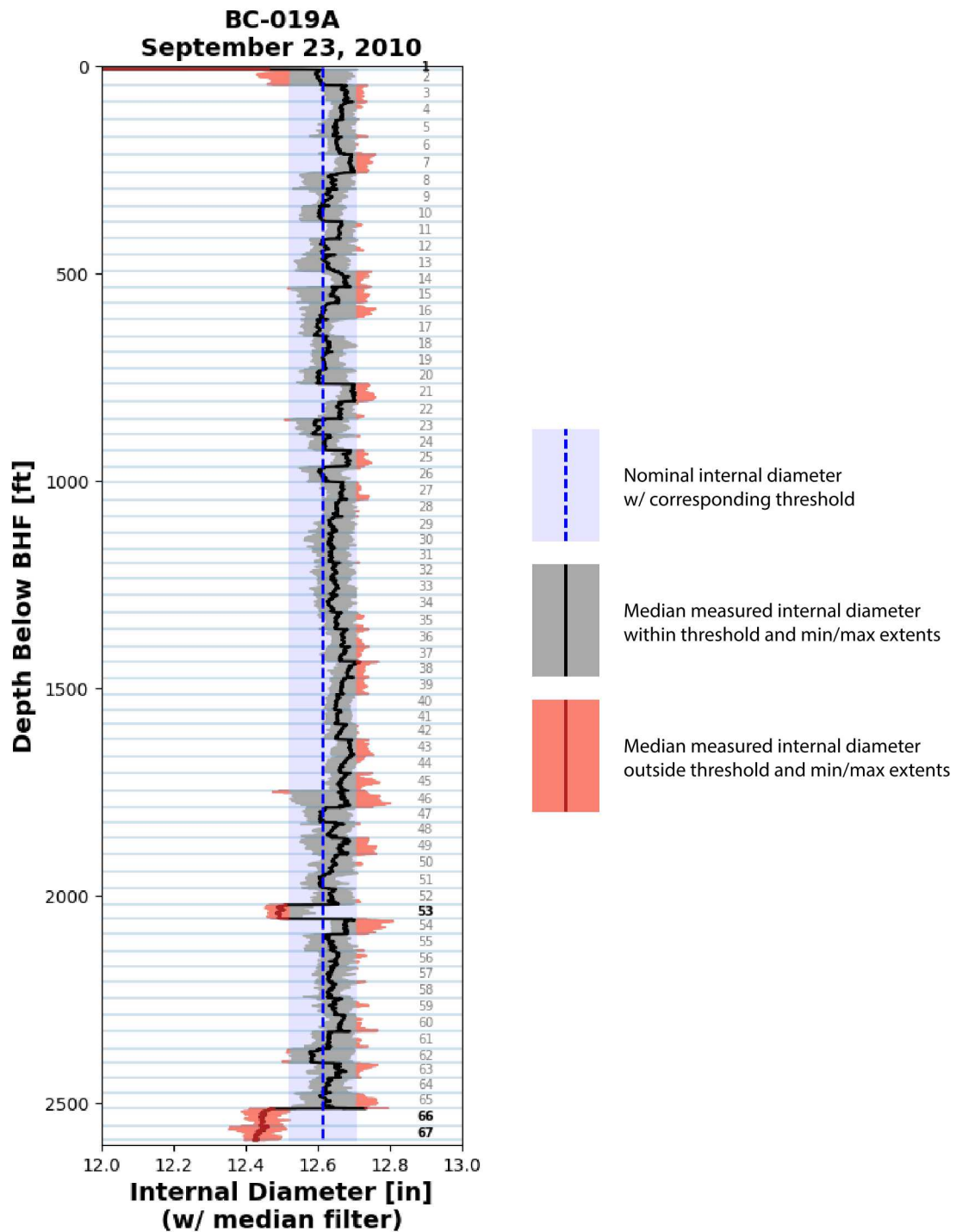


Figure 3-16 Measured internal diameter of BC-019A taken on September 23, 2010. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.10. Bayou Choctaw 020A

Bayou Choctaw 20A has had a single survey that indicates most of the sections are within the given tolerance. Only sections 28 and 61 are calculated to be out of tolerance. Section 28 is calculated to have a larger internal diameter and therefore thinner wall. Section 61 is calculated to be the opposite with a smaller inner diameter and thicker wall.

Table 3-12 BC-020A Innermost Cemented Casing As-Built Information

Grade		Outside Diameter		Connection Type	
K-55		13 3/8"		ST&C and HYDRIL	

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
54.5	0	1808	0.38	12.615	1130
61	1808	2422	0.43	12.515	1540

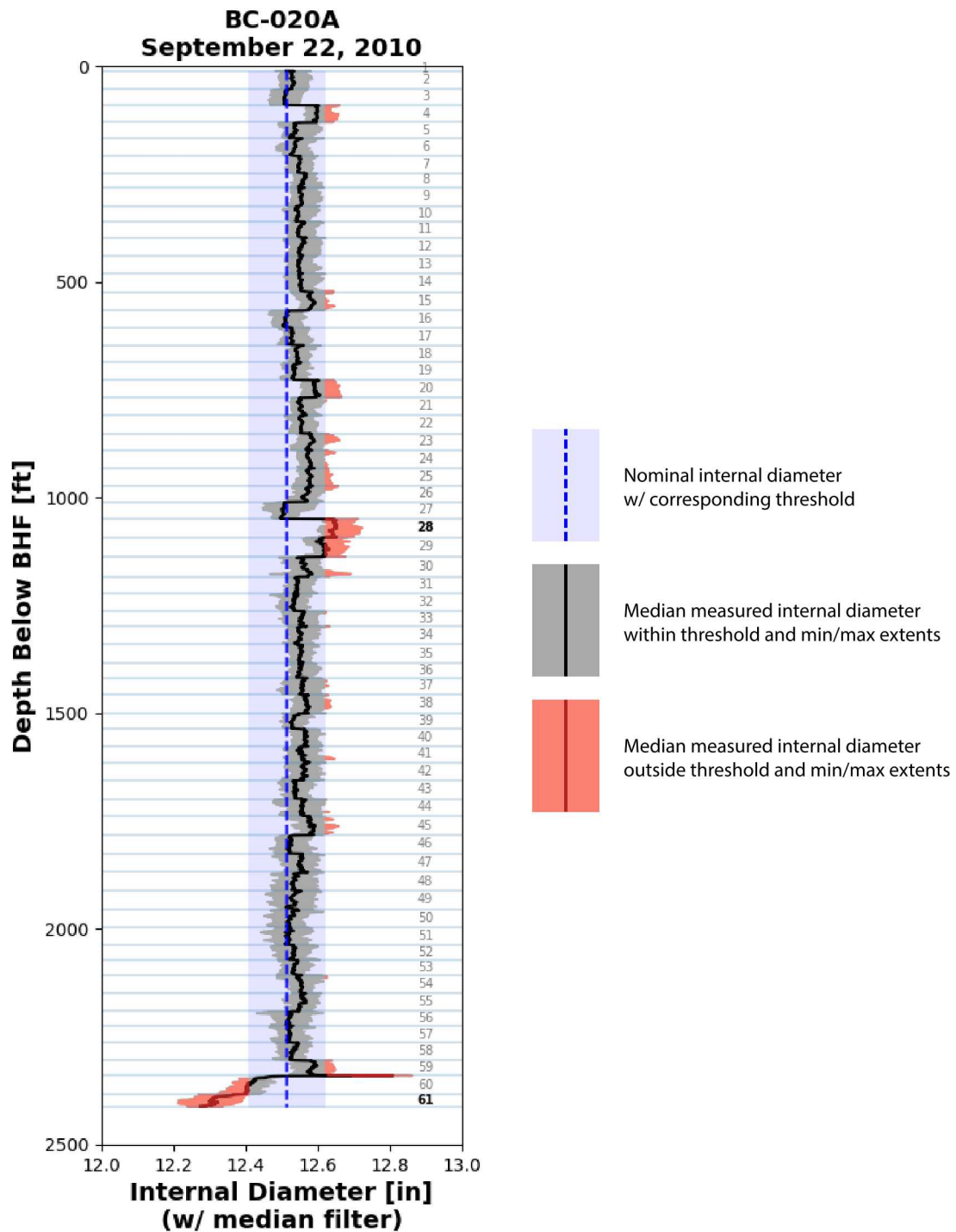


Figure 3-17 Measured internal diameter of BC-020A taken on September 22, 2010. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.11. Bayou Choctaw 101A

Bayou Choctaw 101A has had two surveys of the well. The innermost cemented casing has a 13 3/8" outer diameter and three different inner diameters (54.8 #/F, 61 #/F, and 68 #/F). Table 3-13 shows the information from the as-builts.

Most of the sections are within tolerance. Most of the out-of-tolerance sections are in the 61 #/F part of the well. These are sections 38, 42, 47, 48, and 52.

Table 3-13 BC-101A Innermost Cemented Casing As-Built Information

Grade	Outside Diameter		Connection Type		
K-55	13 3/8"		Buttress		

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
54.8	0	1478	0.38	12.615	1130
61	1478	2082	0.43	12.515	1540
68	2082	2424	0.48	12.415	1950

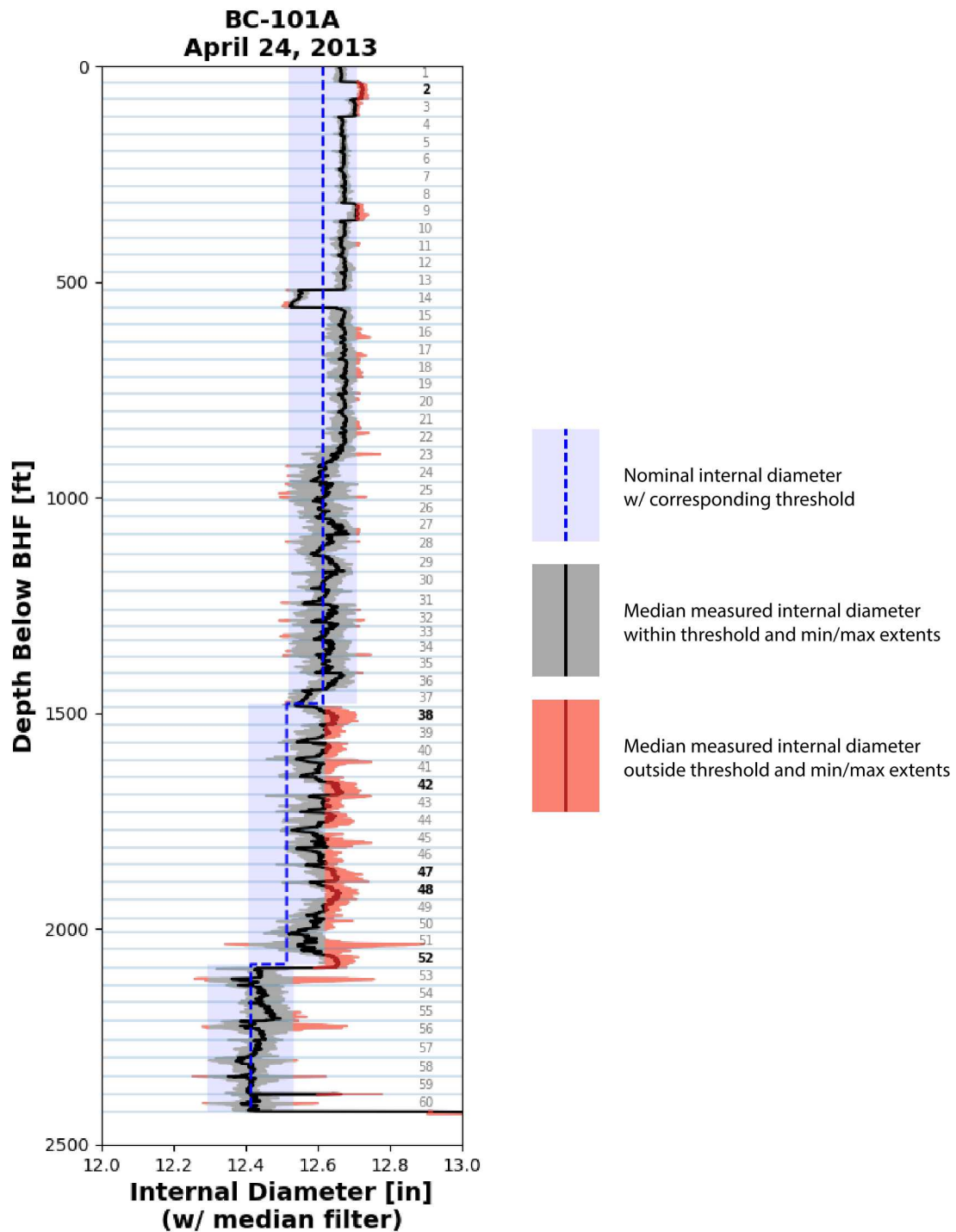


Figure 3-18 Measured internal diameter of BC-101A taken on April 24, 2013. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

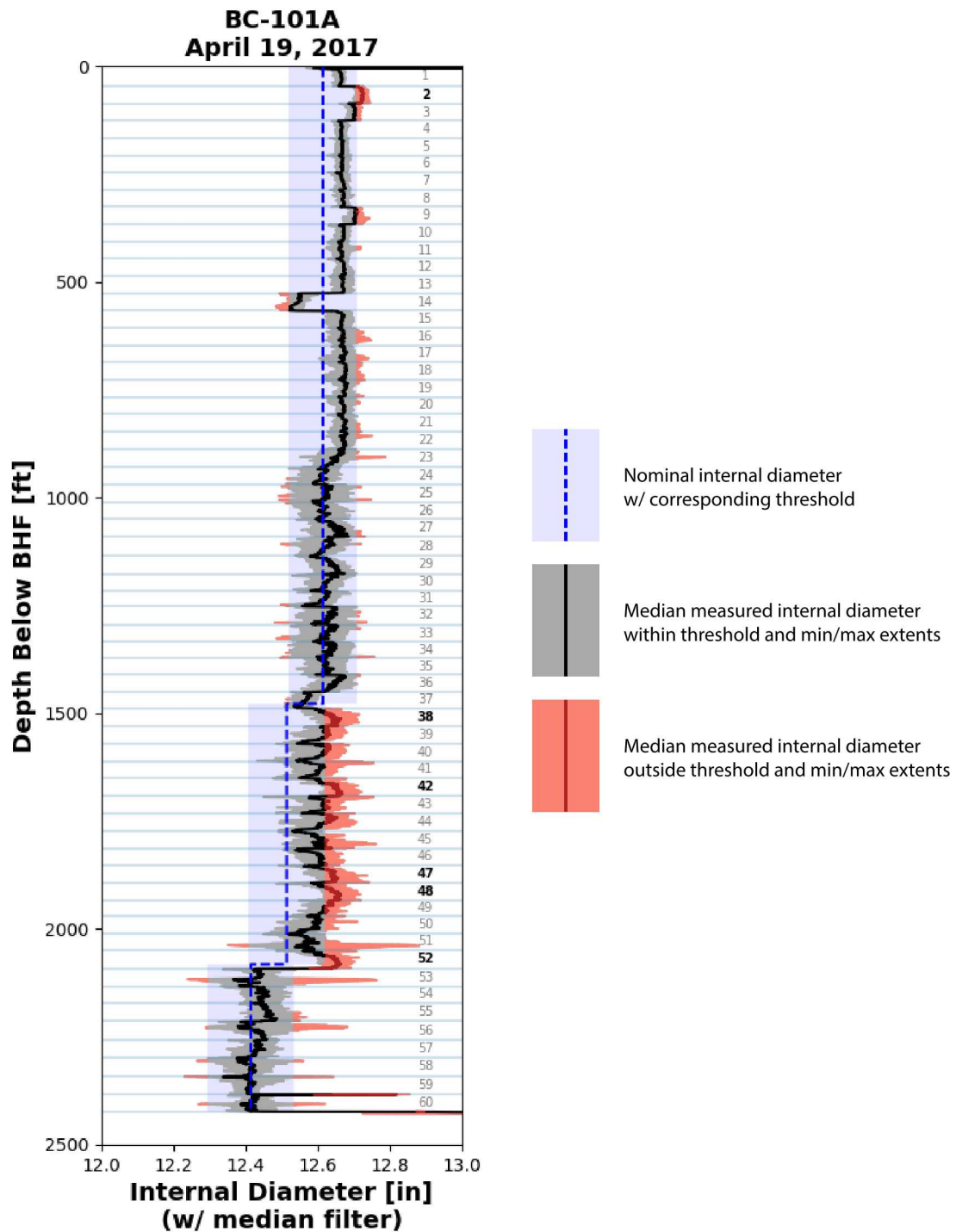


Figure 3-19 Measured internal diameter of BC-101A taken on April 19, 2017. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.12. Bayou Choctaw 101B

Bayou Choctaw 101B has had one MAC survey at the time of writing. It is a 13 3/8" casing with three different casing weights. The as-built details are in Table 3-20.

All of the sections are calculated to be within tolerance, however, the difference between the 54.8 #/F and 61 #/F sections are almost indistinguishable. It is possible that all of the sections described as 54.8 #/F are actually 61 #/F.

Table 3-14 BC-101B Innermost Cemented Casing As-Built Information

Grade	Outside Diameter		Connection Type		
K-55	13 3/8"		Buttress		

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
54.8	0	1483	0.38	12.615	1130
61	1483	2071	0.43	12.515	1540
68	2071	2403	0.48	12.415	1950

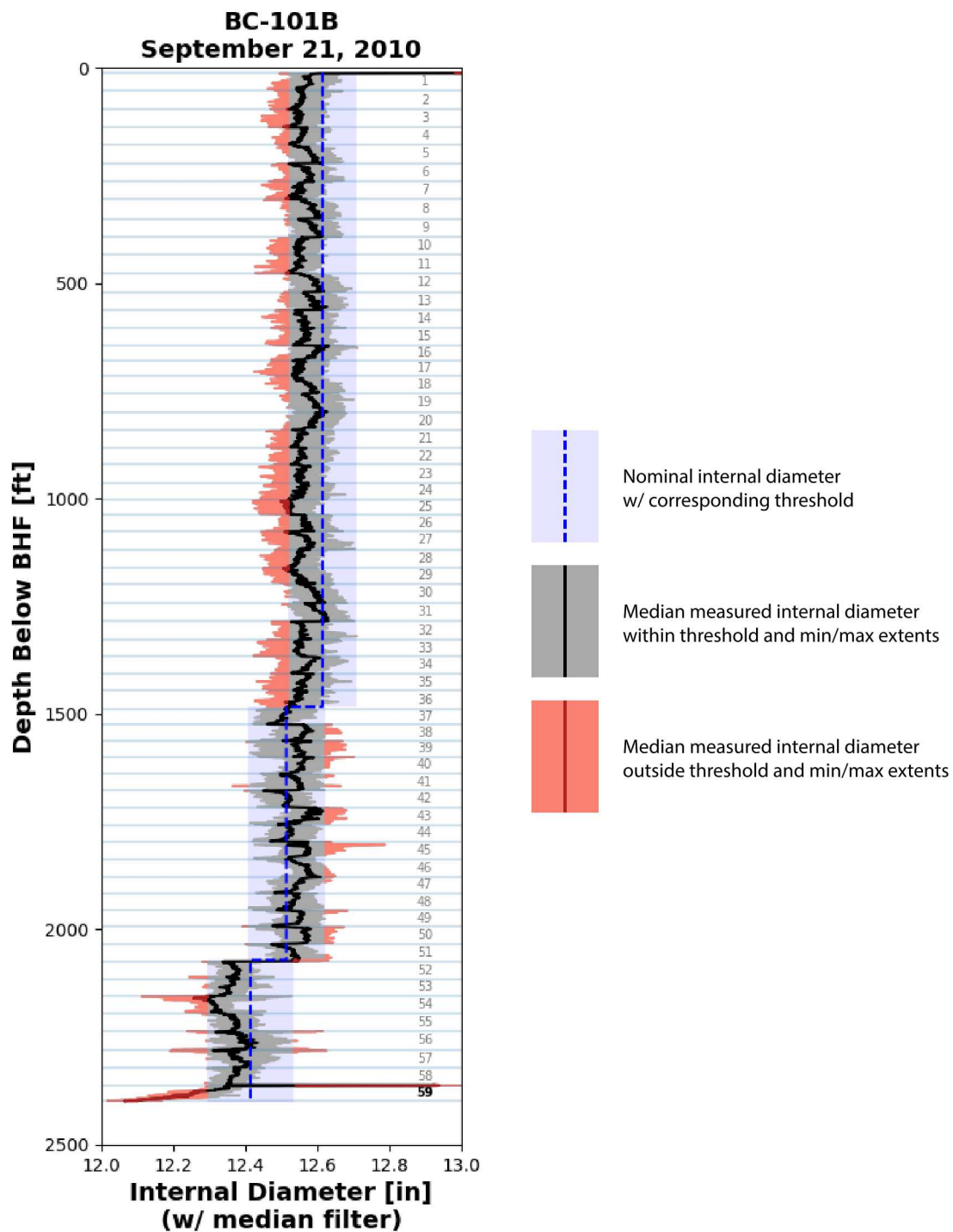


Figure 3-20 Measured internal diameter of BC-101B taken on September 21, 2010. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.13. Bayou Choctaw 102A

The innermost cemented casing is made out of a Grade B Line Pipe and has three different section weights. All of the calculated sections are within tolerance. It should be noted that the as-built drawings that Sandia Labs has access to are noted to have errors, however, it is not noted what errors are present. This will be rectified in future communications. In addition, there no collapse pressures could be found for the as-built configuration of the innermost cemented casing.

Table 3-15 BC-102A Innermost Cemented Casing As-Built Information.

Grade		Outside Diameter		Connection Type	
Grade B Line Pipe		14"		Not Specified	

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
106.13	0	60	0.75	12.5	Not Specified
97.80	60	1545	0.688	12.624	Not Specified
106.13	1545	2499	0.75	12.5	Not Specified

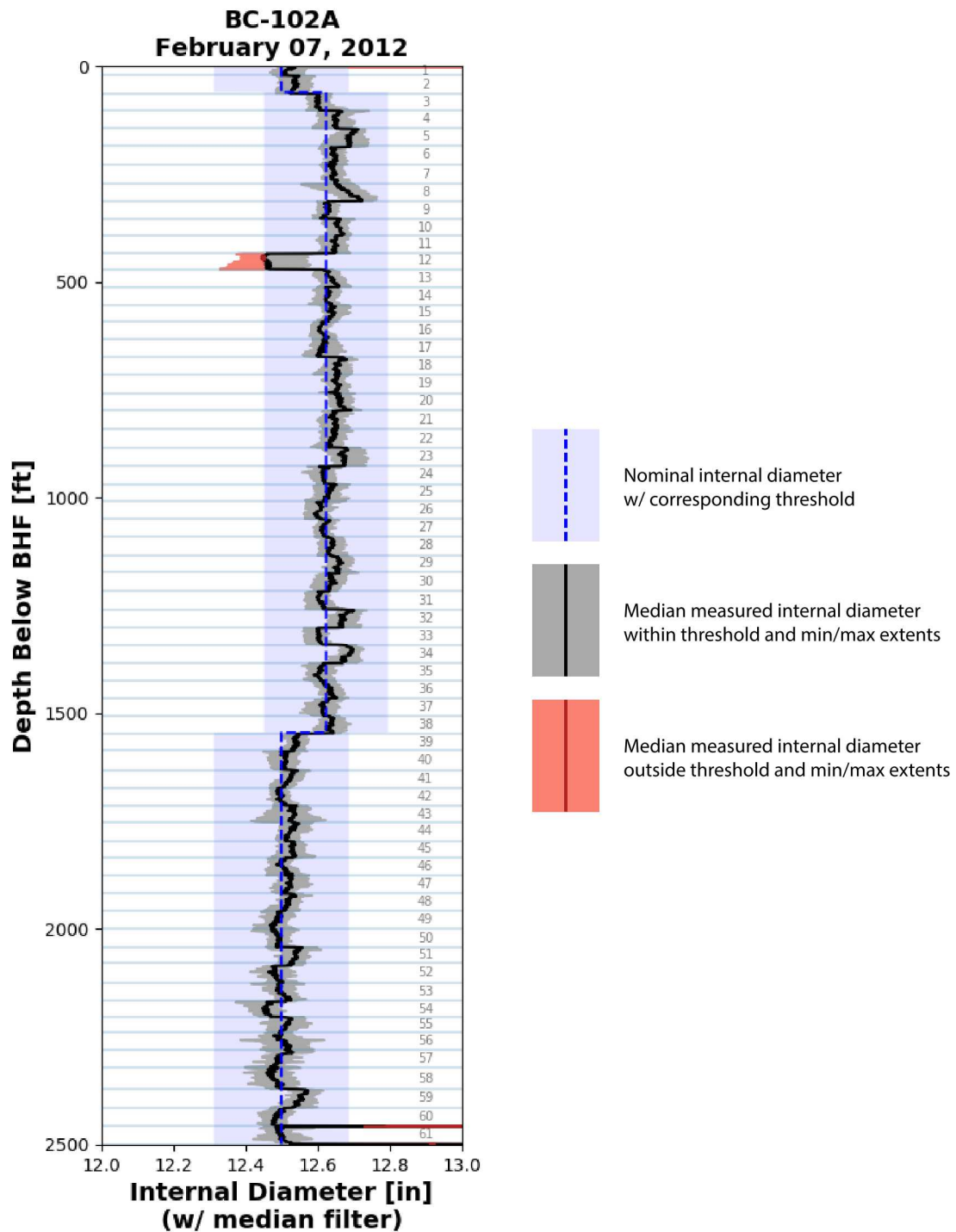


Figure 3-21 Measured internal diameter of BC-102A taken on February 7, 2012. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.14. Brine Disposal Well 001

Brine Disposal Well 001 at Bayou Choctaw has had a single survey completed in 2016. The casing measurements do not match the as-builts. It is likely the as-built drawings are incorrect because 1) casing weights typically increase with depth (not decrease) and 2) if the depth measurement is changed to distance from the bottom of the well the internal diameters match significantly better. In fact, there are no sections outside tolerance if the depth listed in the as-builts is taken as depth from bottom of the well. It should be noted that Figure 3-23 only shows two different section weights. This is because the well extends beyond the extents of the survey to a depth of 6681 ft.

Table 3-16 BDW-001 Innermost Cemented Casing As-Built Information. * indicates depths were measured from the RKB which is 19 ft. above the BHF

Grade		Outside Diameter		Connection Type	
Not Specified		9 5/8"		Not Specified	

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
43.5	0*	1481*	0.435	8.755	Not Specified
40	1481*	3773*	0.395	8.835	Not Specified
36	3773*	6681*	0.352	8.921	Not Specified

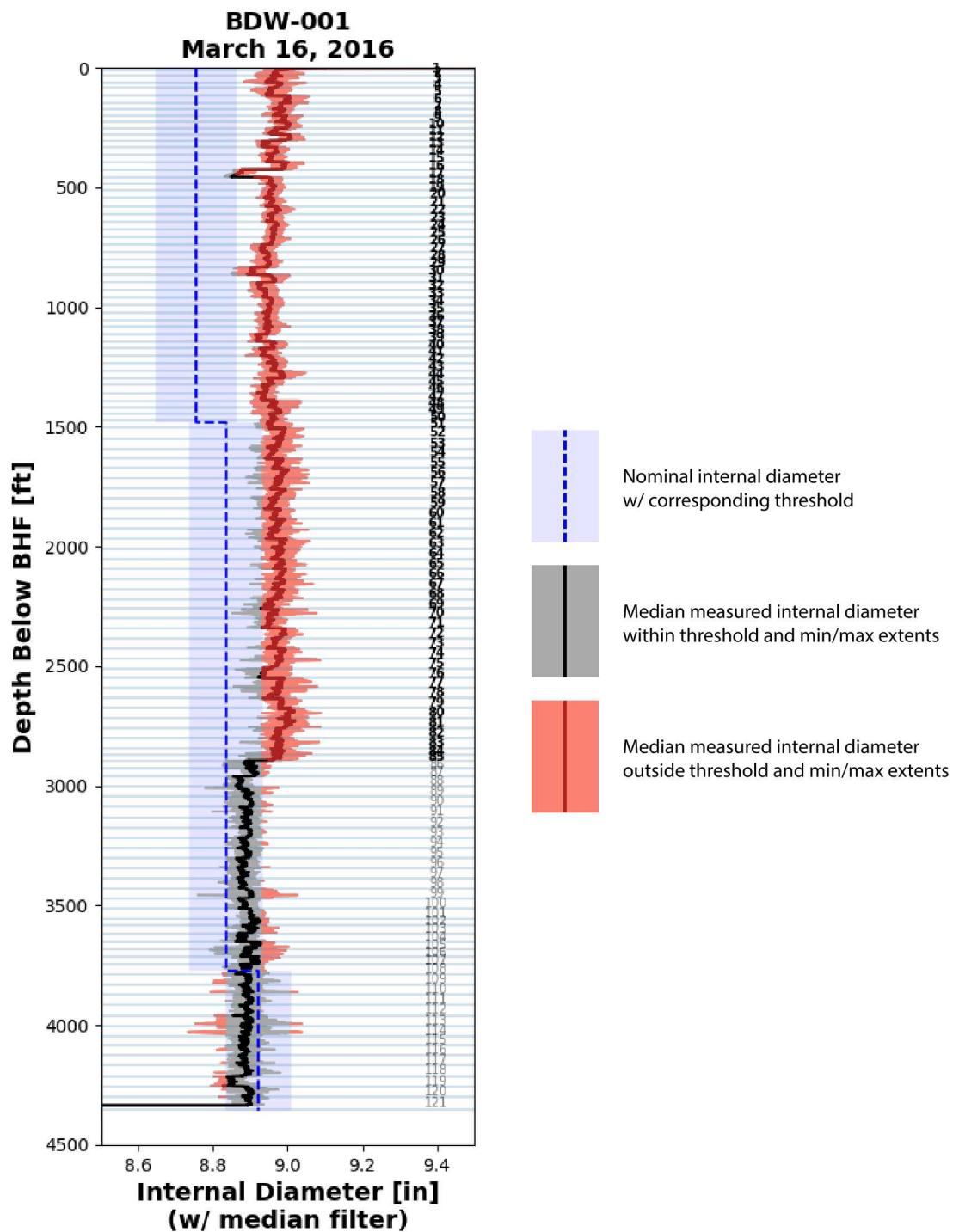


Figure 3-22 Measured internal diameter of BDW-001 taken on March 16, 2016. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

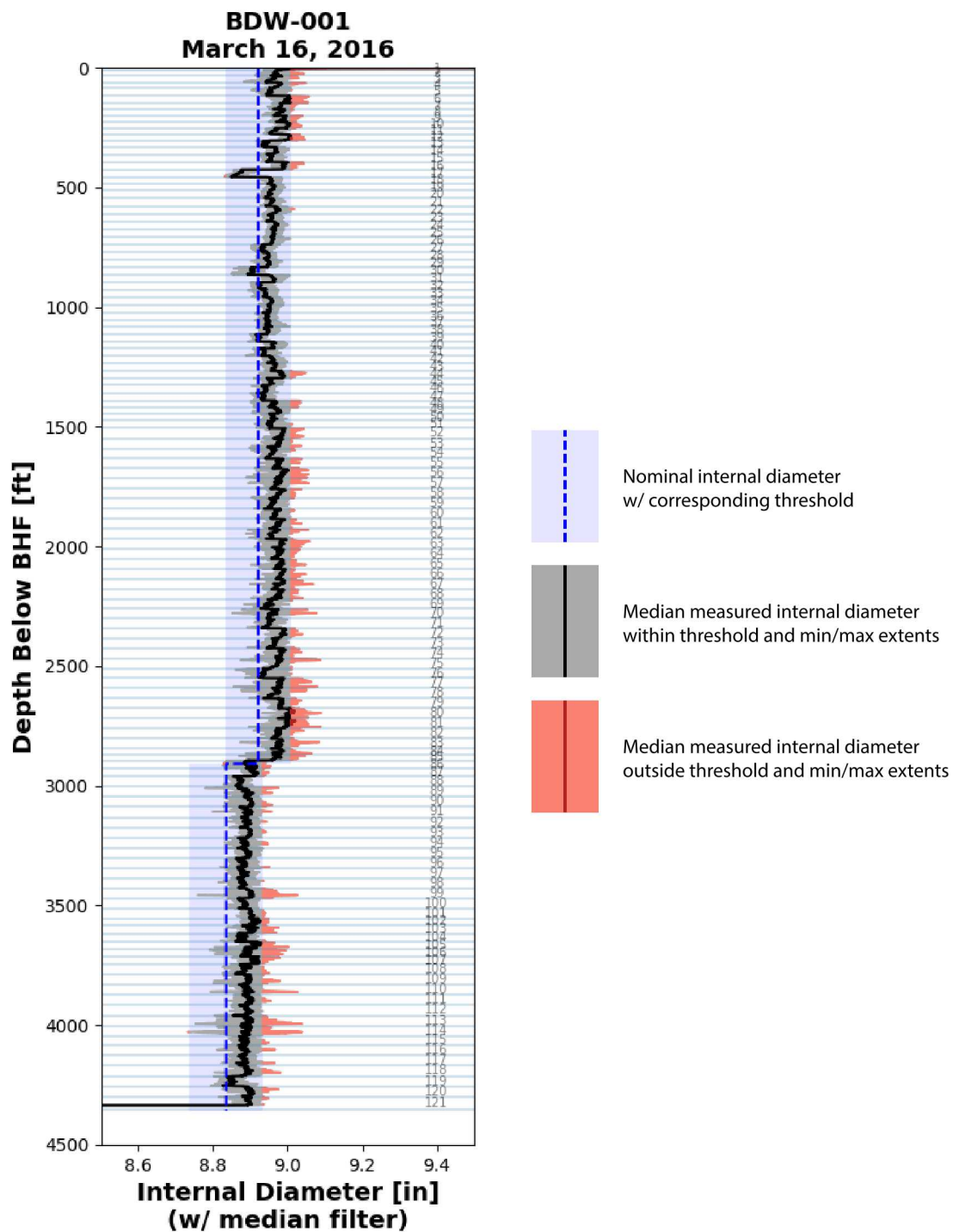


Figure 3-23 Measured internal diameter of BDW-001 taken on March 16, 2016 with corrected orientation. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.15. Brine Disposal Well 007

All of the sections are within tolerance of the nominal values provided in the as-built drawings.

Table 3-17 BDW-007 Innermost Cemented Casing As-Built Information

Grade		Outside Diameter		Connection Type	
Not Specified		9 5/8"		Not Specified	

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
36	0	3550	0.352	8.921	Not Specified
43.5	3550	6615	0.435	8.755	Not Specified

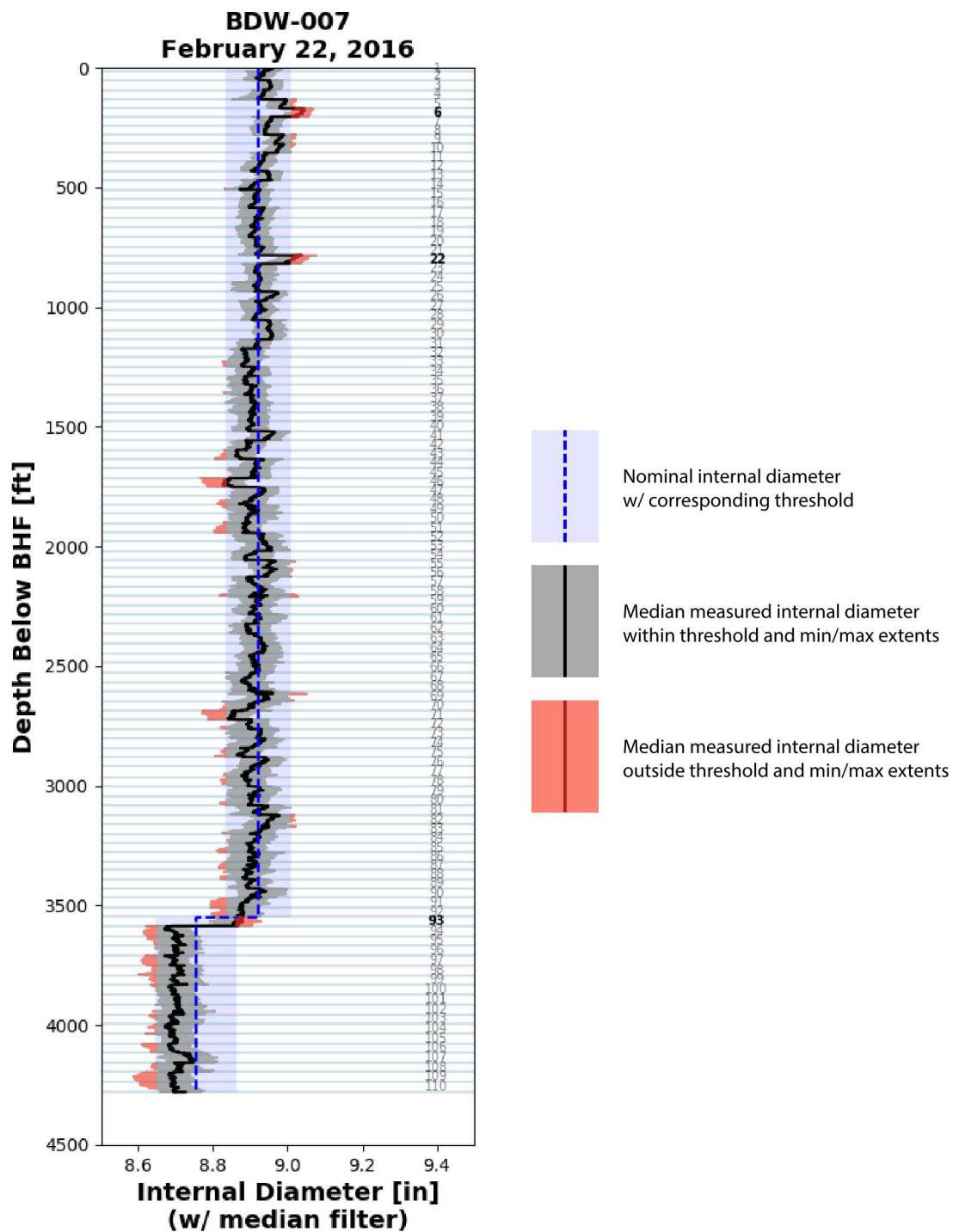


Figure 3-24 Measured internal diameter of BDW-007 taken on February 22, 2016. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

3.16. Brine Disposal Well 010

Most of the sections in Brine Disposal Well 010 are out of tolerance. The out of tolerance sections are have larger internal diameters than indicated in the as-builts. This would suggest this casing has thinner walls than the as-builts indicate. It should be mentioned that all of the sections outside of tolerance are still near the acceptable limits.

Table 3-18 BDW-010 Innermost Cemented Casing As-Built Information. * indicates measurements were taken below RKB which is 16ft above BHF.

Grade	Outside Diameter		Connection Type		
Not Specified	9 5/8"		Not Specified		

#/F	Depth From [ft]	Depth To [ft]	Wall Thickness [in]	Internal Diameter [in]	Collapse Pressure [psi]
36 (40)	0*	3708*	0.352 (0.395)	8.921 (8.835)	Not Specified
43.5	3708*	7224*	0.435	8.755	Not Specified

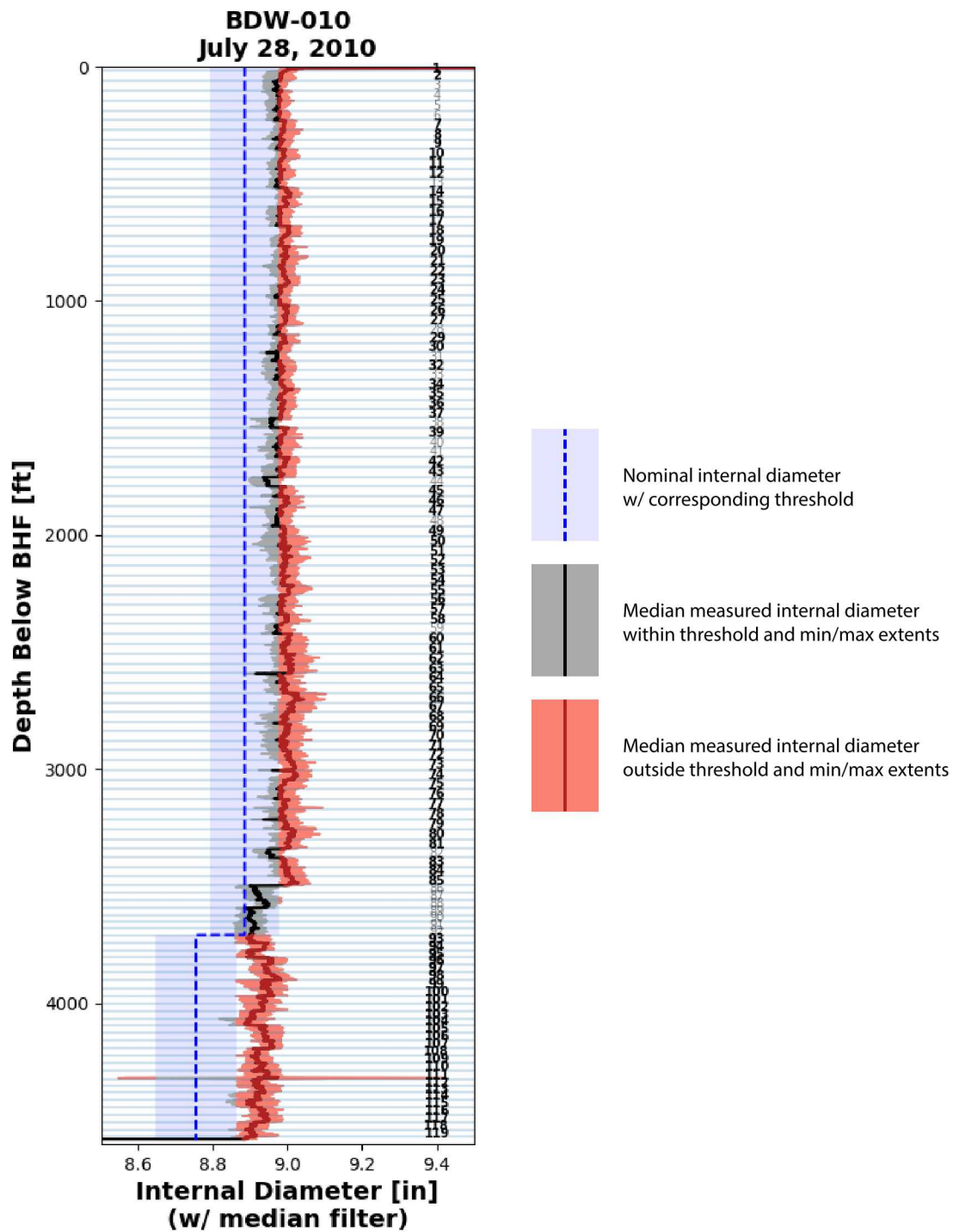


Figure 3-25 Measured internal diameter of BDW-010 taken on July 28, 2010. The blue horizontal lines show the estimated casing section depths with the corresponding section numbers.

4. DISCUSSION / CONCLUSION

Many of the well sections at Bayou Choctaw are within or near the as-built specification. Even the wells outside API tolerance do not differ significantly from the as-built specifications. There are, however, wells with incorrect as-built drawings. Information from this report should be used to update the current drawings to allow for more accurate engineering solutions in the future.

REFERENCES

- [1] ASTM International. *Standard Specification for General Requirements for Alloy and Stainless Steel Pipe*, 2004.
- [2] Dylan M. Moriarty. Well casing baseline analysis for the west hackberry strategic petroleum reserve site, 2017.
- [3] Dylan M. Moriarty. 2018 bryan mound baseline casing analysis, 2018.
- [4] Dylan M. Moriarty and Barry L. Roberts. Well casing baseline analysis for the big hill strategic petroleum reserve site, 2016.
- [5] PB-KBB Inc. *Planning Studies , Preliminary and Conceptual Design and Geotechnical Investigations*.
- [6] Barry L. Roberts. Analysis of mulit-arm caliper data for the u.s. strategic petroleum reserve, 2015.

APPENDIX A. TABULAR WELL SECTION INFORMATION

The tables in Appendix A show casing weight calculations for each well section. Specifically, the tables present information from the decision process. For each section there is a given depth calculated using the process detailed in the methodology section. Each of the depths are measured from the bradenhead flange and rounded to the nearest foot. Second, there are the relevant as-built dimensions for each section which include nominal outer depth, nominal casing weight, and nominal inner diameter. Next, the median internal diameter is presented for each section along with the casing weight that best reflects the measured diameter. The next column shows if the measured median inner diameter is within tolerance for the given nominal casing weight. If the internal diameter is within tolerance, the casing section is considered to be the nominal casing weight. If the measured internal diameter is outside tolerance, then the well casing is calculated to be that of the closest calculated casing weight.

A.1. Bayou Choctaw 015

Table A-1 BC-015 detailed section information taken on September 27, 2010

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	35	10.750	51	9.850	10.112	35.75	FALSE	35.75
2	35	82	10.750	51	9.850	9.935	45.5	TRUE	51
3	82	126	10.750	51	9.850	9.859	51	TRUE	51
4	126	173	10.750	51	9.850	9.944	45.5	TRUE	51
5	173	220	10.750	51	9.850	9.900	45.5	TRUE	51
6	220	264	10.750	51	9.850	9.880	51	TRUE	51
7	264	312	10.750	51	9.850	9.884	51	TRUE	51
8	312	360	10.750	51	9.850	9.882	51	TRUE	51
9	360	408	10.750	51	9.850	9.879	51	TRUE	51
10	408	455	10.750	51	9.850	9.886	51	TRUE	51
11	455	501	10.750	51	9.850	9.923	45.5	TRUE	51
12	501	549	10.750	51	9.850	9.920	45.5	TRUE	51
13	549	591	10.750	51	9.850	9.917	45.5	TRUE	51
14	591	635	10.750	51	9.850	9.915	45.5	TRUE	51
15	635	680	10.750	51	9.850	9.887	51	TRUE	51
16	680	728	10.750	51	9.850	9.913	45.5	TRUE	51
17	728	772	10.750	51	9.850	9.902	45.5	TRUE	51
18	772	819	10.750	51	9.850	9.937	45.5	TRUE	51
19	819	866	10.750	51	9.850	9.881	51	TRUE	51
20	866	914	10.750	51	9.850	9.926	45.5	TRUE	51
21	914	962	10.750	51	9.850	9.926	45.5	TRUE	51
22	962	1009	10.750	51	9.850	9.905	45.5	TRUE	51
23	1009	1056	10.750	51	9.850	9.896	51	TRUE	51
24	1056	1102	10.750	51	9.850	9.902	45.5	TRUE	51
25	1102	1150	10.750	51	9.850	9.913	45.5	TRUE	51
26	1150	1196	10.750	51	9.850	9.924	45.5	TRUE	51
27	1196	1241	10.750	51	9.850	9.895	51	TRUE	51
28	1241	1289	10.750	51	9.850	9.885	51	TRUE	51
29	1289	1336	10.750	51	9.850	9.921	45.5	TRUE	51
30	1336	1379	10.750	51	9.850	9.909	45.5	TRUE	51
31	1379	1425	10.750	51	9.850	9.884	51	TRUE	51
32	1425	1472	10.750	51	9.850	9.894	51	TRUE	51
33	1472	1519	10.750	51	9.850	9.901	45.5	TRUE	51
34	1519	1565	10.750	51	9.850	9.877	51	TRUE	51
35	1565	1610	10.750	51	9.850	9.910	45.5	TRUE	51
36	1610	1655	10.750	51	9.850	9.914	45.5	TRUE	51
37	1655	1701	10.750	51	9.850	9.914	45.5	TRUE	51
38	1701	1747	10.750	51	9.850	9.924	45.5	TRUE	51
39	1747	1793	10.750	51	9.850	9.928	45.5	TRUE	51
40	1793	1840	10.750	51	9.850	9.945	45.5	TRUE	51
41	1840	1884	10.750	51	9.850	9.895	51	TRUE	51
42	1884	1932	10.750	51	9.850	9.912	45.5	TRUE	51
43	1932	1979	10.750	51	9.850	9.895	51	TRUE	51
44	1979	2026	10.750	51	9.850	9.946	45.5	TRUE	51
45	2026	2072	10.750	51	9.850	9.893	51	TRUE	51
46	2072	2115	10.750	51	9.850	9.910	45.5	TRUE	51
47	2115	2161	10.750	51	9.850	9.898	51	TRUE	51
48	2161	2209	10.750	51	9.850	9.903	45.5	TRUE	51
49	2209	2256	10.750	51	9.850	9.933	45.5	TRUE	51
50	2256	2303	10.750	51	9.850	9.890	51	TRUE	51
51	2303	2350	10.750	51	9.850	9.943	45.5	TRUE	51
52	2350	2398	10.750	51	9.850	9.916	45.5	TRUE	51
53	2398	2445	10.750	51	9.850	9.876	51	TRUE	51

Table A-2 BC-015 detailed section information taken on September 23, 2015

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	8	10.750	51	9.850	10.105	35.75	FALSE	35.75
2	8	56	10.750	51	9.850	9.932	45.5	TRUE	51
3	56	100	10.750	51	9.850	9.855	51	TRUE	51
4	100	147	10.750	51	9.850	9.937	45.5	TRUE	51
5	147	195	10.750	51	9.850	9.894	51	TRUE	51
6	195	239	10.750	51	9.850	9.872	51	TRUE	51
7	239	287	10.750	51	9.850	9.877	51	TRUE	51
8	287	335	10.750	51	9.850	9.875	51	TRUE	51
9	335	383	10.750	51	9.850	9.869	51	TRUE	51
10	383	430	10.750	51	9.850	9.881	51	TRUE	51
11	430	476	10.750	51	9.850	9.914	45.5	TRUE	51
12	476	524	10.750	51	9.850	9.915	45.5	TRUE	51
13	524	566	10.750	51	9.850	9.904	45.5	TRUE	51
14	566	610	10.750	51	9.850	9.907	45.5	TRUE	51
15	610	656	10.750	51	9.850	9.877	51	TRUE	51
16	656	704	10.750	51	9.850	9.906	45.5	TRUE	51
17	704	748	10.750	51	9.850	9.893	51	TRUE	51
18	748	796	10.750	51	9.850	9.929	45.5	TRUE	51
19	796	843	10.750	51	9.850	9.873	51	TRUE	51
20	843	891	10.750	51	9.850	9.918	45.5	TRUE	51
21	891	939	10.750	51	9.850	9.918	45.5	TRUE	51
22	939	986	10.750	51	9.850	9.899	51	TRUE	51
23	986	1033	10.750	51	9.850	9.889	51	TRUE	51
24	1033	1079	10.750	51	9.850	9.896	51	TRUE	51
25	1079	1127	10.750	51	9.850	9.907	45.5	TRUE	51
26	1127	1173	10.750	51	9.850	9.915	45.5	TRUE	51
27	1173	1220	10.750	51	9.850	9.889	51	TRUE	51
28	1220	1267	10.750	51	9.850	9.877	51	TRUE	51
29	1267	1357	10.750	51	9.850	9.906	45.5	TRUE	51
30	1357	1403	10.750	51	9.850	9.877	51	TRUE	51
31	1403	1450	10.750	51	9.850	9.889	51	TRUE	51
32	1450	1497	10.750	51	9.850	9.895	51	TRUE	51
33	1497	1543	10.750	51	9.850	9.871	51	TRUE	51
34	1543	1588	10.750	51	9.850	9.902	45.5	TRUE	51
35	1588	1634	10.750	51	9.850	9.899	51	TRUE	51
36	1634	1680	10.750	51	9.850	9.907	45.5	TRUE	51
37	1680	1726	10.750	51	9.850	9.916	45.5	TRUE	51
38	1726	1772	10.750	51	9.850	9.920	45.5	TRUE	51
39	1772	1819	10.750	51	9.850	9.937	45.5	TRUE	51
40	1819	1864	10.750	51	9.850	9.889	51	TRUE	51
41	1864	1911	10.750	51	9.850	9.905	45.5	TRUE	51
42	1911	1958	10.750	51	9.850	9.888	51	TRUE	51
43	1958	2006	10.750	51	9.850	9.936	45.5	TRUE	51
44	2006	2052	10.750	51	9.850	9.888	51	TRUE	51
45	2052	2096	10.750	51	9.850	9.903	45.5	TRUE	51
46	2096	2142	10.750	51	9.850	9.891	51	TRUE	51
47	2142	2189	10.750	51	9.850	9.896	51	TRUE	51
48	2189	2237	10.750	51	9.850	9.925	45.5	TRUE	51
49	2237	2284	10.750	51	9.850	9.884	51	TRUE	51
50	2284	2331	10.750	51	9.850	9.937	45.5	TRUE	51
51	2331	2379	10.750	51	9.850	9.912	45.5	TRUE	51
52	2379	2429	10.750	51	9.850	9.870	51	TRUE	51
53	2429	2477	10.750	51	9.850	9.895	51	TRUE	51

A.2. Bayou Choctaw 15A

Table A-3 BM-15A detailed section information taken on June 27, 2013

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	19	13.375	61	12.515	12.592	54.5	TRUE	61
2	19	55	13.375	61	12.515	12.487	61	TRUE	61
3	55	97	13.375	61	12.515	12.527	61	TRUE	61
4	97	136	13.375	61	12.515	12.542	61	TRUE	61
5	136	174	13.375	61	12.515	12.620	54.5	TRUE	61
6	174	215	13.375	61	12.515	12.565	54.5	TRUE	61
7	215	257	13.375	61	12.515	12.536	61	TRUE	61
8	257	298	13.375	61	12.515	12.573	54.5	TRUE	61
9	298	338	13.375	61	12.515	12.538	61	TRUE	61
10	338	379	13.375	61	12.515	12.547	61	TRUE	61
11	379	416	13.375	61	12.515	12.545	61	TRUE	61
12	416	456	13.375	61	12.515	12.555	61	TRUE	61
13	456	497	13.375	61	12.515	12.584	54.5	TRUE	61
14	497	541	13.375	61	12.515	12.561	61	TRUE	61
15	541	583	13.375	61	12.515	12.562	61	TRUE	61
16	583	627	13.375	61	12.515	12.576	54.5	TRUE	61
17	627	669	13.375	61	12.515	12.545	61	TRUE	61
18	669	711	13.375	61	12.515	12.545	61	TRUE	61
19	711	754	13.375	61	12.515	12.563	61	TRUE	61
20	754	796	13.375	61	12.515	12.548	61	TRUE	61
21	796	834	13.375	61	12.515	12.557	61	TRUE	61
22	834	873	13.375	61	12.515	12.553	61	TRUE	61
23	873	918	13.375	61	12.515	12.562	61	TRUE	61
24	918	960	13.375	61	12.515	12.587	54.5	TRUE	61
25	960	994	13.375	61	12.515	12.575	54.5	TRUE	61
26	994	1035	13.375	61	12.515	12.532	61	TRUE	61
27	1035	1071	13.375	61	12.515	12.590	54.5	TRUE	61
28	1071	1115	13.375	61	12.515	12.530	61	TRUE	61
29	1115	1160	13.375	61	12.515	12.526	61	TRUE	61
30	1160	1204	13.375	61	12.515	12.527	61	TRUE	61
31	1204	1249	13.375	61	12.515	12.535	61	TRUE	61
32	1249	1293	13.375	61	12.515	12.524	61	TRUE	61
33	1293	1335	13.375	61	12.515	12.557	61	TRUE	61
34	1335	1374	13.375	61	12.515	12.566	54.5	TRUE	61
35	1374	1420	13.375	61	12.515	12.524	61	TRUE	61
36	1420	1464	13.375	61	12.515	12.530	61	TRUE	61
37	1464	1509	13.375	61	12.515	12.531	61	TRUE	61
38	1509	1545	13.375	61	12.515	12.590	54.5	TRUE	61
39	1545	1589	13.375	61	12.515	12.524	61	TRUE	61
40	1589	1631	13.375	61	12.515	12.561	61	TRUE	61
41	1631	1674	13.375	61	12.515	12.526	61	TRUE	61
42	1674	1719	13.375	61	12.515	12.528	61	TRUE	61
43	1719	1765	13.375	61	12.515	12.574	54.5	TRUE	61
44	1765	1810	13.375	61	12.515	12.582	54.5	TRUE	61
45	1810	1855	13.375	61	12.515	12.529	61	TRUE	61
46	1855	1896	13.375	61	12.515	12.534	61	TRUE	61
47	1896	1939	13.375	61	12.515	12.533	61	TRUE	61
48	1939	1981	13.375	61	12.515	12.530	61	TRUE	61
49	1981	2024	13.375	61	12.515	12.583	54.5	TRUE	61
50	2024	2065	13.375	61	12.515	12.577	54.5	TRUE	61
51	2065	2106	13.375	61	12.515	12.587	54.5	TRUE	61
52	2106	2149	13.375	61	12.515	12.585	54.5	TRUE	61
53	2149	2185	13.375	61	12.515	12.593	54.5	TRUE	61
54	2185	2229	13.375	61	12.515	12.525	61	TRUE	61
55	2229	2274	13.375	61	12.515	12.542	61	TRUE	61
56	2274	2318	13.375	61	12.515	12.585	54.5	TRUE	61
57	2318	2360	13.375	61	12.515	12.576	54.5	TRUE	61
58	2360	2403	13.375	61	12.515	12.575	54.5	TRUE	61

Table A-4 BM-15A detailed section information taken on June 28, 2017

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	31	13.375	61	12.515	12.589	54.5	TRUE	61
2	31	68	13.375	61	12.515	12.482	61	TRUE	61
3	68	109	13.375	61	12.515	12.523	61	TRUE	61
4	109	147	13.375	61	12.515	12.540	61	TRUE	61
5	147	185	13.375	61	12.515	12.620	54.5	TRUE	61
6	185	227	13.375	61	12.515	12.563	61	TRUE	61
7	227	268	13.375	61	12.515	12.535	61	TRUE	61
8	268	310	13.375	61	12.515	12.573	54.5	TRUE	61
9	310	349	13.375	61	12.515	12.540	61	TRUE	61
10	349	390	13.375	61	12.515	12.548	61	TRUE	61
11	390	427	13.375	61	12.515	12.548	61	TRUE	61
12	427	467	13.375	61	12.515	12.556	61	TRUE	61
13	467	509	13.375	61	12.515	12.588	54.5	TRUE	61
14	509	552	13.375	61	12.515	12.564	61	TRUE	61
15	552	594	13.375	61	12.515	12.567	54.5	TRUE	61
16	594	638	13.375	61	12.515	12.582	54.5	TRUE	61
17	638	680	13.375	61	12.515	12.551	61	TRUE	61
18	680	721	13.375	61	12.515	12.550	61	TRUE	61
19	721	764	13.375	61	12.515	12.567	54.5	TRUE	61
20	764	806	13.375	61	12.515	12.552	61	TRUE	61
21	806	843	13.375	61	12.515	12.562	61	TRUE	61
22	843	883	13.375	61	12.515	12.557	61	TRUE	61
23	883	928	13.375	61	12.515	12.567	54.5	TRUE	61
24	928	970	13.375	61	12.515	12.592	54.5	TRUE	61
25	970	1003	13.375	61	12.515	12.578	54.5	TRUE	61
26	1003	1044	13.375	61	12.515	12.537	61	TRUE	61
27	1044	1079	13.375	61	12.515	12.596	54.5	TRUE	61
28	1079	1123	13.375	61	12.515	12.536	61	TRUE	61
29	1123	1168	13.375	61	12.515	12.530	61	TRUE	61
30	1168	1212	13.375	61	12.515	12.535	61	TRUE	61
31	1212	1256	13.375	61	12.515	12.545	61	TRUE	61
32	1256	1300	13.375	61	12.515	12.534	61	TRUE	61
33	1300	1342	13.375	61	12.515	12.564	61	TRUE	61
34	1342	1381	13.375	61	12.515	12.574	54.5	TRUE	61
35	1381	1426	13.375	61	12.515	12.533	61	TRUE	61
36	1426	1471	13.375	61	12.515	12.538	61	TRUE	61
37	1471	1515	13.375	61	12.515	12.541	61	TRUE	61
38	1515	1551	13.375	61	12.515	12.594	54.5	TRUE	61
39	1551	1595	13.375	61	12.515	12.531	61	TRUE	61
40	1595	1637	13.375	61	12.515	12.572	54.5	TRUE	61
41	1637	1680	13.375	61	12.515	12.535	61	TRUE	61
42	1680	1725	13.375	61	12.515	12.534	61	TRUE	61
43	1725	1770	13.375	61	12.515	12.581	54.5	TRUE	61
44	1770	1816	13.375	61	12.515	12.590	54.5	TRUE	61
45	1816	1860	13.375	61	12.515	12.535	61	TRUE	61
46	1860	1901	13.375	61	12.515	12.542	61	TRUE	61
47	1901	1943	13.375	61	12.515	12.539	61	TRUE	61
48	1943	1985	13.375	61	12.515	12.536	61	TRUE	61
49	1985	2028	13.375	61	12.515	12.589	54.5	TRUE	61
50	2028	2068	13.375	61	12.515	12.584	54.5	TRUE	61
51	2068	2110	13.375	61	12.515	12.593	54.5	TRUE	61
52	2110	2153	13.375	61	12.515	12.596	54.5	TRUE	61
53	2153	2189	13.375	61	12.515	12.598	54.5	TRUE	61
54	2189	2232	13.375	61	12.515	12.532	61	TRUE	61
55	2232	2277	13.375	61	12.515	12.547	61	TRUE	61
56	2277	2321	13.375	61	12.515	12.591	54.5	TRUE	61
57	2321	2362	13.375	61	12.515	12.584	54.5	TRUE	61
58	2362	2405	13.375	61	12.515	12.582	54.5	TRUE	61

A.3. Bayou Choctaw 17

Table A-5 BC-17 detailed section information taken on August 4, 2010

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	29	13.375	40.5	10.050	9.911	45.5	FALSE	45.5
2	29	67	13.375	40.5	10.050	9.916	45.5	FALSE	45.5
3	67	105	13.375	40.5	10.050	9.927	45.5	FALSE	45.5
4	105	144	13.375	40.5	10.050	9.948	45.5	FALSE	45.5
5	144	183	13.375	40.5	10.050	9.913	45.5	FALSE	45.5
6	183	219	13.375	40.5	10.050	9.904	45.5	FALSE	45.5
7	219	258	13.375	40.5	10.050	9.901	45.5	FALSE	45.5
8	258	297	13.375	40.5	10.050	9.905	45.5	FALSE	45.5
9	297	335	13.375	40.5	10.050	9.918	45.5	FALSE	45.5
10	335	374	13.375	40.5	10.050	9.914	45.5	FALSE	45.5
11	374	413	13.375	40.5	10.050	9.907	45.5	FALSE	45.5
12	413	452	13.375	40.5	10.050	9.948	45.5	FALSE	45.5
13	452	490	13.375	40.5	10.050	9.900	51	FALSE	51
14	490	529	13.375	40.5	10.050	9.906	45.5	FALSE	45.5
15	529	568	13.375	40.5	10.050	9.917	45.5	FALSE	45.5
16	568	606	13.375	40.5	10.050	9.915	45.5	FALSE	45.5
17	606	645	13.375	40.5	10.050	9.919	45.5	FALSE	45.5
18	645	684	13.375	40.5	10.050	9.933	45.5	FALSE	45.5
19	684	723	13.375	40.5	10.050	9.909	45.5	FALSE	45.5
20	723	761	13.375	40.5	10.050	9.909	45.5	FALSE	45.5
21	761	800	13.375	40.5	10.050	9.907	45.5	FALSE	45.5
22	800	837	13.375	40.5	10.050	9.931	45.5	FALSE	45.5
23	837	876	13.375	40.5	10.050	9.900	51	FALSE	51
24	876	915	13.375	40.5	10.050	9.925	45.5	FALSE	45.5
25	915	953	13.375	40.5	10.050	9.906	45.5	FALSE	45.5
26	953	992	13.375	40.5	10.050	9.906	45.5	FALSE	45.5
27	992	1031	13.375	40.5	10.050	9.901	45.5	FALSE	45.5
28	1031	1070	13.375	40.5	10.050	9.929	45.5	FALSE	45.5
29	1070	1109	13.375	40.5	10.050	9.930	45.5	FALSE	45.5
30	1109	1147	13.375	40.5	10.050	9.926	45.5	FALSE	45.5
31	1147	1186	13.375	40.5	10.050	9.916	45.5	FALSE	45.5
32	1186	1225	13.375	40.5	10.050	9.929	45.5	FALSE	45.5
33	1225	1263	13.375	40.5	10.050	9.903	45.5	FALSE	45.5
34	1263	1302	13.375	40.5	10.050	9.910	45.5	FALSE	45.5
35	1302	1341	13.375	40.5	10.050	9.906	45.5	FALSE	45.5
36	1341	1379	13.375	40.5	10.050	9.929	45.5	FALSE	45.5
37	1379	1418	13.375	40.5	10.050	9.913	45.5	FALSE	45.5
38	1418	1457	13.375	40.5	10.050	9.907	45.5	FALSE	45.5
39	1457	1495	13.375	40.5	10.050	9.905	45.5	FALSE	45.5
40	1495	1534	13.375	40.5	10.050	9.910	45.5	FALSE	45.5
41	1534	1573	13.375	40.5	10.050	9.914	45.5	FALSE	45.5
42	1573	1612	13.375	40.5	10.050	9.929	45.5	FALSE	45.5
43	1612	1651	13.375	40.5	10.050	9.948	45.5	FALSE	45.5
44	1651	1689	13.375	40.5	10.050	9.910	45.5	FALSE	45.5
45	1689	1728	13.375	40.5	10.050	9.936	45.5	FALSE	45.5
46	1728	1767	13.375	40.5	10.050	9.908	45.5	FALSE	45.5
47	1767	1805	13.375	40.5	10.050	9.909	45.5	FALSE	45.5
48	1805	1844	13.375	40.5	10.050	9.934	45.5	FALSE	45.5
49	1844	1883	13.375	40.5	10.050	9.920	45.5	FALSE	45.5
50	1883	1922	13.375	40.5	10.050	9.910	45.5	FALSE	45.5
51	1922	1961	13.375	40.5	10.050	9.910	45.5	FALSE	45.5
52	1961	2000	13.375	40.5	10.050	9.908	45.5	FALSE	45.5
53	2000	2038	13.375	40.5	10.050	9.924	45.5	FALSE	45.5
54	2038	2076	13.375	40.5	10.050	9.919	45.5	FALSE	45.5
55	2076	2111	13.375	40.5	10.050	9.917	45.5	FALSE	45.5
56	2111	2150	13.375	40.5	10.050	9.899	51	FALSE	51
57	2150	2188	13.375	40.5	10.050	9.917	45.5	FALSE	45.5
58	2188	2227	13.375	40.5	10.050	9.933	45.5	FALSE	45.5

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Table A-5 – *Continued from previous page*

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
59	2227	2266	13.375	40.5	10.050	9.925	45.5	FALSE	45.5
60	2266	2305	13.375	40.5	10.050	9.935	45.5	FALSE	45.5
61	2305	2344	13.375	40.5	10.050	9.902	45.5	FALSE	45.5
62	2344	2382	13.375	40.5	10.050	9.924	45.5	FALSE	45.5
63	2382	2420	13.375	40.5	10.050	9.907	45.5	FALSE	45.5
64	2420	2459	13.375	40.5	10.050	9.930	45.5	FALSE	45.5
65	2459	2496	13.375	40.5	10.050	9.908	45.5	FALSE	45.5
66	2496	2536	13.375	40.5	10.050	9.898	51	FALSE	51

A.4. Bayou Choctaw 17A

Table A-6 BC-17A detailed section information taken on June 5, 2013

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	32	13.375	68	12.415	12.466	61	TRUE	68
2	32	72	13.375	68	12.415	12.475	61	TRUE	68
3	72	108	13.375	68	12.415	12.475	61	TRUE	68
4	108	142	13.375	68	12.415	12.678	48	FALSE	48
5	142	183	13.375	68	12.415	12.676	48	FALSE	48
6	183	217	13.375	68	12.415	12.670	48	FALSE	48
7	217	257	13.375	68	12.415	12.679	48	FALSE	48
8	257	298	13.375	68	12.415	12.672	48	FALSE	48
9	298	339	13.375	68	12.415	12.670	48	FALSE	48
10	339	379	13.375	68	12.415	12.678	48	FALSE	48
11	379	415	13.375	68	12.415	12.672	48	FALSE	48
12	415	448	13.375	68	12.415	12.672	48	FALSE	48
13	448	488	13.375	68	12.415	12.663	54.5	FALSE	54.5
14	488	528	13.375	61	12.515	12.674	48	FALSE	48
15	528	567	13.375	61	12.515	12.672	48	FALSE	48
16	567	607	13.375	61	12.515	12.679	48	FALSE	48
17	607	648	13.375	61	12.515	12.684	48	FALSE	48
18	648	689	13.375	61	12.515	12.683	48	FALSE	48
19	689	730	13.375	61	12.515	12.680	48	FALSE	48
20	730	770	13.375	61	12.515	12.667	48	FALSE	48
21	770	810	13.375	61	12.515	12.685	48	FALSE	48
22	810	846	13.375	61	12.515	12.662	54.5	FALSE	54.5
23	846	883	13.375	61	12.515	12.685	48	FALSE	48
24	883	924	13.375	61	12.515	12.685	48	FALSE	48
25	924	963	13.375	61	12.515	12.697	48	FALSE	48
26	963	1002	13.375	61	12.515	12.696	48	FALSE	48
27	1002	1042	13.375	61	12.515	12.681	48	FALSE	48
28	1042	1083	13.375	61	12.515	12.680	48	FALSE	48
29	1083	1116	13.375	61	12.515	12.573	54.5	TRUE	61
30	1116	1152	13.375	61	12.515	12.579	54.5	TRUE	61
31	1152	1189	13.375	61	12.515	12.581	54.5	TRUE	61
32	1189	1225	13.375	61	12.515	12.577	54.5	TRUE	61
33	1225	1261	13.375	61	12.515	12.582	54.5	TRUE	61
34	1261	1296	13.375	61	12.515	12.572	54.5	TRUE	61
35	1296	1337	13.375	61	12.515	12.687	48	FALSE	48
36	1337	1377	13.375	61	12.515	12.679	48	FALSE	48
37	1377	1412	13.375	54.5	12.615	12.598	54.5	TRUE	54.5
38	1412	1448	13.375	54.5	12.615	12.549	61	TRUE	54.5
39	1448	1489	13.375	54.5	12.615	12.620	54.5	TRUE	54.5
40	1489	1528	13.375	54.5	12.615	12.611	54.5	TRUE	54.5
41	1528	1559	13.375	54.5	12.615	12.605	54.5	TRUE	54.5
42	1559	1593	13.375	54.5	12.615	12.658	54.5	TRUE	54.5
43	1593	1629	13.375	54.5	12.615	12.588	54.5	TRUE	54.5
44	1629	1665	13.375	54.5	12.615	12.589	54.5	TRUE	54.5
45	1665	1699	13.375	54.5	12.615	12.626	54.5	TRUE	54.5
46	1699	1733	13.375	54.5	12.615	12.580	54.5	TRUE	54.5
47	1733	1768	13.375	54.5	12.615	12.557	61	TRUE	54.5
48	1768	1805	13.375	54.5	12.615	12.597	54.5	TRUE	54.5
49	1805	1844	13.375	54.5	12.615	12.629	54.5	TRUE	54.5
50	1844	1885	13.375	54.5	12.615	12.664	54.5	TRUE	54.5
51	1885	1921	13.375	54.5	12.615	12.603	54.5	TRUE	54.5
52	1921	1957	13.375	54.5	12.615	12.580	54.5	TRUE	54.5
53	1957	1998	13.375	54.5	12.615	12.570	54.5	TRUE	54.5
54	1998	2037	13.375	54.5	12.615	12.415	68	FALSE	68
55	2037	2078	13.375	54.5	12.615	12.454	68	FALSE	68
56	2078	2118	13.375	54.5	12.615	12.430	68	FALSE	68
57	2118	2158	13.375	54.5	12.615	12.481	61	FALSE	61
58	2158	2196	13.375	54.5	12.615	12.477	61	FALSE	61

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Table A-6 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
59	2196	2236	13.375	54.5	12.615	12.452	68	FALSE	68
60	2236	2276	13.375	54.5	12.615	12.453	68	FALSE	68
61	2276	2316	13.375	54.5	12.615	12.449	68	FALSE	68
62	2316	2355	13.375	54.5	12.615	12.455	68	FALSE	68
63	2355	2397	13.375	68	12.415	12.479	61	TRUE	68
64	2397	2438	13.375	68	12.415	12.443	68	TRUE	68
65	2438	2480	13.375	68	12.415	12.494	61	TRUE	68

Table A-7 BC-17A detailed section information taken on 20170719

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	34	13.375	68	12.415	12.470	61	TRUE	68
2	34	74	13.375	68	12.415	12.479	61	TRUE	68
3	74	109	13.375	68	12.415	12.477	61	TRUE	68
4	109	143	13.375	68	12.415	12.681	48	FALSE	48
5	143	184	13.375	68	12.415	12.680	48	FALSE	48
6	184	219	13.375	68	12.415	12.673	48	FALSE	48
7	219	258	13.375	68	12.415	12.680	48	FALSE	48
8	258	299	13.375	68	12.415	12.673	48	FALSE	48
9	299	340	13.375	68	12.415	12.672	48	FALSE	48
10	340	380	13.375	68	12.415	12.679	48	FALSE	48
11	380	416	13.375	68	12.415	12.674	48	FALSE	48
12	416	449	13.375	68	12.415	12.672	48	FALSE	48
13	449	489	13.375	68	12.415	12.664	54.5	FALSE	54.5
14	489	529	13.375	61	12.515	12.673	48	FALSE	48
15	529	568	13.375	61	12.515	12.672	48	FALSE	48
16	568	609	13.375	61	12.515	12.678	48	FALSE	48
17	609	650	13.375	61	12.515	12.685	48	FALSE	48
18	650	691	13.375	61	12.515	12.682	48	FALSE	48
19	691	731	13.375	61	12.515	12.682	48	FALSE	48
20	731	772	13.375	61	12.515	12.668	48	FALSE	48
21	772	811	13.375	61	12.515	12.685	48	FALSE	48
22	811	847	13.375	61	12.515	12.663	54.5	FALSE	54.5
23	847	884	13.375	61	12.515	12.686	48	FALSE	48
24	884	925	13.375	61	12.515	12.690	48	FALSE	48
25	925	964	13.375	61	12.515	12.700	48	FALSE	48
26	964	1002	13.375	61	12.515	12.698	48	FALSE	48
27	1002	1043	13.375	61	12.515	12.682	48	FALSE	48
28	1043	1084	13.375	61	12.515	12.683	48	FALSE	48
29	1084	1117	13.375	61	12.515	12.577	54.5	TRUE	61
30	1117	1152	13.375	61	12.515	12.586	54.5	TRUE	61
31	1152	1187	13.375	61	12.515	12.585	54.5	TRUE	61
32	1187	1225	13.375	61	12.515	12.578	54.5	TRUE	61
33	1225	1261	13.375	61	12.515	12.591	54.5	TRUE	61
34	1261	1296	13.375	61	12.515	12.577	54.5	TRUE	61
35	1296	1336	13.375	61	12.515	12.691	48	FALSE	48
36	1336	1377	13.375	61	12.515	12.685	48	FALSE	48
37	1377	1412	13.375	54.5	12.615	12.601	54.5	TRUE	54.5
38	1412	1447	13.375	54.5	12.615	12.554	61	TRUE	54.5
39	1447	1488	13.375	54.5	12.615	12.624	54.5	TRUE	54.5
40	1488	1523	13.375	54.5	12.615	12.618	54.5	TRUE	54.5
41	1523	1558	13.375	54.5	12.615	12.613	54.5	TRUE	54.5
42	1558	1592	13.375	54.5	12.615	12.665	48	TRUE	54.5
43	1592	1628	13.375	54.5	12.615	12.595	54.5	TRUE	54.5
44	1628	1664	13.375	54.5	12.615	12.596	54.5	TRUE	54.5
45	1664	1698	13.375	54.5	12.615	12.631	54.5	TRUE	54.5

Continued on next page

Table A-7 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
46	1698	1732	13.375	54.5	12.615	12.586	54.5	TRUE	54.5
47	1732	1767	13.375	54.5	12.615	12.563	61	TRUE	54.5
48	1767	1805	13.375	54.5	12.615	12.604	54.5	TRUE	54.5
49	1805	1843	13.375	54.5	12.615	12.636	54.5	TRUE	54.5
50	1843	1884	13.375	54.5	12.615	12.671	48	TRUE	54.5
51	1884	1920	13.375	54.5	12.615	12.611	54.5	TRUE	54.5
52	1920	1956	13.375	54.5	12.615	12.587	54.5	TRUE	54.5
53	1956	1997	13.375	54.5	12.615	12.576	54.5	TRUE	54.5
54	1997	2036	13.375	54.5	12.615	12.426	68	FALSE	68
55	2036	2076	13.375	54.5	12.615	12.462	68	FALSE	68
56	2076	2117	13.375	54.5	12.615	12.435	68	FALSE	68
57	2117	2156	13.375	54.5	12.615	12.489	61	FALSE	61
58	2156	2195	13.375	54.5	12.615	12.485	61	FALSE	61
59	2195	2234	13.375	54.5	12.615	12.459	68	FALSE	68
60	2234	2275	13.375	54.5	12.615	12.457	68	FALSE	68
61	2275	2315	13.375	54.5	12.615	12.461	68	FALSE	68
62	2315	2354	13.375	54.5	12.615	12.458	68	FALSE	68
63	2354	2395	13.375	68	12.415	12.486	61	TRUE	68
64	2395	2436	13.375	68	12.415	12.455	68	TRUE	68
65	2436	2480	13.375	68	12.415	12.501	61	TRUE	68

A.5. Bayou Choctaw 18

Table A-8 BC-018 detailed section information taken on September 10, 2010

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	51	13.375	61	12.515	12.686	48	FALSE	48
2	51	90	13.375	61	12.515	12.689	48	FALSE	48
3	90	131	13.375	61	12.515	12.698	48	FALSE	48
4	131	172	13.375	61	12.515	12.685	48	FALSE	48
5	172	214	13.375	61	12.515	12.718	48	FALSE	48
6	214	250	13.375	61	12.515	12.655	54.5	FALSE	54.5
7	250	292	13.375	61	12.515	12.645	54.5	FALSE	54.5
8	292	335	13.375	61	12.515	12.650	54.5	FALSE	54.5
9	335	377	13.375	61	12.515	12.664	54.5	FALSE	54.5
10	377	418	13.375	61	12.515	12.663	54.5	FALSE	54.5
11	418	461	13.375	61	12.515	12.665	54.5	FALSE	54.5
12	461	502	13.375	61	12.515	12.671	48	FALSE	48
13	502	545	13.375	61	12.515	12.708	48	FALSE	48
14	545	587	13.375	61	12.515	12.666	48	FALSE	48
15	587	632	13.375	61	12.515	12.688	48	FALSE	48
16	632	672	13.375	61	12.515	12.676	48	FALSE	48
17	672	713	13.375	61	12.515	12.662	54.5	FALSE	54.5
18	713	752	13.375	61	12.515	12.684	48	FALSE	48
19	752	795	13.375	61	12.515	12.688	48	FALSE	48
20	795	840	13.375	61	12.515	12.694	48	FALSE	48
21	840	882	13.375	61	12.515	12.643	54.5	FALSE	54.5
22	882	921	13.375	61	12.515	12.680	48	FALSE	48
23	921	964	13.375	61	12.515	12.649	54.5	FALSE	54.5
24	964	1005	13.375	61	12.515	12.666	48	FALSE	48
25	1005	1041	13.375	61	12.515	12.663	54.5	FALSE	54.5
26	1041	1082	13.375	61	12.515	12.671	48	FALSE	48
27	1082	1122	13.375	61	12.515	12.703	48	FALSE	48
28	1122	1164	13.375	61	12.515	12.685	48	FALSE	48
29	1164	1205	13.375	61	12.515	12.686	48	FALSE	48
30	1205	1244	13.375	61	12.515	12.679	48	FALSE	48
31	1244	1283	13.375	61	12.515	12.645	54.5	FALSE	54.5
32	1283	1326	13.375	61	12.515	12.685	48	FALSE	48
33	1326	1368	13.375	61	12.515	12.675	48	FALSE	48
34	1368	1409	13.375	61	12.515	12.674	48	FALSE	48
35	1409	1448	13.375	61	12.515	12.663	54.5	FALSE	54.5
36	1448	1487	13.375	61	12.515	12.685	48	FALSE	48
37	1487	1523	13.375	61	12.515	12.590	54.5	TRUE	61
38	1523	1567	13.375	61	12.515	12.706	48	FALSE	48
39	1567	1610	13.375	61	12.515	12.660	54.5	FALSE	54.5
40	1610	1653	13.375	61	12.515	12.707	48	FALSE	48
41	1653	1676	10.75	51	9.850	12.673	48	FALSE	48
42	1676	1722	10.75	51	9.850	9.948	45.5	TRUE	51
43	1722	1763	10.75	51	9.850	10.018	40.5	FALSE	40.5
44	1763	1802	10.75	51	9.850	10.041	40.5	FALSE	40.5
45	1802	1838	10.75	51	9.850	10.004	40.5	FALSE	40.5
46	1838	1877	10.75	51	9.850	9.923	45.5	TRUE	51
47	1877	1918	10.75	51	9.850	9.905	45.5	TRUE	51
48	1918	1956	10.75	51	9.850	9.995	45.5	FALSE	45.5
49	1956	1998	10.75	51	9.850	9.902	45.5	TRUE	51
50	1998	2037	10.75	51	9.850	9.908	45.5	TRUE	51
51	2037	2076	10.75	51	9.850	9.909	45.5	TRUE	51
52	2076	2115	10.75	51	9.850	9.962	45.5	TRUE	51
53	2115	2153	10.75	51	9.850	9.893	51	TRUE	51

A.6. Bayou Choctaw 18A

Table A-9 BC-018A detailed section information taken on August 5, 2013

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	39	13.375	61	12.515	12.535	61	TRUE	61
2	39	77	13.375	61	12.515	12.517	61	TRUE	61
3	77	122	13.375	61	12.515	12.524	61	TRUE	61
4	122	167	13.375	61	12.515	12.531	61	TRUE	61
5	167	212	13.375	61	12.515	12.575	54.5	TRUE	61
6	212	257	13.375	61	12.515	12.523	61	TRUE	61
7	257	301	13.375	61	12.515	12.555	61	TRUE	61
8	301	344	13.375	61	12.515	12.530	61	TRUE	61
9	344	389	13.375	61	12.515	12.528	61	TRUE	61
10	389	433	13.375	61	12.515	12.534	61	TRUE	61
11	433	477	13.375	61	12.515	12.525	61	TRUE	61
12	477	521	13.375	61	12.515	12.528	61	TRUE	61
13	521	566	13.375	61	12.515	12.524	61	TRUE	61
14	566	606	13.375	61	12.515	12.547	61	TRUE	61
15	606	650	13.375	61	12.515	12.531	61	TRUE	61
16	650	691	13.375	61	12.515	12.537	61	TRUE	61
17	691	731	13.375	61	12.515	12.546	61	TRUE	61
18	731	775	13.375	61	12.515	12.561	61	TRUE	61
19	775	819	13.375	61	12.515	12.559	61	TRUE	61
20	819	864	13.375	61	12.515	12.591	54.5	TRUE	61
21	864	907	13.375	61	12.515	12.547	61	TRUE	61
22	907	952	13.375	61	12.515	12.558	61	TRUE	61
23	952	995	13.375	61	12.515	12.560	61	TRUE	61
24	995	1034	13.375	61	12.515	12.560	61	TRUE	61
25	1034	1080	13.375	61	12.515	12.563	61	TRUE	61
26	1080	1124	13.375	61	12.515	12.583	54.5	TRUE	61
27	1124	1166	13.375	61	12.515	12.571	54.5	TRUE	61
28	1166	1209	13.375	61	12.515	12.520	61	TRUE	61
29	1209	1253	13.375	61	12.515	12.540	61	TRUE	61
30	1253	1298	13.375	61	12.515	12.539	61	TRUE	61
31	1298	1336	13.375	61	12.515	12.560	61	TRUE	61
32	1336	1373	13.375	61	12.515	12.560	61	TRUE	61
33	1373	1413	13.375	61	12.515	12.541	61	TRUE	61
34	1413	1454	13.375	61	12.515	12.550	61	TRUE	61
35	1454	1496	13.375	61	12.515	12.554	61	TRUE	61
36	1496	1530	13.375	61	12.515	12.554	61	TRUE	61
37	1530	1572	13.375	61	12.515	12.541	61	TRUE	61
38	1572	1615	13.375	61	12.515	12.560	61	TRUE	61
39	1615	1658	13.375	61	12.515	12.591	54.5	TRUE	61
40	1658	1699	13.375	61	12.515	12.571	54.5	TRUE	61
41	1699	1741	13.375	61	12.515	12.578	54.5	TRUE	61
42	1741	1787	13.375	61	12.515	12.572	54.5	TRUE	61

A.7. Bayou Choctaw 19

Table A-10 BC-019 detailed section information taken on March 13, 2013

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	33	16	75	15.125	15.136	75	TRUE	75
2	33	73	16	75	15.125	15.129	75	TRUE	75
3	73	112	16	75	15.125	15.123	75	TRUE	75
4	112	151	16	75	15.125	15.133	75	TRUE	75
5	151	192	16	75	15.125	15.145	75	TRUE	75
6	192	226	16	75	15.125	15.148	75	TRUE	75
7	226	264	16	75	15.125	15.146	75	TRUE	75
8	264	306	16	75	15.125	15.138	75	TRUE	75
9	306	343	16	75	15.125	15.152	75	TRUE	75
10	343	378	16	75	15.125	15.195	65	TRUE	75
11	378	418	16	75	15.125	15.168	75	TRUE	75
12	418	458	16	75	15.125	15.180	75	TRUE	75
13	458	500	16	75	15.125	15.165	75	TRUE	75
14	500	539	16	75	15.125	15.176	75	TRUE	75
15	539	578	16	75	15.125	15.184	75	TRUE	75
16	578	612	16	75	15.125	15.166	75	TRUE	75
17	612	652	16	75	15.125	15.168	75	TRUE	75
18	652	694	16	75	15.125	15.185	75	TRUE	75
19	694	733	16	75	15.125	15.155	75	TRUE	75
20	733	772	16	75	15.125	15.186	75	TRUE	75
21	772	812	16	75	15.125	15.138	75	TRUE	75
22	812	853	16	75	15.125	15.189	65	TRUE	75
23	853	893	16	75	15.125	15.161	75	TRUE	75
24	893	934	16	75	15.125	15.176	75	TRUE	75
25	934	975	16	75	15.125	15.154	75	TRUE	75
26	975	1017	16	75	15.125	15.178	75	TRUE	75
27	1017	1059	16	75	15.125	15.203	65	TRUE	75
28	1059	1101	16	75	15.125	15.180	75	TRUE	75
29	1101	1141	16	75	15.125	15.208	65	TRUE	75
30	1141	1184	16	75	15.125	15.220	65	TRUE	75
31	1184	1225	16	75	15.125	15.158	75	TRUE	75
32	1225	1266	16	75	15.125	15.181	75	TRUE	75
33	1266	1306	16	75	15.125	15.177	75	TRUE	75
34	1306	1347	16	75	15.125	15.191	65	TRUE	75
35	1347	1388	16	75	15.125	15.181	75	TRUE	75
36	1388	1428	16	75	15.125	15.154	75	TRUE	75
37	1428	1470	16	75	15.125	15.163	75	TRUE	75
38	1470	1510	16	75	15.125	15.138	75	TRUE	75
39	1510	1553	16	75	15.125	15.181	75	TRUE	75
40	1553	1596	16	75	15.125	15.235	65	FALSE	65
41	1596	1639	16	75	15.125	15.185	75	TRUE	75
42	1639	1677	16	75	15.125	15.045	84	TRUE	75
43	1677	1711	16	75	15.125	15.052	84	TRUE	75
44	1711	1744	16	75	15.125	15.164	75	TRUE	75
45	1744	1784	16	75	15.125	15.058	84	TRUE	75
46	1784	1825	16	75	15.125	15.081	75	TRUE	75
47	1825	1865	16	75	15.125	15.063	84	TRUE	75
48	1865	1906	16	75	15.125	15.075	75	TRUE	75
49	1906	1946	16	75	15.125	15.054	84	TRUE	75
50	1946	1985	16	75	15.125	15.068	75	TRUE	75
51	1985	2026	16	75	15.125	15.096	75	TRUE	75
52	2026	2067	16	75	15.125	15.064	84	TRUE	75
53	2067	2107	16	75	15.125	15.063	84	TRUE	75
54	2107	2148	16	75	15.125	15.065	84	TRUE	75
55	2148	2188	16	75	15.125	15.063	84	TRUE	75
56	2188	2225	16	75	15.125	15.073	75	TRUE	75
57	2225	2265	16	75	15.125	15.069	75	TRUE	75
58	2265	2295	16	75	15.125	15.232	65	TRUE	75

Table A-11 BC-019 detailed section information taken on May 18, 2017

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	35	16	75	15.125	15.142	75	TRUE	75
2	35	75	16	75	15.125	15.123	75	TRUE	75
3	75	114	16	75	15.125	15.128	75	TRUE	75
4	114	152	16	75	15.125	15.133	75	TRUE	75
5	152	193	16	75	15.125	15.139	75	TRUE	75
6	193	227	16	75	15.125	15.135	75	TRUE	75
7	227	266	16	75	15.125	15.125	75	TRUE	75
8	266	307	16	75	15.125	15.123	75	TRUE	75
9	307	344	16	75	15.125	15.132	75	TRUE	75
10	344	379	16	75	15.125	15.167	75	TRUE	75
11	379	418	16	75	15.125	15.141	75	TRUE	75
12	418	458	16	75	15.125	15.154	75	TRUE	75
13	458	500	16	75	15.125	15.136	75	TRUE	75
14	500	539	16	75	15.125	15.149	75	TRUE	75
15	539	578	16	75	15.125	15.150	75	TRUE	75
16	578	612	16	75	15.125	15.135	75	TRUE	75
17	612	652	16	75	15.125	15.135	75	TRUE	75
18	652	694	16	75	15.125	15.153	75	TRUE	75
19	694	733	16	75	15.125	15.126	75	TRUE	75
20	733	771	16	75	15.125	15.149	75	TRUE	75
21	771	812	16	75	15.125	15.107	75	TRUE	75
22	812	852	16	75	15.125	15.154	75	TRUE	75
23	852	892	16	75	15.125	15.120	75	TRUE	75
24	892	933	16	75	15.125	15.139	75	TRUE	75
25	933	974	16	75	15.125	15.112	75	TRUE	75
26	974	1016	16	75	15.125	15.136	75	TRUE	75
27	1016	1058	16	75	15.125	15.154	75	TRUE	75
28	1058	1100	16	75	15.125	15.133	75	TRUE	75
29	1100	1140	16	75	15.125	15.160	75	TRUE	75
30	1140	1182	16	75	15.125	15.174	75	TRUE	75
31	1182	1224	16	75	15.125	15.111	75	TRUE	75
32	1224	1264	16	75	15.125	15.137	75	TRUE	75
33	1264	1305	16	75	15.125	15.127	75	TRUE	75
34	1305	1345	16	75	15.125	15.141	75	TRUE	75
35	1345	1386	16	75	15.125	15.131	75	TRUE	75
36	1386	1426	16	75	15.125	15.105	75	TRUE	75
37	1426	1469	16	75	15.125	15.116	75	TRUE	75
38	1469	1509	16	75	15.125	15.092	75	TRUE	75
39	1509	1551	16	75	15.125	15.127	75	TRUE	75
40	1551	1594	16	75	15.125	15.176	75	TRUE	75
41	1594	1636	16	75	15.125	15.138	75	TRUE	75
42	1636	1675	16	75	15.125	14.992	84	FALSE	84
43	1675	1708	16	75	15.125	14.999	84	FALSE	84
44	1708	1742	16	75	15.125	15.105	75	TRUE	75
45	1742	1781	16	75	15.125	15.000	84	FALSE	84
46	1781	1822	16	75	15.125	15.030	84	TRUE	75
47	1822	1863	16	75	15.125	15.008	84	FALSE	84
48	1863	1903	16	75	15.125	15.021	84	TRUE	75
49	1903	1944	16	75	15.125	15.002	84	FALSE	84
50	1944	1982	16	75	15.125	15.014	84	FALSE	84
51	1982	2023	16	75	15.125	15.040	84	TRUE	75
52	2023	2064	16	75	15.125	15.011	84	FALSE	84
53	2064	2104	16	75	15.125	15.006	84	FALSE	84
54	2104	2144	16	75	15.125	15.014	84	FALSE	84
55	2144	2185	16	75	15.125	15.011	84	FALSE	84
56	2185	2221	16	75	15.125	15.018	84	TRUE	75
57	2221	2262	16	75	15.125	15.024	84	TRUE	75
58	2262	2305	16	75	15.125	15.194	65	TRUE	75

A.8. Bayou Choctaw 19A

Table A-12 BC-019A detailed section information taken on September 23, 2010

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	8	13.375	54.5	12.615	10.006	80.7	FALSE	80.7
2	8	46	13.375	54.5	12.615	12.603	54.5	TRUE	54.5
3	46	86	13.375	54.5	12.615	12.677	48	TRUE	54.5
4	86	128	13.375	54.5	12.615	12.668	48	TRUE	54.5
5	128	171	13.375	54.5	12.615	12.649	54.5	TRUE	54.5
6	171	213	13.375	54.5	12.615	12.657	54.5	TRUE	54.5
7	213	256	13.375	54.5	12.615	12.693	48	TRUE	54.5
8	256	297	13.375	54.5	12.615	12.642	54.5	TRUE	54.5
9	297	337	13.375	54.5	12.615	12.628	54.5	TRUE	54.5
10	337	374	13.375	54.5	12.615	12.609	54.5	TRUE	54.5
11	374	416	13.375	54.5	12.615	12.661	54.5	TRUE	54.5
12	416	455	13.375	54.5	12.615	12.617	54.5	TRUE	54.5
13	455	495	13.375	54.5	12.615	12.628	54.5	TRUE	54.5
14	495	532	13.375	54.5	12.615	12.675	48	TRUE	54.5
15	532	570	13.375	54.5	12.615	12.649	54.5	TRUE	54.5
16	570	610	13.375	54.5	12.615	12.615	54.5	TRUE	54.5
17	610	651	13.375	54.5	12.615	12.601	54.5	TRUE	54.5
18	651	689	13.375	54.5	12.615	12.628	54.5	TRUE	54.5
19	689	729	13.375	54.5	12.615	12.619	54.5	TRUE	54.5
20	729	766	13.375	54.5	12.615	12.603	54.5	TRUE	54.5
21	766	807	13.375	54.5	12.615	12.700	48	TRUE	54.5
22	807	849	13.375	54.5	12.615	12.661	54.5	TRUE	54.5
23	849	888	13.375	54.5	12.615	12.596	54.5	TRUE	54.5
24	888	926	13.375	54.5	12.615	12.621	54.5	TRUE	54.5
25	926	965	13.375	54.5	12.615	12.683	48	TRUE	54.5
26	965	1002	13.375	54.5	12.615	12.615	54.5	TRUE	54.5
27	1002	1044	13.375	54.5	12.615	12.668	48	TRUE	54.5
28	1044	1085	13.375	54.5	12.615	12.654	54.5	TRUE	54.5
29	1085	1125	13.375	54.5	12.615	12.641	54.5	TRUE	54.5
30	1125	1163	13.375	54.5	12.615	12.637	54.5	TRUE	54.5
31	1163	1197	13.375	54.5	12.615	12.638	54.5	TRUE	54.5
32	1197	1235	13.375	54.5	12.615	12.647	54.5	TRUE	54.5
33	1235	1276	13.375	54.5	12.615	12.648	54.5	TRUE	54.5
34	1276	1317	13.375	54.5	12.615	12.638	54.5	TRUE	54.5
35	1317	1357	13.375	54.5	12.615	12.652	54.5	TRUE	54.5
36	1357	1400	13.375	54.5	12.615	12.671	48	TRUE	54.5
37	1400	1435	13.375	54.5	12.615	12.673	48	TRUE	54.5
38	1435	1474	13.375	54.5	12.615	12.688	48	TRUE	54.5
39	1474	1514	13.375	54.5	12.615	12.668	48	TRUE	54.5
40	1514	1553	13.375	54.5	12.615	12.653	54.5	TRUE	54.5
41	1553	1586	13.375	54.5	12.615	12.655	54.5	TRUE	54.5
42	1586	1623	13.375	54.5	12.615	12.664	54.5	TRUE	54.5
43	1623	1664	13.375	54.5	12.615	12.692	48	TRUE	54.5
44	1664	1704	13.375	54.5	12.615	12.670	48	TRUE	54.5
45	1704	1747	13.375	54.5	12.615	12.667	48	TRUE	54.5
46	1747	1787	13.375	54.5	12.615	12.671	48	TRUE	54.5
47	1787	1823	13.375	54.5	12.615	12.612	54.5	TRUE	54.5
48	1823	1861	13.375	54.5	12.615	12.643	54.5	TRUE	54.5
49	1861	1901	13.375	54.5	12.615	12.671	48	TRUE	54.5
50	1901	1942	13.375	54.5	12.615	12.644	54.5	TRUE	54.5
51	1942	1983	13.375	54.5	12.615	12.611	54.5	TRUE	54.5
52	1983	2022	13.375	54.5	12.615	12.641	54.5	TRUE	54.5
53	2022	2056	13.375	54.5	12.615	12.495	61	FALSE	61
54	2056	2093	13.375	54.5	12.615	12.679	48	TRUE	54.5
55	2093	2132	13.375	54.5	12.615	12.636	54.5	TRUE	54.5
56	2132	2172	13.375	54.5	12.615	12.652	54.5	TRUE	54.5
57	2172	2207	13.375	54.5	12.615	12.635	54.5	TRUE	54.5

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Table A-12 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
58	2207	2248	13.375	54.5	12.615	12.637	54.5	TRUE	54.5
59	2248	2287	13.375	54.5	12.615	12.647	54.5	TRUE	54.5
60	2287	2327	13.375	54.5	12.615	12.667	48	TRUE	54.5
61	2327	2369	13.375	54.5	12.615	12.632	54.5	TRUE	54.5
62	2369	2404	13.375	54.5	12.615	12.587	54.5	TRUE	54.5
63	2404	2439	13.375	54.5	12.615	12.657	54.5	TRUE	54.5
64	2439	2475	13.375	54.5	12.615	12.627	54.5	TRUE	54.5
65	2475	2512	13.375	54.5	12.615	12.622	54.5	TRUE	54.5
66	2512	2554	13.375	54.5	12.615	12.447	68	FALSE	68
67	2554	2589	13.375	54.5	12.615	12.434	68	FALSE	68

A.9. Bayou Choctaw 20A

Table A-13 BC-020A detailed section information taken on September 22, 2010

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	12	13.375	61	12.515	12.533	61	TRUE	61
2	12	52	13.375	61	12.515	12.530	61	TRUE	61
3	52	91	13.375	61	12.515	12.511	61	TRUE	61
4	91	130	13.375	61	12.515	12.598	54.5	TRUE	61
5	130	167	13.375	61	12.515	12.537	61	TRUE	61
6	167	209	13.375	61	12.515	12.537	61	TRUE	61
7	209	247	13.375	61	12.515	12.549	61	TRUE	61
8	247	282	13.375	61	12.515	12.561	61	TRUE	61
9	282	324	13.375	61	12.515	12.555	61	TRUE	61
10	324	360	13.375	61	12.515	12.544	61	TRUE	61
11	360	398	13.375	61	12.515	12.549	61	TRUE	61
12	398	438	13.375	61	12.515	12.555	61	TRUE	61
13	438	480	13.375	61	12.515	12.550	61	TRUE	61
14	480	523	13.375	61	12.515	12.553	61	TRUE	61
15	523	566	13.375	61	12.515	12.581	54.5	TRUE	61
16	566	605	13.375	61	12.515	12.512	61	TRUE	61
17	605	646	13.375	61	12.515	12.528	61	TRUE	61
18	646	687	13.375	61	12.515	12.543	61	TRUE	61
19	687	727	13.375	61	12.515	12.535	61	TRUE	61
20	727	768	13.375	61	12.515	12.593	54.5	TRUE	61
21	768	810	13.375	61	12.515	12.553	61	TRUE	61
22	810	851	13.375	61	12.515	12.555	61	TRUE	61
23	851	891	13.375	61	12.515	12.582	54.5	TRUE	61
24	891	932	13.375	61	12.515	12.577	54.5	TRUE	61
25	932	974	13.375	61	12.515	12.578	54.5	TRUE	61
26	974	1010	13.375	61	12.515	12.571	54.5	TRUE	61
27	1010	1050	13.375	61	12.515	12.506	61	TRUE	61
28	1050	1092	13.375	61	12.515	12.646	54.5	FALSE	54.5
29	1092	1138	13.375	61	12.515	12.618	54.5	TRUE	61
30	1138	1183	13.375	61	12.515	12.563	61	TRUE	61
31	1183	1222	13.375	61	12.515	12.544	61	TRUE	61
32	1222	1264	13.375	61	12.515	12.535	61	TRUE	61
33	1264	1300	13.375	61	12.515	12.557	61	TRUE	61
34	1300	1341	13.375	61	12.515	12.549	61	TRUE	61
35	1341	1382	13.375	61	12.515	12.553	61	TRUE	61
36	1382	1418	13.375	61	12.515	12.551	61	TRUE	61
37	1418	1457	13.375	61	12.515	12.558	61	TRUE	61
38	1457	1500	13.375	61	12.515	12.570	54.5	TRUE	61
39	1500	1537	13.375	61	12.515	12.532	61	TRUE	61
40	1537	1578	13.375	61	12.515	12.566	54.5	TRUE	61
41	1578	1614	13.375	61	12.515	12.557	61	TRUE	61
42	1614	1655	13.375	61	12.515	12.562	61	TRUE	61
43	1655	1699	13.375	61	12.515	12.539	61	TRUE	61
44	1699	1739	13.375	61	12.515	12.557	61	TRUE	61
45	1739	1783	13.375	61	12.515	12.582	54.5	TRUE	61
46	1783	1825	13.375	61	12.515	12.523	61	TRUE	61
47	1825	1868	13.375	61	12.515	12.554	61	TRUE	61
48	1868	1911	13.375	61	12.515	12.535	61	TRUE	61
49	1911	1955	13.375	61	12.515	12.533	61	TRUE	61
50	1955	1996	13.375	61	12.515	12.524	61	TRUE	61
51	1996	2037	13.375	61	12.515	12.519	61	TRUE	61
52	2037	2073	13.375	61	12.515	12.533	61	TRUE	61
53	2073	2107	13.375	61	12.515	12.536	61	TRUE	61
54	2107	2150	13.375	61	12.515	12.554	61	TRUE	61
55	2150	2191	13.375	61	12.515	12.555	61	TRUE	61
56	2191	2225	13.375	61	12.515	12.522	61	TRUE	61
57	2225	2264	13.375	61	12.515	12.521	61	TRUE	61

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Table A-13 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
58	2264	2305	13.375	61	12.515	12.532	61	TRUE	61
59	2305	2340	13.375	61	12.515	12.587	54.5	TRUE	61
60	2340	2383	13.375	61	12.515	12.410	68	TRUE	61
61	2383	2411	13.375	61	12.515	12.313	72	FALSE	72

A.10. Bayou Choctaw 101A

Table A-14 BC-101A detailed section information taken on April 24, 2013

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	37	13.375	54.5	12.615	12.666	48	TRUE	54.5
2	37	77	13.375	54.5	12.615	12.723	48	FALSE	48
3	77	117	13.375	54.5	12.615	12.704	48	TRUE	54.5
4	117	157	13.375	54.5	12.615	12.669	48	TRUE	54.5
5	157	197	13.375	54.5	12.615	12.672	48	TRUE	54.5
6	197	237	13.375	54.5	12.615	12.673	48	TRUE	54.5
7	237	277	13.375	54.5	12.615	12.674	48	TRUE	54.5
8	277	318	13.375	54.5	12.615	12.675	48	TRUE	54.5
9	318	358	13.375	54.5	12.615	12.708	48	TRUE	54.5
10	358	398	13.375	54.5	12.615	12.675	48	TRUE	54.5
11	398	437	13.375	54.5	12.615	12.668	48	TRUE	54.5
12	437	478	13.375	54.5	12.615	12.676	48	TRUE	54.5
13	478	518	13.375	54.5	12.615	12.674	48	TRUE	54.5
14	518	559	13.375	54.5	12.615	12.548	61	TRUE	54.5
15	559	599	13.375	54.5	12.615	12.671	48	TRUE	54.5
16	599	639	13.375	54.5	12.615	12.673	48	TRUE	54.5
17	639	679	13.375	54.5	12.615	12.672	48	TRUE	54.5
18	679	720	13.375	54.5	12.615	12.679	48	TRUE	54.5
19	720	760	13.375	54.5	12.615	12.677	48	TRUE	54.5
20	760	800	13.375	54.5	12.615	12.673	48	TRUE	54.5
21	800	840	13.375	54.5	12.615	12.675	48	TRUE	54.5
22	840	881	13.375	54.5	12.615	12.674	48	TRUE	54.5
23	881	923	13.375	54.5	12.615	12.651	54.5	TRUE	54.5
24	923	963	13.375	54.5	12.615	12.610	54.5	TRUE	54.5
25	963	1006	13.375	54.5	12.615	12.623	54.5	TRUE	54.5
26	1006	1043	13.375	54.5	12.615	12.613	54.5	TRUE	54.5
27	1043	1086	13.375	54.5	12.615	12.649	54.5	TRUE	54.5
28	1086	1130	13.375	54.5	12.615	12.626	54.5	TRUE	54.5
29	1130	1171	13.375	54.5	12.615	12.640	54.5	TRUE	54.5
30	1171	1216	13.375	54.5	12.615	12.621	54.5	TRUE	54.5
31	1216	1261	13.375	54.5	12.615	12.622	54.5	TRUE	54.5
32	1261	1299	13.375	54.5	12.615	12.634	54.5	TRUE	54.5
33	1299	1330	13.375	54.5	12.615	12.621	54.5	TRUE	54.5
34	1330	1369	13.375	54.5	12.615	12.633	54.5	TRUE	54.5
35	1369	1407	13.375	54.5	12.615	12.619	54.5	TRUE	54.5
36	1407	1447	13.375	54.5	12.615	12.647	54.5	TRUE	54.5
37	1447	1487	13.375	54.5	12.615	12.567	54.5	TRUE	54.5
38	1487	1526	13.375	61	12.515	12.641	54.5	FALSE	54.5
39	1526	1568	13.375	61	12.515	12.618	54.5	TRUE	61
40	1568	1608	13.375	61	12.515	12.613	54.5	TRUE	61
41	1608	1648	13.375	61	12.515	12.599	54.5	TRUE	61
42	1648	1689	13.375	61	12.515	12.651	54.5	FALSE	54.5
43	1689	1729	13.375	61	12.515	12.614	54.5	TRUE	61
44	1729	1771	13.375	61	12.515	12.621	54.5	TRUE	61
45	1771	1811	13.375	61	12.515	12.601	54.5	TRUE	61
46	1811	1850	13.375	61	12.515	12.607	54.5	TRUE	61
47	1850	1891	13.375	61	12.515	12.644	54.5	FALSE	54.5
48	1891	1931	13.375	61	12.515	12.642	54.5	FALSE	54.5
49	1931	1975	13.375	61	12.515	12.621	54.5	TRUE	61
50	1975	2008	13.375	61	12.515	12.593	54.5	TRUE	61
51	2008	2047	13.375	61	12.515	12.568	54.5	TRUE	61
52	2047	2090	13.375	61	12.515	12.647	54.5	FALSE	54.5
53	2090	2131	13.375	68	12.415	12.433	68	TRUE	68
54	2131	2171	13.375	68	12.415	12.442	68	TRUE	68
55	2171	2212	13.375	68	12.415	12.466	61	TRUE	68
56	2212	2256	13.375	68	12.415	12.438	68	TRUE	68
57	2256	2298	13.375	68	12.415	12.432	68	TRUE	68
58	2298	2343	13.375	68	12.415	12.409	68	TRUE	68

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Table A-14 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
59	2343	2382	13.375	68	12.415	12.413	68	TRUE	68
60	2382	2424	13.375	68	12.415	12.424	68	TRUE	68

Table A-15 BC-101A detailed section information taken on April 19, 2017

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	47	13.375	54.5	12.615	12.665	54.5	TRUE	54.5
2	47	87	13.375	54.5	12.615	12.723	48	FALSE	48
3	87	127	13.375	54.5	12.615	12.703	48	TRUE	54.5
4	127	167	13.375	54.5	12.615	12.666	48	TRUE	54.5
5	167	207	13.375	54.5	12.615	12.669	48	TRUE	54.5
6	207	247	13.375	54.5	12.615	12.669	48	TRUE	54.5
7	247	287	13.375	54.5	12.615	12.670	48	TRUE	54.5
8	287	327	13.375	54.5	12.615	12.672	48	TRUE	54.5
9	327	367	13.375	54.5	12.615	12.705	48	TRUE	54.5
10	367	407	13.375	54.5	12.615	12.672	48	TRUE	54.5
11	407	446	13.375	54.5	12.615	12.665	48	TRUE	54.5
12	446	486	13.375	54.5	12.615	12.673	48	TRUE	54.5
13	486	526	13.375	54.5	12.615	12.671	48	TRUE	54.5
14	526	567	13.375	54.5	12.615	12.547	61	TRUE	54.5
15	567	607	13.375	54.5	12.615	12.667	48	TRUE	54.5
16	607	646	13.375	54.5	12.615	12.670	48	TRUE	54.5
17	646	686	13.375	54.5	12.615	12.673	48	TRUE	54.5
18	686	726	13.375	54.5	12.615	12.677	48	TRUE	54.5
19	726	766	13.375	54.5	12.615	12.676	48	TRUE	54.5
20	766	807	13.375	54.5	12.615	12.671	48	TRUE	54.5
21	807	847	13.375	54.5	12.615	12.673	48	TRUE	54.5
22	847	887	13.375	54.5	12.615	12.674	48	TRUE	54.5
23	887	929	13.375	54.5	12.615	12.653	54.5	TRUE	54.5
24	929	969	13.375	54.5	12.615	12.611	54.5	TRUE	54.5
25	969	1012	13.375	54.5	12.615	12.623	54.5	TRUE	54.5
26	1012	1050	13.375	54.5	12.615	12.613	54.5	TRUE	54.5
27	1050	1091	13.375	54.5	12.615	12.651	54.5	TRUE	54.5
28	1091	1135	13.375	54.5	12.615	12.627	54.5	TRUE	54.5
29	1135	1177	13.375	54.5	12.615	12.641	54.5	TRUE	54.5
30	1177	1217	13.375	54.5	12.615	12.624	54.5	TRUE	54.5
31	1217	1252	13.375	54.5	12.615	12.620	54.5	TRUE	54.5
32	1252	1294	13.375	54.5	12.615	12.638	54.5	TRUE	54.5
33	1294	1335	13.375	54.5	12.615	12.625	54.5	TRUE	54.5
34	1335	1373	13.375	54.5	12.615	12.634	54.5	TRUE	54.5
35	1373	1411	13.375	54.5	12.615	12.621	54.5	TRUE	54.5
36	1411	1451	13.375	54.5	12.615	12.647	54.5	TRUE	54.5
37	1451	1488	13.375	54.5	12.615	12.567	54.5	TRUE	54.5
38	1488	1530	13.375	61	12.515	12.641	54.5	FALSE	54.5
39	1530	1571	13.375	61	12.515	12.618	54.5	TRUE	61
40	1571	1611	13.375	61	12.515	12.614	54.5	TRUE	61
41	1611	1651	13.375	61	12.515	12.600	54.5	TRUE	61
42	1651	1693	13.375	61	12.515	12.651	54.5	FALSE	54.5
43	1693	1732	13.375	61	12.515	12.615	54.5	TRUE	61
44	1732	1773	13.375	61	12.515	12.620	54.5	TRUE	61
45	1773	1814	13.375	61	12.515	12.600	54.5	TRUE	61
46	1814	1853	13.375	61	12.515	12.607	54.5	TRUE	61
47	1853	1893	13.375	61	12.515	12.641	54.5	FALSE	54.5
48	1893	1934	13.375	61	12.515	12.648	54.5	FALSE	54.5
49	1934	1969	13.375	61	12.515	12.622	54.5	TRUE	61
50	1969	2009	13.375	61	12.515	12.594	54.5	TRUE	61

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Table A-15 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
51	2009	2049	13.375	61	12.515	12.570	54.5	TRUE	61
52	2049	2092	13.375	61	12.515	12.645	54.5	FALSE	54.5
53	2092	2133	13.375	68	12.415	12.430	68	TRUE	68
54	2133	2172	13.375	68	12.415	12.444	68	TRUE	68
55	2172	2214	13.375	68	12.415	12.460	68	TRUE	68
56	2214	2257	13.375	68	12.415	12.428	68	TRUE	68
57	2257	2299	13.375	68	12.415	12.431	68	TRUE	68
58	2299	2341	13.375	68	12.415	12.414	68	TRUE	68
59	2341	2383	13.375	68	12.415	12.409	68	TRUE	68
60	2383	2424	13.375	68	12.415	12.420	68	TRUE	68

A.11. Bayou Choctaw 101B

Table A-16 BC-101B detailed section information taken on September 21, 2010

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	47	13.375	54.5	12.615	12.665	54.5	TRUE	54.5
2	47	87	13.375	54.5	12.615	12.723	48	FALSE	48
3	87	127	13.375	54.5	12.615	12.703	48	TRUE	54.5
4	127	167	13.375	54.5	12.615	12.666	48	TRUE	54.5
5	167	207	13.375	54.5	12.615	12.669	48	TRUE	54.5
6	207	247	13.375	54.5	12.615	12.669	48	TRUE	54.5
7	247	287	13.375	54.5	12.615	12.670	48	TRUE	54.5
8	287	327	13.375	54.5	12.615	12.672	48	TRUE	54.5
9	327	367	13.375	54.5	12.615	12.705	48	TRUE	54.5
10	367	407	13.375	54.5	12.615	12.672	48	TRUE	54.5
11	407	446	13.375	54.5	12.615	12.665	48	TRUE	54.5
12	446	486	13.375	54.5	12.615	12.673	48	TRUE	54.5
13	486	526	13.375	54.5	12.615	12.671	48	TRUE	54.5
14	526	567	13.375	54.5	12.615	12.547	61	TRUE	54.5
15	567	607	13.375	54.5	12.615	12.667	48	TRUE	54.5
16	607	646	13.375	54.5	12.615	12.670	48	TRUE	54.5
17	646	686	13.375	54.5	12.615	12.673	48	TRUE	54.5
18	686	726	13.375	54.5	12.615	12.677	48	TRUE	54.5
19	726	766	13.375	54.5	12.615	12.676	48	TRUE	54.5
20	766	807	13.375	54.5	12.615	12.671	48	TRUE	54.5
21	807	847	13.375	54.5	12.615	12.673	48	TRUE	54.5
22	847	887	13.375	54.5	12.615	12.674	48	TRUE	54.5
23	887	929	13.375	54.5	12.615	12.653	54.5	TRUE	54.5
24	929	969	13.375	54.5	12.615	12.611	54.5	TRUE	54.5
25	969	1012	13.375	54.5	12.615	12.623	54.5	TRUE	54.5
26	1012	1050	13.375	54.5	12.615	12.613	54.5	TRUE	54.5
27	1050	1091	13.375	54.5	12.615	12.651	54.5	TRUE	54.5
28	1091	1135	13.375	54.5	12.615	12.627	54.5	TRUE	54.5
29	1135	1177	13.375	54.5	12.615	12.641	54.5	TRUE	54.5
30	1177	1217	13.375	54.5	12.615	12.624	54.5	TRUE	54.5
31	1217	1252	13.375	54.5	12.615	12.620	54.5	TRUE	54.5
32	1252	1294	13.375	54.5	12.615	12.638	54.5	TRUE	54.5
33	1294	1335	13.375	54.5	12.615	12.625	54.5	TRUE	54.5
34	1335	1373	13.375	54.5	12.615	12.634	54.5	TRUE	54.5
35	1373	1411	13.375	54.5	12.615	12.621	54.5	TRUE	54.5
36	1411	1451	13.375	54.5	12.615	12.647	54.5	TRUE	54.5
37	1451	1488	13.375	54.5	12.615	12.567	54.5	TRUE	54.5
38	1488	1530	13.375	61	12.515	12.641	54.5	FALSE	54.5
39	1530	1571	13.375	61	12.515	12.618	54.5	TRUE	61
40	1571	1611	13.375	61	12.515	12.614	54.5	TRUE	61
41	1611	1651	13.375	61	12.515	12.600	54.5	TRUE	61
42	1651	1693	13.375	61	12.515	12.651	54.5	FALSE	54.5
43	1693	1732	13.375	61	12.515	12.615	54.5	TRUE	61
44	1732	1773	13.375	61	12.515	12.620	54.5	TRUE	61
45	1773	1814	13.375	61	12.515	12.600	54.5	TRUE	61
46	1814	1853	13.375	61	12.515	12.607	54.5	TRUE	61
47	1853	1893	13.375	61	12.515	12.641	54.5	FALSE	54.5
48	1893	1934	13.375	61	12.515	12.648	54.5	FALSE	54.5
49	1934	1969	13.375	61	12.515	12.622	54.5	TRUE	61
50	1969	2009	13.375	61	12.515	12.594	54.5	TRUE	61
51	2009	2049	13.375	61	12.515	12.570	54.5	TRUE	61
52	2049	2092	13.375	61	12.515	12.645	54.5	FALSE	54.5
53	2092	2133	13.375	68	12.415	12.430	68	TRUE	68
54	2133	2172	13.375	68	12.415	12.444	68	TRUE	68
55	2172	2214	13.375	68	12.415	12.460	68	TRUE	68
56	2214	2257	13.375	68	12.415	12.428	68	TRUE	68
57	2257	2299	13.375	68	12.415	12.431	68	TRUE	68

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Table A-16 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
58	2299	2341	13.375	68	12.415	12.414	68	TRUE	68
59	2341	2383	13.375	68	12.415	12.409	68	TRUE	68
60	2383	2424	13.375	68	12.415	12.420	68	TRUE	68

A.12. Bayou Choctaw 102A

Table A-17 BC-102A detailed section information taken on February 7, 2012

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	21	14	106.13	12.500	12.512	106.13	TRUE	106.13
2	21	64	14	106.13	12.500	12.537	106.13	TRUE	106.13
3	64	103	14	97.80	12.624	12.601	97.80	TRUE	97.80
4	103	145	14	97.80	12.624	12.652	97.80	TRUE	97.80
5	145	183	14	97.80	12.624	12.690	97.80	TRUE	97.80
6	183	229	14	97.80	12.624	12.646	97.80	TRUE	97.80
7	229	272	14	97.80	12.624	12.644	97.80	TRUE	97.80
8	272	313	14	97.80	12.624	12.686	97.80	TRUE	97.80
9	313	356	14	97.80	12.624	12.627	97.80	TRUE	97.80
10	356	392	14	97.80	12.624	12.661	97.80	TRUE	97.80
11	392	434	14	97.80	12.624	12.648	97.80	TRUE	97.80
12	434	471	14	97.80	12.624	12.460	106.13	TRUE	97.80
13	471	511	14	97.80	12.624	12.638	97.80	TRUE	97.80
14	511	552	14	97.80	12.624	12.627	97.80	TRUE	97.80
15	552	592	14	97.80	12.624	12.637	97.80	TRUE	97.80
16	592	634	14	97.80	12.624	12.612	97.80	TRUE	97.80
17	634	674	14	97.80	12.624	12.614	97.80	TRUE	97.80
18	674	715	14	97.80	12.624	12.658	97.80	TRUE	97.80
19	715	758	14	97.80	12.624	12.654	97.80	TRUE	97.80
20	758	797	14	97.80	12.624	12.661	97.80	TRUE	97.80
21	797	842	14	97.80	12.624	12.648	97.80	TRUE	97.80
22	842	884	14	97.80	12.624	12.642	97.80	TRUE	97.80
23	884	926	14	97.80	12.624	12.674	97.80	TRUE	97.80
24	926	969	14	97.80	12.624	12.618	97.80	TRUE	97.80
25	969	1009	14	97.80	12.624	12.630	97.80	TRUE	97.80
26	1009	1050	14	97.80	12.624	12.604	97.80	TRUE	97.80
27	1050	1091	14	97.80	12.624	12.618	97.80	TRUE	97.80
28	1091	1133	14	97.80	12.624	12.637	97.80	TRUE	97.80
29	1133	1173	14	97.80	12.624	12.658	97.80	TRUE	97.80
30	1173	1218	14	97.80	12.624	12.636	97.80	TRUE	97.80
31	1218	1261	14	97.80	12.624	12.609	97.80	TRUE	97.80
32	1261	1302	14	97.80	12.624	12.670	97.80	TRUE	97.80
33	1302	1342	14	97.80	12.624	12.604	97.80	TRUE	97.80
34	1342	1383	14	97.80	12.624	12.685	97.80	TRUE	97.80
35	1383	1424	14	97.80	12.624	12.608	97.80	TRUE	97.80
36	1424	1464	14	97.80	12.624	12.632	97.80	TRUE	97.80
37	1464	1505	14	97.80	12.624	12.616	97.80	TRUE	97.80
38	1505	1547	14	97.80	12.624	12.638	97.80	TRUE	97.80
39	1547	1587	14	106.13	12.500	12.540	106.13	TRUE	106.13
40	1587	1633	14	106.13	12.500	12.510	106.13	TRUE	106.13
41	1633	1673	14	106.13	12.500	12.524	106.13	TRUE	106.13
42	1673	1715	14	106.13	12.500	12.498	106.13	TRUE	106.13
43	1715	1753	14	106.13	12.500	12.532	106.13	TRUE	106.13
44	1753	1795	14	106.13	12.500	12.524	106.13	TRUE	106.13
45	1795	1834	14	106.13	12.500	12.531	106.13	TRUE	106.13
46	1834	1875	14	106.13	12.500	12.508	106.13	TRUE	106.13
47	1875	1918	14	106.13	12.500	12.521	106.13	TRUE	106.13
48	1918	1959	14	106.13	12.500	12.518	106.13	TRUE	106.13
49	1959	2000	14	106.13	12.500	12.488	106.13	TRUE	106.13
50	2000	2043	14	106.13	12.500	12.490	106.13	TRUE	106.13
51	2043	2079	14	106.13	12.500	12.540	106.13	TRUE	106.13
52	2079	2125	14	106.13	12.500	12.484	106.13	TRUE	106.13
53	2125	2168	14	106.13	12.500	12.500	106.13	TRUE	106.13
54	2168	2204	14	106.13	12.500	12.460	106.13	TRUE	106.13
55	2204	2241	14	106.13	12.500	12.512	106.13	TRUE	106.13
56	2241	2281	14	106.13	12.500	12.505	106.13	TRUE	106.13
57	2281	2323	14	106.13	12.500	12.491	106.13	TRUE	106.13
58	2323	2371	14	106.13	12.500	12.479	106.13	TRUE	106.13

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Table A-17 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
59	2371	2414	14	106.13	12.500	12.551	106.13	TRUE	106.13
60	2414	2458	14	106.13	12.500	12.486	106.13	TRUE	106.13
61	2458	2499	14	106.13	12.500	12.500	106.13	TRUE	106.13

A.13. Brine Disposal Well 001

Table A-18 BDW-001 detailed section information taken on March 16, 2016

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	7	9.625	43.5	8.755	9.003	32.3	FALSE	32.3
2	7	33	9.625	43.5	8.755	8.967	32.3	FALSE	32.3
3	33	60	9.625	43.5	8.755	8.959	36	FALSE	36
4	60	86	9.625	43.5	8.755	8.975	32.3	FALSE	32.3
5	86	116	9.625	43.5	8.755	8.951	36	FALSE	36
6	116	148	9.625	43.5	8.755	9.000	32.3	FALSE	32.3
7	148	174	9.625	43.5	8.755	8.981	32.3	FALSE	32.3
8	174	199	9.625	43.5	8.755	8.979	32.3	FALSE	32.3
9	199	226	9.625	43.5	8.755	8.989	32.3	FALSE	32.3
10	226	251	9.625	43.5	8.755	9.000	32.3	FALSE	32.3
11	251	277	9.625	43.5	8.755	8.960	36	FALSE	36
12	277	304	9.625	43.5	8.755	9.004	32.3	FALSE	32.3
13	304	330	9.625	43.5	8.755	8.939	36	FALSE	36
14	330	362	9.625	43.5	8.755	8.968	32.3	FALSE	32.3
15	362	393	9.625	43.5	8.755	8.954	36	FALSE	36
16	393	425	9.625	43.5	8.755	8.989	32.3	FALSE	32.3
17	425	456	9.625	43.5	8.755	8.868	38	FALSE	38
18	456	485	9.625	43.5	8.755	8.954	36	FALSE	36
19	485	513	9.625	43.5	8.755	8.962	32.3	FALSE	32.3
20	513	545	9.625	43.5	8.755	8.950	36	FALSE	36
21	545	578	9.625	43.5	8.755	8.956	36	FALSE	36
22	578	611	9.625	43.5	8.755	8.969	32.3	FALSE	32.3
23	611	642	9.625	43.5	8.755	8.955	36	FALSE	36
24	642	674	9.625	43.5	8.755	8.966	32.3	FALSE	32.3
25	674	705	9.625	43.5	8.755	8.962	32.3	FALSE	32.3
26	705	738	9.625	43.5	8.755	8.958	36	FALSE	36
27	738	770	9.625	43.5	8.755	8.932	36	FALSE	36
28	770	802	9.625	43.5	8.755	8.947	36	FALSE	36
29	802	833	9.625	43.5	8.755	8.949	36	FALSE	36
30	833	865	9.625	43.5	8.755	8.905	36	FALSE	36
31	865	896	9.625	43.5	8.755	8.962	32.3	FALSE	32.3
32	896	928	9.625	43.5	8.755	8.925	36	FALSE	36
33	928	958	9.625	43.5	8.755	8.939	36	FALSE	36
34	958	989	9.625	43.5	8.755	8.955	36	FALSE	36
35	989	1022	9.625	43.5	8.755	8.952	36	FALSE	36
36	1022	1053	9.625	43.5	8.755	8.944	36	FALSE	36
37	1053	1082	9.625	43.5	8.755	8.947	36	FALSE	36
38	1082	1113	9.625	43.5	8.755	8.946	36	FALSE	36
39	1113	1144	9.625	43.5	8.755	8.921	36	FALSE	36
40	1144	1172	9.625	43.5	8.755	8.961	36	FALSE	36
41	1172	1203	9.625	43.5	8.755	8.937	36	FALSE	36
42	1203	1234	9.625	43.5	8.755	8.959	36	FALSE	36
43	1234	1266	9.625	43.5	8.755	8.965	32.3	FALSE	32.3
44	1266	1297	9.625	43.5	8.755	8.985	32.3	FALSE	32.3
45	1297	1326	9.625	43.5	8.755	8.954	36	FALSE	36
46	1326	1358	9.625	43.5	8.755	8.939	36	FALSE	36
47	1358	1390	9.625	43.5	8.755	8.933	36	FALSE	36
48	1390	1419	9.625	43.5	8.755	8.959	36	FALSE	36
49	1419	1444	9.625	43.5	8.755	8.974	32.3	FALSE	32.3
50	1444	1474	9.625	43.5	8.755	8.961	36	FALSE	36
51	1474	1503	9.625	40	8.835	8.954	36	FALSE	36
52	1503	1549	9.625	40	8.835	8.985	32.3	FALSE	32.3
53	1549	1591	9.625	40	8.835	8.974	32.3	FALSE	32.3
54	1591	1632	9.625	40	8.835	8.957	36	FALSE	36
55	1632	1675	9.625	40	8.835	8.974	32.3	FALSE	32.3
56	1675	1717	9.625	40	8.835	8.987	32.3	FALSE	32.3
57	1717	1759	9.625	40	8.835	8.969	32.3	FALSE	32.3
58	1759	1801	9.625	40	8.835	8.975	32.3	FALSE	32.3

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Table A-18 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
59	1801	1843	9.625	40	8.835	8.957	36	FALSE	36
60	1843	1885	9.625	40	8.835	8.967	32.3	FALSE	32.3
61	1885	1927	9.625	40	8.835	8.976	32.3	FALSE	32.3
62	1927	1969	9.625	40	8.835	8.960	36	FALSE	36
63	1969	2010	9.625	40	8.835	8.981	32.3	FALSE	32.3
64	2010	2052	9.625	40	8.835	8.976	32.3	FALSE	32.3
65	2052	2094	9.625	40	8.835	8.980	32.3	FALSE	32.3
66	2094	2137	9.625	40	8.835	8.982	32.3	FALSE	32.3
67	2137	2179	9.625	40	8.835	8.977	32.3	FALSE	32.3
68	2179	2221	9.625	40	8.835	8.977	32.3	FALSE	32.3
69	2221	2259	9.625	40	8.835	8.949	36	FALSE	36
70	2259	2301	9.625	40	8.835	8.957	36	FALSE	36
71	2301	2342	9.625	40	8.835	8.950	36	FALSE	36
72	2342	2384	9.625	40	8.835	8.986	32.3	FALSE	32.3
73	2384	2425	9.625	40	8.835	8.964	32.3	FALSE	32.3
74	2425	2467	9.625	40	8.835	8.982	32.3	FALSE	32.3
75	2467	2510	9.625	40	8.835	8.973	32.3	FALSE	32.3
76	2510	2550	9.625	40	8.835	8.934	36	FALSE	36
77	2550	2592	9.625	40	8.835	8.977	32.3	FALSE	32.3
78	2592	2634	9.625	40	8.835	8.964	32.3	FALSE	32.3
79	2634	2677	9.625	40	8.835	8.980	32.3	FALSE	32.3
80	2677	2719	9.625	40	8.835	9.002	32.3	FALSE	32.3
81	2719	2761	9.625	40	8.835	8.999	32.3	FALSE	32.3
82	2761	2803	9.625	40	8.835	8.972	32.3	FALSE	32.3
83	2803	2846	9.625	40	8.835	8.977	32.3	FALSE	32.3
84	2846	2871	9.625	40	8.835	8.979	32.3	FALSE	32.3
85	2871	2894	9.625	40	8.835	8.966	32.3	FALSE	32.3
86	2894	2928	9.625	40	8.835	8.896	38	TRUE	40
87	2928	2960	9.625	40	8.835	8.910	36	TRUE	40
88	2960	3002	9.625	40	8.835	8.871	38	TRUE	40
89	3002	3046	9.625	40	8.835	8.888	38	TRUE	40
90	3046	3089	9.625	40	8.835	8.901	38	TRUE	40
91	3089	3131	9.625	40	8.835	8.890	38	TRUE	40
92	3131	3175	9.625	40	8.835	8.888	38	TRUE	40
93	3175	3217	9.625	40	8.835	8.898	38	TRUE	40
94	3217	3259	9.625	40	8.835	8.883	38	TRUE	40
95	3259	3304	9.625	40	8.835	8.891	38	TRUE	40
96	3304	3346	9.625	40	8.835	8.878	38	TRUE	40
97	3346	3387	9.625	40	8.835	8.880	38	TRUE	40
98	3387	3428	9.625	40	8.835	8.878	38	TRUE	40
99	3428	3470	9.625	40	8.835	8.898	38	TRUE	40
100	3470	3512	9.625	40	8.835	8.882	38	TRUE	40
101	3512	3554	9.625	40	8.835	8.901	38	TRUE	40
102	3554	3584	9.625	40	8.835	8.911	36	TRUE	40
103	3584	3617	9.625	40	8.835	8.901	38	TRUE	40
104	3617	3650	9.625	40	8.835	8.877	38	TRUE	40
105	3650	3681	9.625	40	8.835	8.913	36	TRUE	40
106	3681	3714	9.625	40	8.835	8.891	38	TRUE	40
107	3714	3745	9.625	40	8.835	8.911	36	TRUE	40
108	3745	3787	9.625	40	8.835	8.883	38	TRUE	40
109	3787	3829	9.625	36	8.921	8.893	38	TRUE	36
110	3829	3872	9.625	36	8.921	8.890	38	TRUE	36
111	3872	3916	9.625	36	8.921	8.895	38	TRUE	36
112	3916	3960	9.625	36	8.921	8.890	38	TRUE	36
113	3960	4003	9.625	36	8.921	8.894	38	TRUE	36
114	4003	4047	9.625	36	8.921	8.889	38	TRUE	36
115	4047	4083	9.625	36	8.921	8.884	38	TRUE	36
116	4083	4126	9.625	36	8.921	8.885	38	TRUE	36
117	4126	4170	9.625	36	8.921	8.881	38	TRUE	36
118	4170	4214	9.625	36	8.921	8.889	38	TRUE	36
119	4214	4257	9.625	36	8.921	8.850	40	TRUE	36
120	4257	4298	9.625	36	8.921	8.898	38	TRUE	36

Continued on next page

Table A-18 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
121	4298	4352	9.625	36	8.921	8.892	38	TRUE	36

A.14. Brine Disposal Well 007

Table A-19 BDW-007 detailed section information taken on February 22, 2016

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	13	9.625	36	8.921	8.951	36	TRUE	36
2	13	52	9.625	36	8.921	8.929	36	TRUE	36
3	52	92	9.625	36	8.921	8.952	36	TRUE	36
4	92	132	9.625	36	8.921	8.934	36	TRUE	36
5	132	170	9.625	36	8.921	8.989	32.3	TRUE	36
6	170	204	9.625	36	8.921	9.038	29.3	FALSE	29.3
7	204	243	9.625	36	8.921	8.953	36	TRUE	36
8	243	280	9.625	36	8.921	8.941	36	TRUE	36
9	280	318	9.625	36	8.921	8.975	32.3	TRUE	36
10	318	355	9.625	36	8.921	8.976	32.3	TRUE	36
11	355	391	9.625	36	8.921	8.936	36	TRUE	36
12	391	431	9.625	36	8.921	8.922	36	TRUE	36
13	431	469	9.625	36	8.921	8.949	36	TRUE	36
14	469	509	9.625	36	8.921	8.909	36	TRUE	36
15	509	548	9.625	36	8.921	8.916	36	TRUE	36
16	548	586	9.625	36	8.921	8.912	36	TRUE	36
17	586	627	9.625	36	8.921	8.928	36	TRUE	36
18	627	667	9.625	36	8.921	8.914	36	TRUE	36
19	667	707	9.625	36	8.921	8.909	36	TRUE	36
20	707	747	9.625	36	8.921	8.917	36	TRUE	36
21	747	783	9.625	36	8.921	8.927	36	TRUE	36
22	783	819	9.625	36	8.921	9.011	32.3	FALSE	32.3
23	819	859	9.625	36	8.921	8.917	36	TRUE	36
24	859	895	9.625	36	8.921	8.925	36	TRUE	36
25	895	935	9.625	36	8.921	8.918	36	TRUE	36
26	935	974	9.625	36	8.921	8.958	36	TRUE	36
27	974	1015	9.625	36	8.921	8.927	36	TRUE	36
28	1015	1054	9.625	36	8.921	8.915	36	TRUE	36
29	1054	1095	9.625	36	8.921	8.951	36	TRUE	36
30	1095	1135	9.625	36	8.921	8.955	36	TRUE	36
31	1135	1173	9.625	36	8.921	8.919	36	TRUE	36
32	1173	1210	9.625	36	8.921	8.886	38	TRUE	36
33	1210	1249	9.625	36	8.921	8.886	38	TRUE	36
34	1249	1289	9.625	36	8.921	8.905	36	TRUE	36
35	1289	1324	9.625	36	8.921	8.887	38	TRUE	36
36	1324	1365	9.625	36	8.921	8.903	38	TRUE	36
37	1365	1401	9.625	36	8.921	8.905	36	TRUE	36
38	1401	1439	9.625	36	8.921	8.908	36	TRUE	36
39	1439	1479	9.625	36	8.921	8.902	38	TRUE	36
40	1479	1518	9.625	36	8.921	8.899	38	TRUE	36
41	1518	1557	9.625	36	8.921	8.953	36	TRUE	36
42	1557	1596	9.625	36	8.921	8.894	38	TRUE	36
43	1596	1634	9.625	36	8.921	8.864	38	TRUE	36
44	1634	1673	9.625	36	8.921	8.917	36	TRUE	36
45	1673	1714	9.625	36	8.921	8.909	36	TRUE	36
46	1714	1751	9.625	36	8.921	8.838	40	TRUE	36
47	1751	1788	9.625	36	8.921	8.931	36	TRUE	36
48	1788	1825	9.625	36	8.921	8.902	38	TRUE	36
49	1825	1864	9.625	36	8.921	8.905	36	TRUE	36
50	1864	1904	9.625	36	8.921	8.893	38	TRUE	36
51	1904	1943	9.625	36	8.921	8.887	38	TRUE	36
52	1943	1980	9.625	36	8.921	8.929	36	TRUE	36
53	1980	2018	9.625	36	8.921	8.945	36	TRUE	36
54	2018	2057	9.625	36	8.921	8.891	38	TRUE	36
55	2057	2091	9.625	36	8.921	8.952	36	TRUE	36
56	2091	2126	9.625	36	8.921	8.952	36	TRUE	36
57	2126	2167	9.625	36	8.921	8.903	38	TRUE	36

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Table A-19 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
58	2167	2207	9.625	36	8.921	8.929	36	TRUE	36
59	2207	2246	9.625	36	8.921	8.922	36	TRUE	36
60	2246	2283	9.625	36	8.921	8.908	36	TRUE	36
61	2283	2323	9.625	36	8.921	8.918	36	TRUE	36
62	2323	2363	9.625	36	8.921	8.894	38	TRUE	36
63	2363	2404	9.625	36	8.921	8.925	36	TRUE	36
64	2404	2445	9.625	36	8.921	8.935	36	TRUE	36
65	2445	2486	9.625	36	8.921	8.909	36	TRUE	36
66	2486	2527	9.625	36	8.921	8.916	36	TRUE	36
67	2527	2567	9.625	36	8.921	8.896	38	TRUE	36
68	2567	2607	9.625	36	8.921	8.899	38	TRUE	36
69	2607	2647	9.625	36	8.921	8.941	36	TRUE	36
70	2647	2687	9.625	36	8.921	8.903	36	TRUE	36
71	2687	2723	9.625	36	8.921	8.852	40	TRUE	36
72	2723	2763	9.625	36	8.921	8.897	38	TRUE	36
73	2763	2802	9.625	36	8.921	8.924	36	TRUE	36
74	2802	2842	9.625	36	8.921	8.922	36	TRUE	36
75	2842	2880	9.625	36	8.921	8.883	38	TRUE	36
76	2880	2920	9.625	36	8.921	8.936	36	TRUE	36
77	2920	2963	9.625	36	8.921	8.894	38	TRUE	36
78	2963	3002	9.625	36	8.921	8.894	38	TRUE	36
79	3002	3042	9.625	36	8.921	8.918	36	TRUE	36
80	3042	3081	9.625	36	8.921	8.903	38	TRUE	36
81	3081	3121	9.625	36	8.921	8.926	36	TRUE	36
82	3121	3162	9.625	36	8.921	8.951	36	TRUE	36
83	3162	3201	9.625	36	8.921	8.930	36	TRUE	36
84	3201	3240	9.625	36	8.921	8.917	36	TRUE	36
85	3240	3278	9.625	36	8.921	8.900	38	TRUE	36
86	3278	3317	9.625	36	8.921	8.909	36	TRUE	36
87	3317	3352	9.625	36	8.921	8.908	36	TRUE	36
88	3352	3391	9.625	36	8.921	8.889	38	TRUE	36
89	3391	3428	9.625	36	8.921	8.896	38	TRUE	36
90	3428	3468	9.625	36	8.921	8.922	36	TRUE	36
91	3468	3509	9.625	36	8.921	8.884	38	TRUE	36
92	3509	3548	9.625	36	8.921	8.876	38	TRUE	36
93	3548	3586	9.625	43.5	8.755	8.865	38	FALSE	38
94	3586	3627	9.625	43.5	8.755	8.693	47	TRUE	43.5
95	3627	3668	9.625	43.5	8.755	8.707	47	TRUE	43.5
96	3668	3710	9.625	43.5	8.755	8.701	47	TRUE	43.5
97	3710	3750	9.625	43.5	8.755	8.695	47	TRUE	43.5
98	3750	3792	9.625	43.5	8.755	8.712	47	TRUE	43.5
99	3792	3831	9.625	43.5	8.755	8.697	47	TRUE	43.5
100	3831	3871	9.625	43.5	8.755	8.691	47	TRUE	43.5
101	3871	3913	9.625	43.5	8.755	8.704	47	TRUE	43.5
102	3913	3956	9.625	43.5	8.755	8.709	47	TRUE	43.5
103	3956	3994	9.625	43.5	8.755	8.691	47	TRUE	43.5
104	3994	4035	9.625	43.5	8.755	8.685	47	TRUE	43.5
105	4035	4077	9.625	43.5	8.755	8.698	47	TRUE	43.5
106	4077	4116	9.625	43.5	8.755	8.689	47	TRUE	43.5
107	4116	4158	9.625	43.5	8.755	8.739	43.5	TRUE	43.5
108	4158	4197	9.625	43.5	8.755	8.711	47	TRUE	43.5
109	4197	4237	9.625	43.5	8.755	8.690	47	TRUE	43.5
110	4237	4280	9.625	43.5	8.755	8.696	47	TRUE	43.5

A.15. Brine Disposal Well 010

Table A-20 BDW-010 detailed section information taken on July 28, 2010

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
1	0	18	9.625	40	8.885	9.014	32.3	FALSE	32.3
2	18	59	9.625	40	8.885	8.982	32.3	FALSE	32.3
3	59	100	9.625	40	8.885	8.969	32.3	TRUE	40
4	100	143	9.625	40	8.885	8.977	32.3	TRUE	40
5	143	186	9.625	40	8.885	8.975	32.3	TRUE	40
6	186	228	9.625	40	8.885	8.977	32.3	TRUE	40
7	228	267	9.625	40	8.885	8.991	32.3	FALSE	32.3
8	267	310	9.625	40	8.885	8.982	32.3	FALSE	32.3
9	310	352	9.625	40	8.885	8.979	32.3	FALSE	32.3
10	352	395	9.625	40	8.885	8.990	32.3	FALSE	32.3
11	395	437	9.625	40	8.885	8.979	32.3	FALSE	32.3
12	437	480	9.625	40	8.885	8.981	32.3	FALSE	32.3
13	480	515	9.625	40	8.885	8.972	32.3	TRUE	40
14	515	556	9.625	40	8.885	9.001	32.3	FALSE	32.3
15	556	598	9.625	40	8.885	8.995	32.3	FALSE	32.3
16	598	640	9.625	40	8.885	8.978	32.3	FALSE	32.3
17	640	680	9.625	40	8.885	8.979	32.3	FALSE	32.3
18	680	724	9.625	40	8.885	9.001	32.3	FALSE	32.3
19	724	766	9.625	40	8.885	8.984	32.3	FALSE	32.3
20	766	809	9.625	40	8.885	8.996	32.3	FALSE	32.3
21	809	852	9.625	40	8.885	8.990	32.3	FALSE	32.3
22	852	892	9.625	40	8.885	8.988	32.3	FALSE	32.3
23	892	934	9.625	40	8.885	8.997	32.3	FALSE	32.3
24	934	976	9.625	40	8.885	8.981	32.3	FALSE	32.3
25	976	1018	9.625	40	8.885	8.978	32.3	FALSE	32.3
26	1018	1062	9.625	40	8.885	8.997	32.3	FALSE	32.3
27	1062	1104	9.625	40	8.885	8.993	32.3	FALSE	32.3
28	1104	1143	9.625	40	8.885	8.975	32.3	TRUE	40
29	1143	1178	9.625	40	8.885	8.992	32.3	FALSE	32.3
30	1178	1219	9.625	40	8.885	8.979	32.3	FALSE	32.3
31	1219	1256	9.625	40	8.885	8.971	32.3	TRUE	40
32	1256	1296	9.625	40	8.885	8.978	32.3	FALSE	32.3
33	1296	1336	9.625	40	8.885	8.974	32.3	TRUE	40
34	1336	1377	9.625	40	8.885	8.985	32.3	FALSE	32.3
35	1377	1421	9.625	40	8.885	8.984	32.3	FALSE	32.3
36	1421	1461	9.625	40	8.885	8.988	32.3	FALSE	32.3
37	1461	1501	9.625	40	8.885	8.983	32.3	FALSE	32.3
38	1501	1541	9.625	40	8.885	8.956	36	TRUE	40
39	1541	1584	9.625	40	8.885	8.992	32.3	FALSE	32.3
40	1584	1626	9.625	40	8.885	8.977	32.3	TRUE	40
41	1626	1667	9.625	40	8.885	8.975	32.3	TRUE	40
42	1667	1711	9.625	40	8.885	8.994	32.3	FALSE	32.3
43	1711	1752	9.625	40	8.885	8.979	32.3	FALSE	32.3
44	1752	1792	9.625	40	8.885	8.946	36	TRUE	40
45	1792	1835	9.625	40	8.885	8.983	32.3	FALSE	32.3
46	1835	1877	9.625	40	8.885	8.995	32.3	FALSE	32.3
47	1877	1920	9.625	40	8.885	8.980	32.3	FALSE	32.3
48	1920	1962	9.625	40	8.885	8.971	32.3	TRUE	40
49	1962	2004	9.625	40	8.885	8.991	32.3	FALSE	32.3
50	2004	2047	9.625	40	8.885	8.988	32.3	FALSE	32.3
51	2047	2089	9.625	40	8.885	8.993	32.3	FALSE	32.3
52	2089	2130	9.625	40	8.885	8.995	32.3	FALSE	32.3
53	2130	2173	9.625	40	8.885	8.987	32.3	FALSE	32.3
54	2173	2214	9.625	40	8.885	8.989	32.3	FALSE	32.3
55	2214	2257	9.625	40	8.885	9.003	32.3	FALSE	32.3
56	2257	2298	9.625	40	8.885	8.983	32.3	FALSE	32.3
57	2298	2339	9.625	40	8.885	8.982	32.3	FALSE	32.3
58	2339	2380	9.625	40	8.885	8.996	32.3	FALSE	32.3

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Table A-20 – Continued from previous page

Casing Number	Depth From	Depth To	Nominal Outer Diameter	Nominal Casing Weight	Nominal Inner Diameter	Measured Inner Diameter	Closest Casing Weight	Within Threshold?	Weight Calculated
-	ft	ft	in	lb/ft	in	in	lb/ft	-	lb/ft
59	2380	2422	9.625	40	8.885	8.970	32.3	TRUE	40
60	2422	2465	9.625	40	8.885	9.002	32.3	FALSE	32.3
61	2465	2508	9.625	40	8.885	8.989	32.3	FALSE	32.3
62	2508	2551	9.625	40	8.885	9.004	32.3	FALSE	32.3
63	2551	2590	9.625	40	8.885	9.009	32.3	FALSE	32.3
64	2590	2631	9.625	40	8.885	8.984	32.3	FALSE	32.3
65	2631	2674	9.625	40	8.885	8.993	32.3	FALSE	32.3
66	2674	2716	9.625	40	8.885	9.023	32.3	FALSE	32.3
67	2716	2758	9.625	40	8.885	9.010	32.3	FALSE	32.3
68	2758	2801	9.625	40	8.885	8.992	32.3	FALSE	32.3
69	2801	2837	9.625	40	8.885	8.997	32.3	FALSE	32.3
70	2837	2879	9.625	40	8.885	8.991	32.3	FALSE	32.3
71	2879	2920	9.625	40	8.885	8.990	32.3	FALSE	32.3
72	2920	2961	9.625	40	8.885	9.002	32.3	FALSE	32.3
73	2961	3002	9.625	40	8.885	9.015	32.3	FALSE	32.3
74	3002	3044	9.625	40	8.885	9.017	32.3	FALSE	32.3
75	3044	3086	9.625	40	8.885	8.990	32.3	FALSE	32.3
76	3086	3130	9.625	40	8.885	8.981	32.3	FALSE	32.3
77	3130	3171	9.625	40	8.885	8.993	32.3	FALSE	32.3
78	3171	3212	9.625	40	8.885	8.984	32.3	FALSE	32.3
79	3212	3256	9.625	40	8.885	8.994	32.3	FALSE	32.3
80	3256	3299	9.625	40	8.885	9.012	32.3	FALSE	32.3
81	3299	3341	9.625	40	8.885	9.002	32.3	FALSE	32.3
82	3341	3379	9.625	40	8.885	8.951	36	TRUE	40
83	3379	3418	9.625	40	8.885	8.989	32.3	FALSE	32.3
84	3418	3458	9.625	40	8.885	8.999	32.3	FALSE	32.3
85	3458	3497	9.625	40	8.885	9.011	32.3	FALSE	32.3
86	3497	3528	9.625	40	8.885	8.911	36	TRUE	40
87	3528	3560	9.625	40	8.885	8.924	36	TRUE	40
88	3560	3592	9.625	40	8.885	8.942	36	TRUE	40
89	3592	3622	9.625	40	8.885	8.900	38	TRUE	40
90	3622	3652	9.625	40	8.885	8.899	38	TRUE	40
91	3652	3679	9.625	40	8.885	8.912	36	TRUE	40
92	3679	3711	9.625	40	8.885	8.905	36	TRUE	40
93	3711	3742	9.625	43.5	8.755	8.902	38	FALSE	38
94	3742	3774	9.625	43.5	8.755	8.939	36	FALSE	36
95	3774	3804	9.625	43.5	8.755	8.898	38	FALSE	38
96	3804	3835	9.625	43.5	8.755	8.952	36	FALSE	36
97	3835	3869	9.625	43.5	8.755	8.942	36	FALSE	36
98	3869	3901	9.625	43.5	8.755	8.965	32.3	FALSE	32.3
99	3901	3935	9.625	43.5	8.755	8.942	36	FALSE	36
100	3935	3968	9.625	43.5	8.755	8.952	36	FALSE	36
101	3968	4000	9.625	43.5	8.755	8.933	36	FALSE	36
102	4000	4033	9.625	43.5	8.755	8.933	36	FALSE	36
103	4033	4064	9.625	43.5	8.755	8.907	36	FALSE	36
104	4064	4094	9.625	43.5	8.755	8.894	38	FALSE	38
105	4094	4127	9.625	43.5	8.755	8.936	36	FALSE	36
106	4127	4160	9.625	43.5	8.755	8.940	36	FALSE	36
107	4160	4193	9.625	43.5	8.755	8.958	36	FALSE	36
108	4193	4225	9.625	43.5	8.755	8.919	36	FALSE	36
109	4225	4256	9.625	43.5	8.755	8.918	36	FALSE	36
110	4256	4289	9.625	43.5	8.755	8.928	36	FALSE	36
111	4289	4326	9.625	43.5	8.755	8.943	36	FALSE	36
112	4326	4352	9.625	43.5	8.755	8.914	36	FALSE	36
113	4352	4381	9.625	43.5	8.755	8.932	36	FALSE	36
114	4381	4413	9.625	43.5	8.755	8.920	36	FALSE	36
115	4413	4444	9.625	43.5	8.755	8.904	36	FALSE	36
116	4444	4475	9.625	43.5	8.755	8.930	36	FALSE	36
117	4475	4508	9.625	43.5	8.755	8.939	36	FALSE	36
118	4508	4540	9.625	43.5	8.755	8.907	36	FALSE	36
119	4540	4570	9.625	43.5	8.755	8.906	36	FALSE	36

APPENDIX B. AVAILABLE AS-BUILT WELL DRAWINGS

This section includes the available as-built drawings at the time of writing.

1. CASING SIZES ARE OUTSIDE DIAMETER (OD).
2. BHF IS 13.0 FEET ABOVE THE MEAN SEA LEVEL.

10 3/4" CASING NECK
(5 1/4" ABOVE BHF)

WELD

BRADENHEAD FLANGE (BHF)
DEPTH DATUM

20" x 13 3/8" CEMENTED
ANNULUS PRESSURE

26" CASING 27 FT.

20" CASING 459 FT.

TOP OF CAPROCK 482 FT.

TOP OF SALT 642 FT.

10 3/4" LINER 2477 FT.

13 3/8" CASING 2565 FT.

SALT BOREHOLE

TOP OF CAVERN 2605 FT.

26" CONDUCTOR CASING
(DETAILS NOT PROVIDED
IN HISTORICAL RECORDS)

20" CASING
(DETAILS NOT PROVIDED
IN HISTORICAL RECORDS)

TOP OF CAPROCK

TOP OF SALT

10 3/4" K-55; BUTTRESS
COUPLING

#/F FROM TO
51 0 2477

13 3/8" CASING
(DETAILS NOT PROVIDED
IN HISTORICAL RECORDS)

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____
ENGINEER OF RECORD: _____
SIGNATURE: _____
REGION: _____
NUMBER: _____

REGISTRATION STATE: _____

NO. _____
DATE: _____
SCALE: _____
SHEET: _____

WELL COMPLETION CONFIGURATION

BC-15

BAYOU CHOCTAW
IBERVILLE PARISH, LOUISIANA

OFFICE OF SYSTEMS
AND PROJECTS

STRATEGIC
PETROLEUM
RESERVE

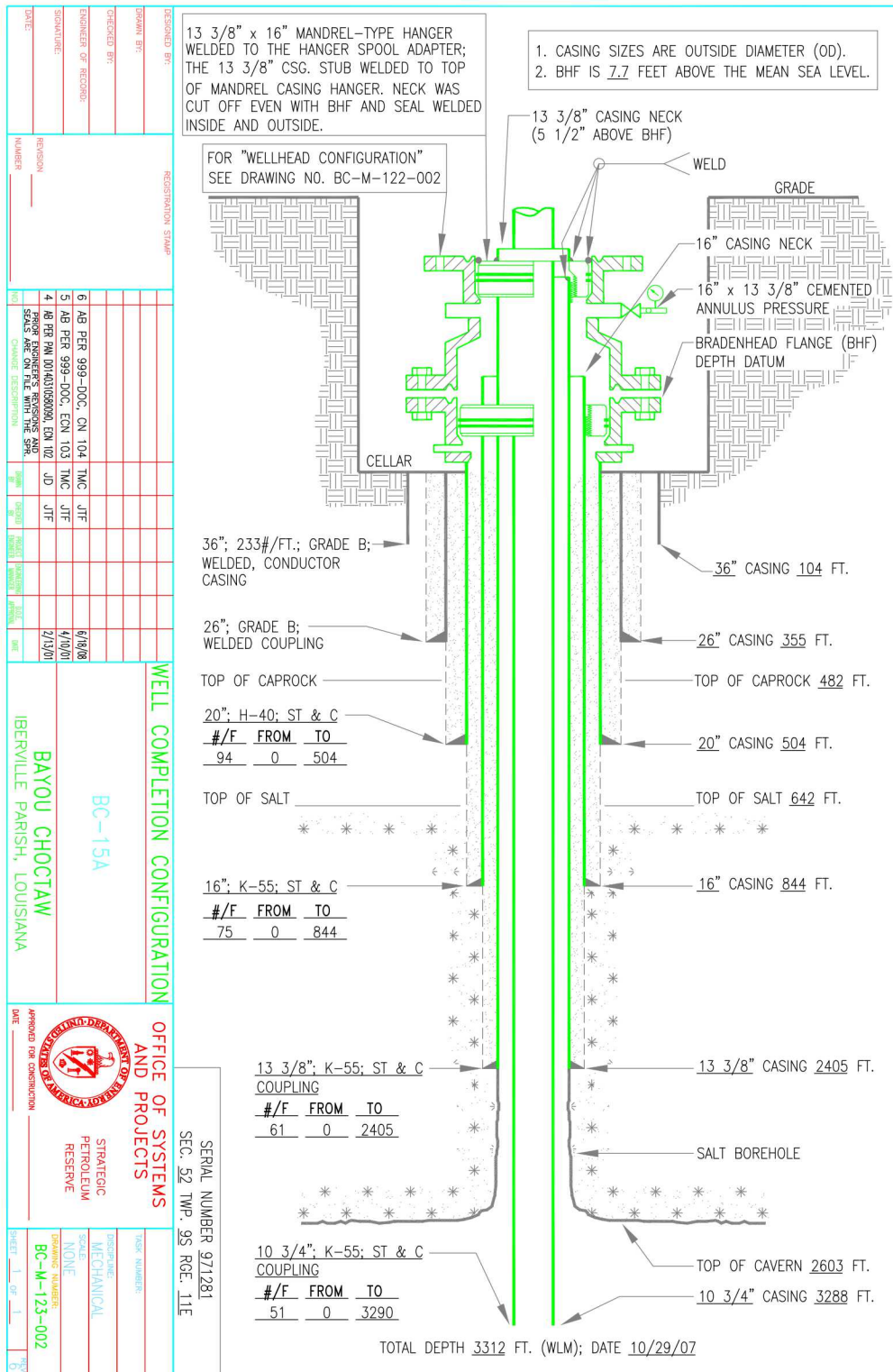
APPROVED FOR CONSTRUCTION

SERIAL NUMBER 47398
SEC. 52 TWP. 9S RGE. 11E

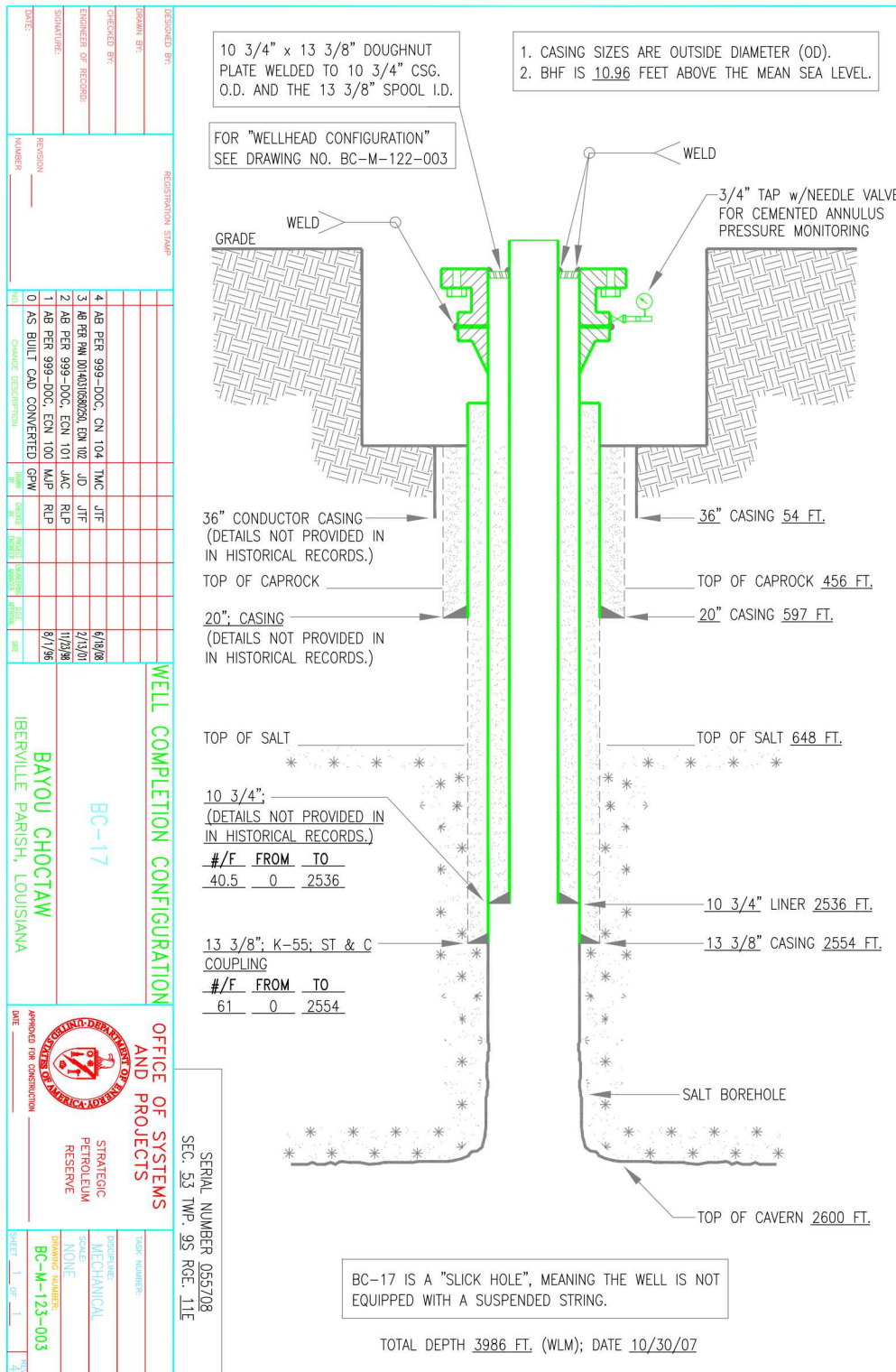
BC-15 IS A "SLICK HOLE", MEANING THE WELL
IS NOT EQUIPPED WITH A SUSPENDED STRING.

TOTAL DEPTH 3295 FT. (WLM); DATE 4/25/07

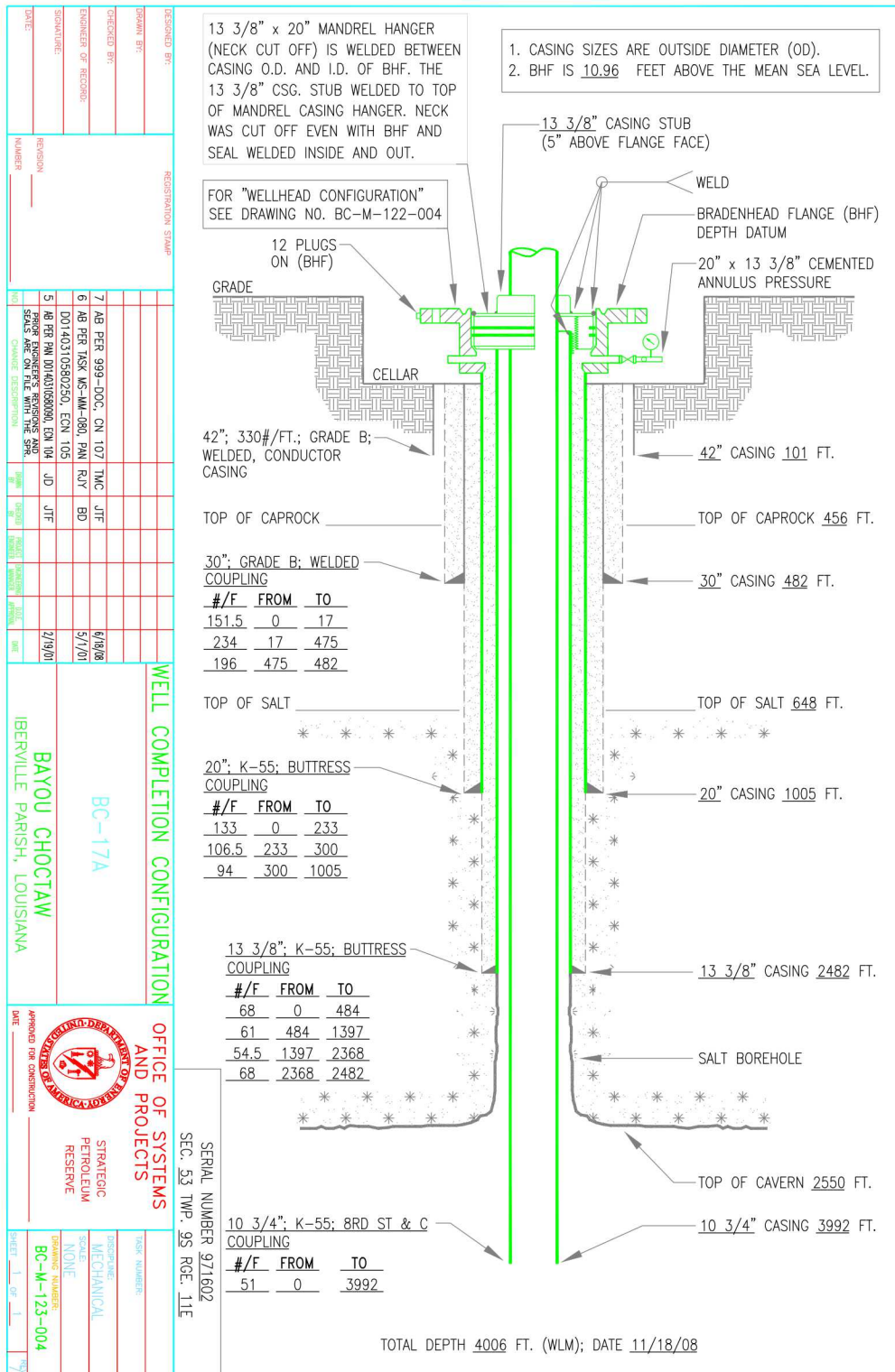
B.2. Bayou Choctaw 015A



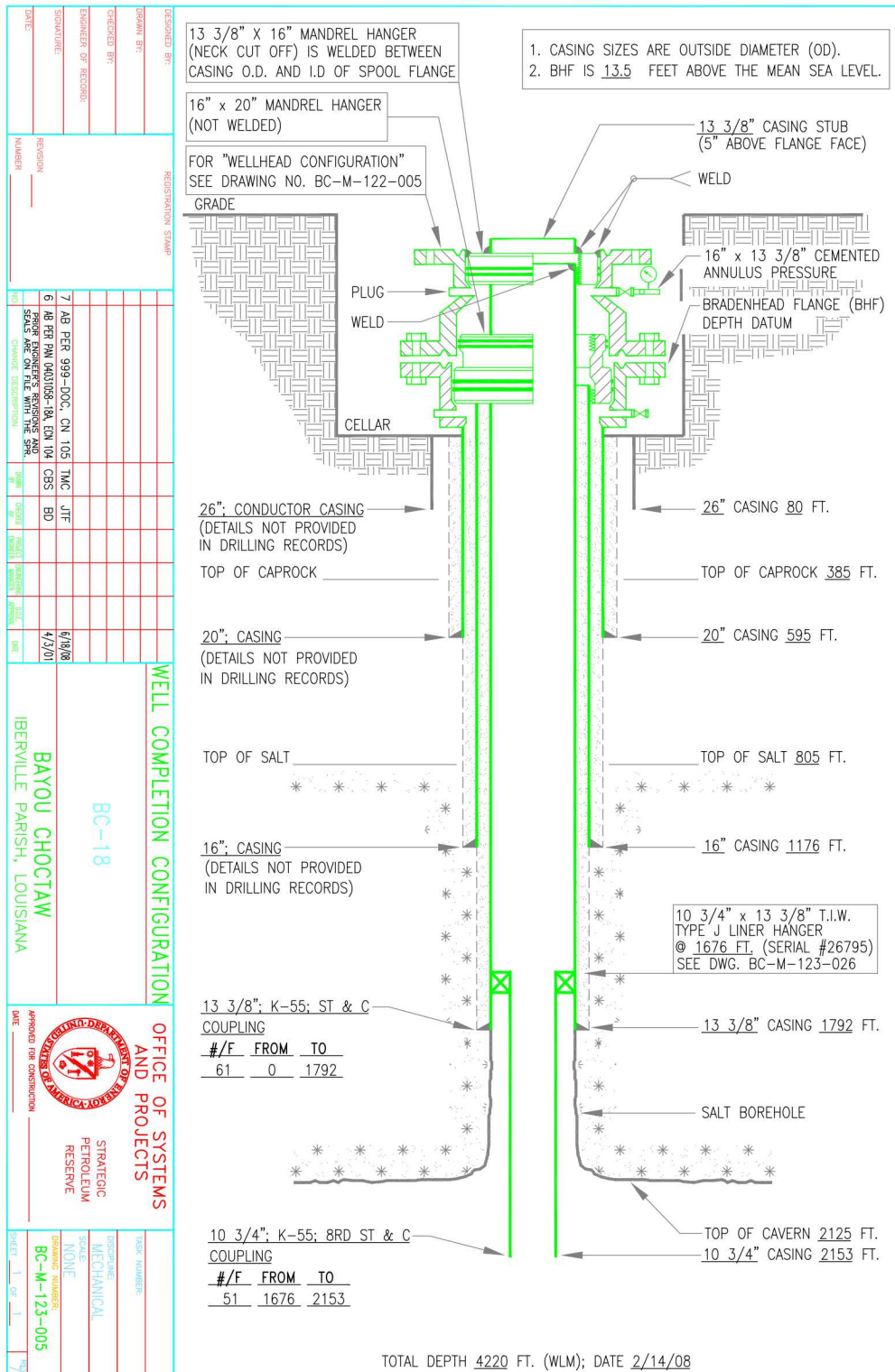
B.3. Bayou Choctaw 017



B.4. Bayou Choctaw 017A



B.5. Bayou Choctaw 018



1. CASING SIZES ARE OUTSIDE DIAMETER (OD).
2. BHF IS 11.3 FEET ABOVE THE MEAN SEA LEVEL.

13 3/8" x 16" MANDREL HANGER (NECK CUT OFF) IS WELDED BETWEEN CASING O.D. AND I.D. OF SPOOL FLANGE

16" x 20" MANDREL HANGER (NOT WELDED)

FOR "WELLHEAD CONFIGURATION" SEE DRAWING NO. BC-M-122-006

GRADE

WELD

CELLAR

36"; 233#/FT.; GRADE B; WELDED, CONDUCTOR CASING

TOP OF CAPROCK

26"; GRADE B; WELDED COUPLING

20"; H-40; ST & C

#/F	FROM	TO
94	0	669

TOP OF SALT

16"; K-55; ST & C

#/F	FROM	TO
75	0	1004

13 3/8"; K-55; ST & C COUPLING

#/F	FROM	TO
61	0	1787

10 3/4"; K-55; 8RD ST & C

#/F	FROM	TO
51	0	4208

13 3/8" CASING NECK (5 1/2" ABOVE FLANGE FACE)

WELD

GRADE

16" CASING NECK

BRADENHEAD FLANGE (BHF) DEPTH DATUM

20" x 16" CEMENTED ANNULUS PRESSURE

36" CASING 113 FT.

TOP OF CAPROCK 385 FT.

26" CASING 359 FT.

20" CASING 669 FT.

TOP OF SALT 805 FT.

16" CASING 1004 FT.

13 3/8" CASING 1787 FT.

SALT BOREHOLE

TOP OF CAVERN 2125 FT.

10 3/4" CASING 4208 FT.

TOTAL DEPTH 4224 FT. (WLM); DATE 6/4/07

REGISTRATION STAMP

DESIGNED BY: _____

DRAWN BY: _____

CHECKED BY: _____

ENGINEER OF RECORD: _____

DATE: _____

REGION: _____

NUMBER: _____

WELL COMPLETION CONFIGURATION

BC-18A

BAYOU CHOCTAW

IBERVILLE PARISH, LOUISIANA

OFFICE OF SYSTEMS AND PROJECTS

STRATEGIC PETROLEUM RESERVE

APPROVED FOR CONSTRUCTION

SERIAL NUMBER 971282

SEC. 32 TWP. 9S RGE. 11E

TYPE NUMBER: _____

MECHANICAL

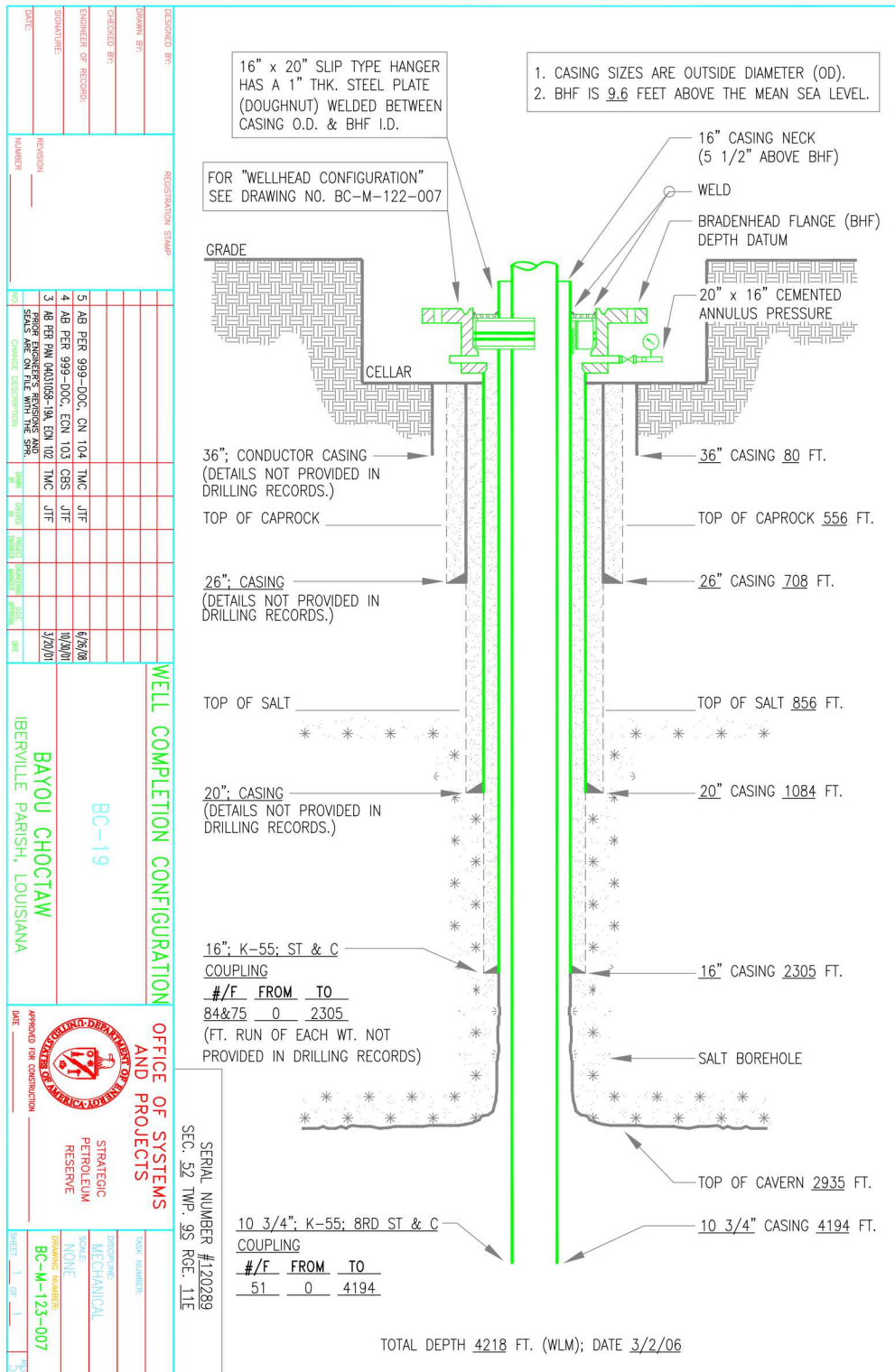
NONE

DATE: _____

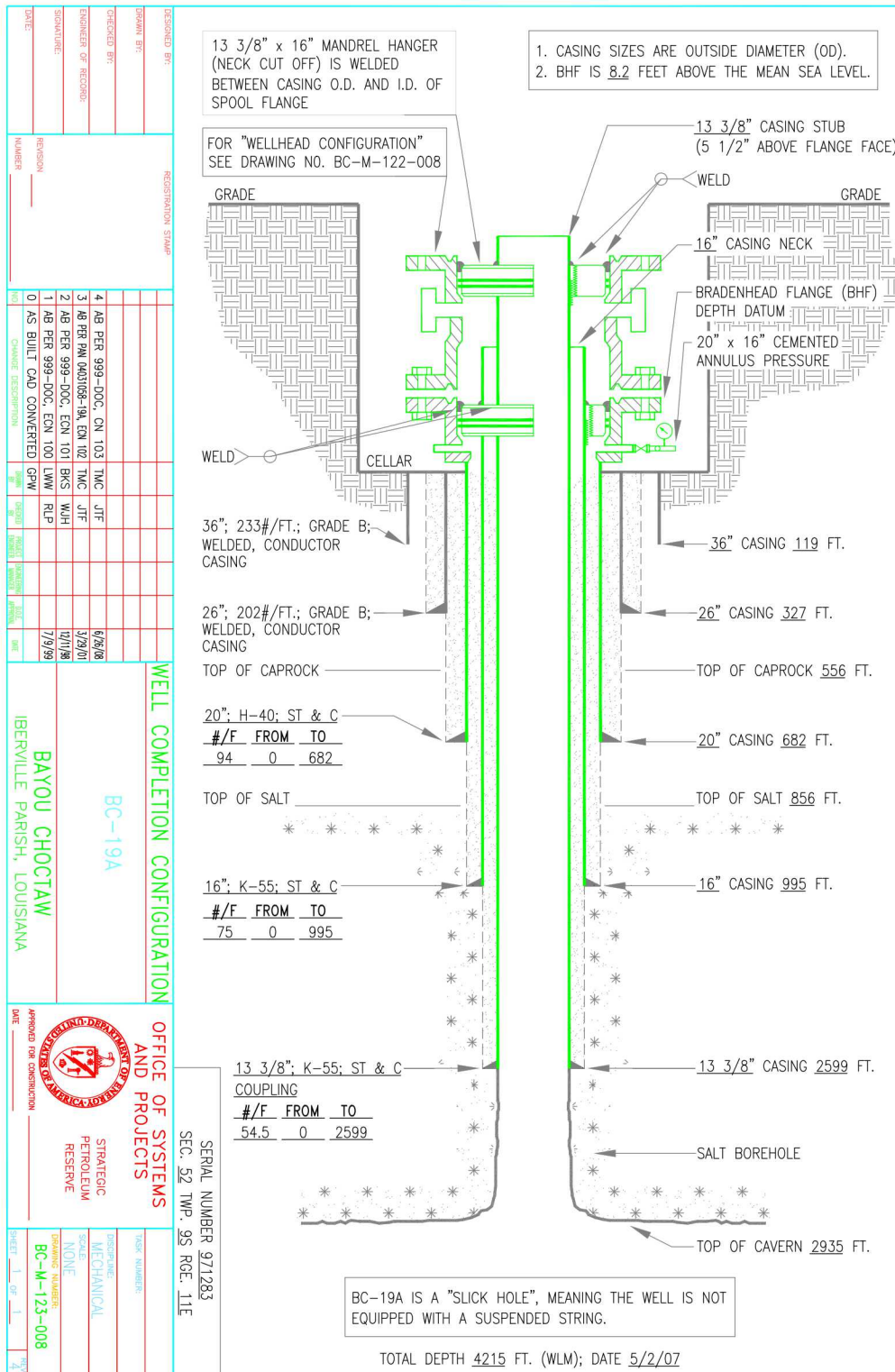
BC-M-123-006

SHEET 1 OF 1

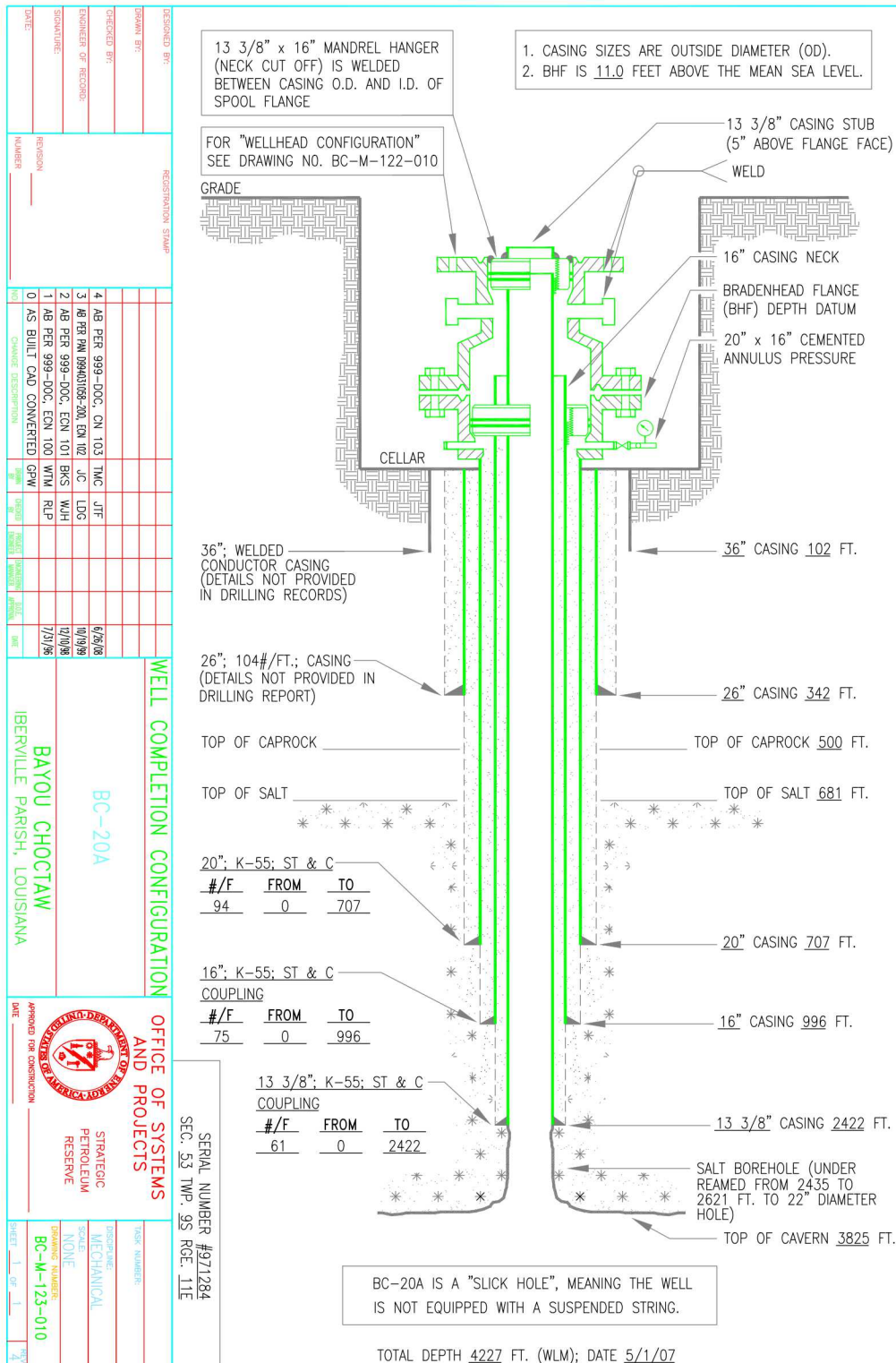
B.7. Bayou Choctaw 019



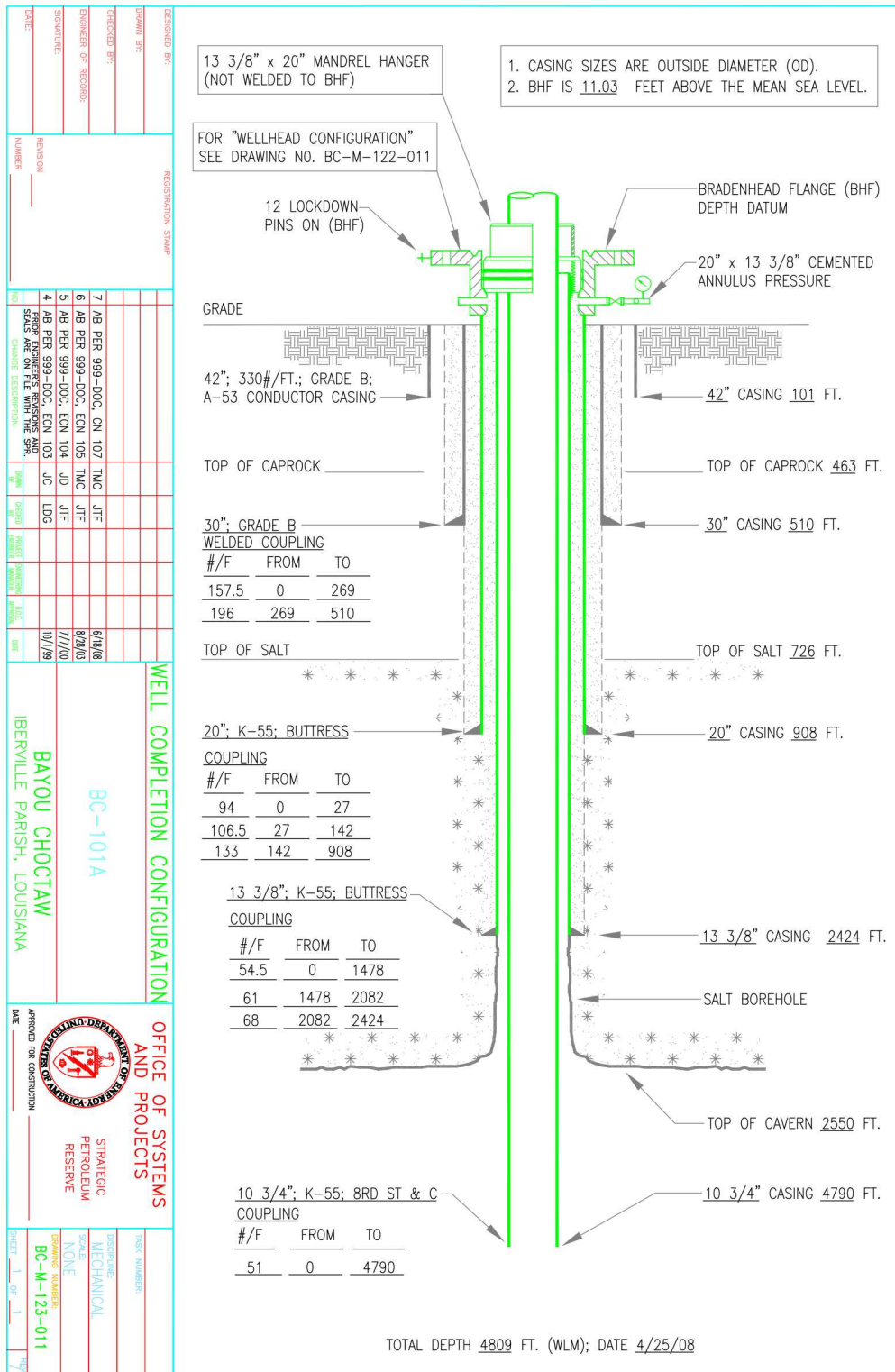
B.8. Bayou Choctaw 019A



B.9. Bayou Choctaw 020A



B.10. Bayou Choctaw 101A



13 3/8" x 20" MANDREL HANGER (NOT WELDED TO BHF)

FOR "WELLHEAD CONFIGURATION" SEE DRAWING NO. BC-M-122-012

12 LOCKDOWN PINS ON (BHF)

BRADENHEAD FLANGE (BHF) DEPTH DATUM

20" x 13 3/8" CEMENTED ANNULUS PRESSURE

GRADE

42"; 330#/FT.; GRADE B; A-53 CONDUCTOR CASING

42" CASING 106 FT.

TOP OF CAPROCK

TOP OF CAPROCK 463 FT.

30"; GRADE B; 157.5 #/FT. GRADE B WELDED COUPLING

30" CASING 499 FT.

TOP OF SALT

TOP OF SALT 726 FT.

20"; K-55; BUTTRESS COUPLING

20" CASING 981 FT.

#/F	FROM	TO
94	0	28
106.5	28	144
133	144	981

13 3/8"; K-55; BUTTRESS COUPLING

#/F	FROM	TO
54.5	0	1483
61	1483	2071
68	2071	2403

13 3/8" CASING 2403 FT.

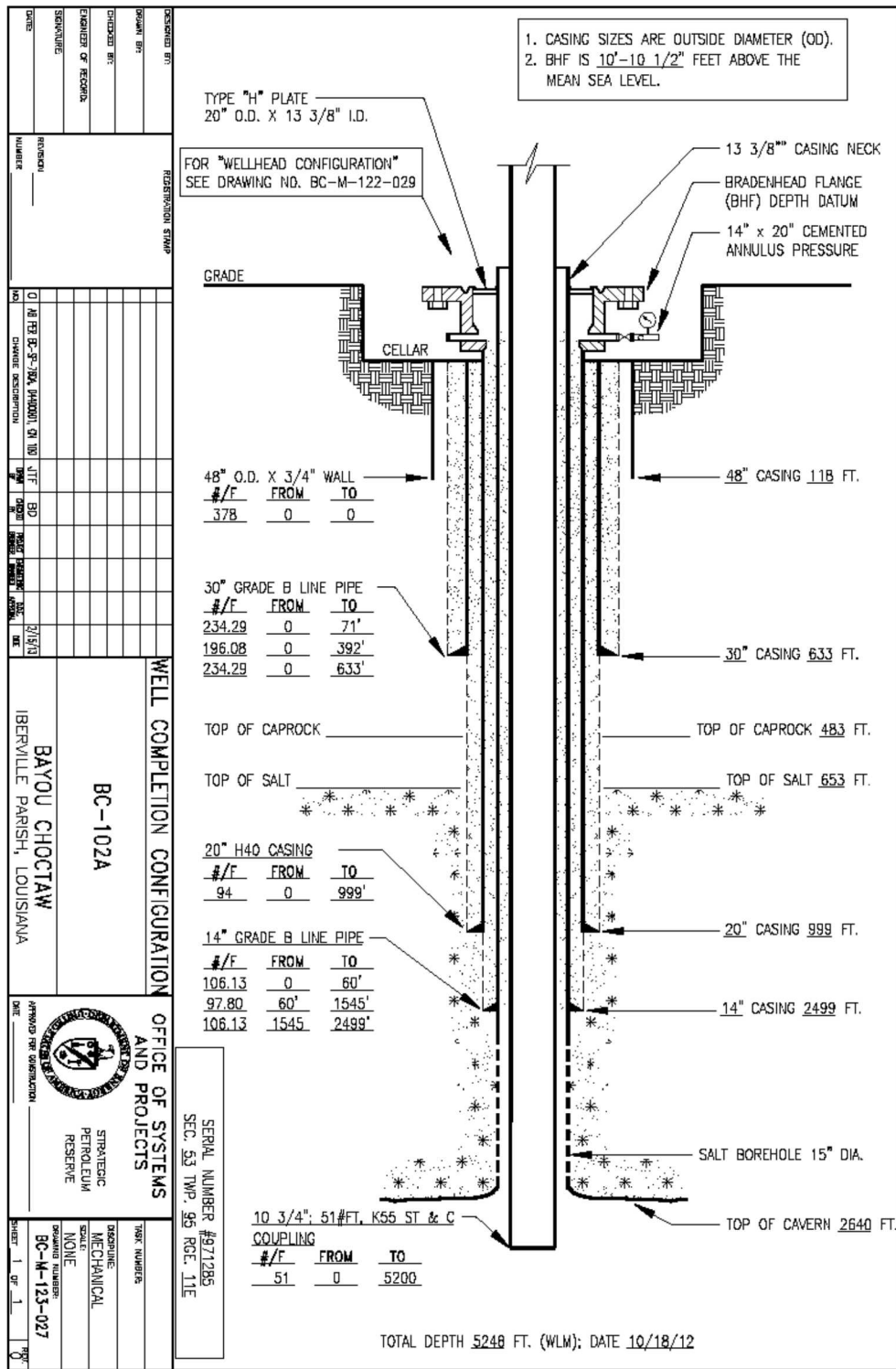
SALT BOREHOLE

TOP OF CAVERN 2550 FT.

NOTE
BB-101B IS A "SLICK HOLE", MEANING THE WELL IS NOT EQUIPPED WITH A SUSPENDED STRING.

TOTAL DEPTH 4816 FT. (LOG); DATE 5/3/07 (WLM)

B.12. Bayou Choctaw 102A



WELL COMPLETION CONFIGURATION

OFFICE OF SYSTEMS AND PROJECTS

STRATEGIC PETROLEUM RESERVE

APPROVED FOR CONSTRUCTION

DATE: 12/17/08

WELL NAME: BC-BDW-1

WELL NUMBER: BC-M-123-013

FOR "WELLHEAD CONFIGURATION" SEE DRAWING NO. BC-M-122-013

DESIGNED BY: [REDACTED]

CHECKED BY: [REDACTED]

ENGINEER OF RECORD: [REDACTED]

SIGNATURE: [REDACTED]

REVISION: [REDACTED]

DATE: [REDACTED]

BRADENHEAD FLANGE BHF DEPTH DATUM

20" CASING 100 FT. RKB 81 FT. BHF

13 3/8" CASING 1210 FT. RKB

2" SUSPENDED CASING 4329 FT.

#/F	FROM	TO
23 & 26	0	4329 BHF
23 & 26	0	4348 RKB

PERFORATED INTERVAL

4452 - 4488 FT. BHF 4471 - 4507 FT. RKB

4568 - 4606 FT. BHF 4487 - 4625 FT. RKB

DOWELL/SCHLUMBERGER MODEL 18 PERMANENT SUMP PACKER SET AT 4621 FT. BHF 4640 FT. RKB

9 5/8" x 7" DOWELL/SCHLUMBERGER MODEL 21 PACKER SET AT 4334 FT. BHF

TOP OF CEMENT PLUG AT 4806 FT. BHF (PBD)

CAST IRON BRIDGE PLUG SET AT 4854 FT. BHF

9 5/8" CEMENTED CASING 6681 FT. RKB

#/F	FROM	TO
43.5	0	1481 RKB
40	1481	3773 RKB
36	3773	6681 RKB

GRAVEL PACK SCREEN

SCREEN IS A 7" PREPACKED, GRAVEL PACK ASSEMBLY MADE BY DOWELL/SCHLUMBERGER.

BOTTOM OF SCREEN N/A FT.

TOP OF SCREEN N/A FT.

NOTES

- CASING SIZES ARE OUTSIDE DIAMETER (OD)
- RKB IS 19.0 FT ABOVE BHF.
- ALL DEPTHS ARE BHF MEASUREMENTS UNLESS OTHERWISE INDICATED

9 5/8" x 13 3/8" HANGER

FOR "WELLHEAD CONFIGURATION"
SEE DRAWING NO. **BC-M-122-019**

BRADENHEAD FLANGE BHF
DEPTH DATUM

20" CASING 107 FT. RKB

13 3/8" CASING 1412 FT. RKB

2" SUSPENDED CASING 4274 FT.

#/F	FROM	TO
26	0	1560
23	1560	4274

PERFORATED INTERVAL
4550 - 4668 FT. BHF
4565 - 4683 FT. RKB

DOWELL/SCHLUMBERGER MODEL 18
PERMANENT SUMP PACKER
SUMP PACKER SET AT 4685 FT.

9 5/8" CEMENTED CASING 6615 FT. BHF

#/F	FROM	TO
36	0	3550 BHF
43.5	3550	6615 BHF

GRAVEL PACK SCREEN
SCREEN IS A 2" PREPACKED, GRAVEL
PACK ASSEMBLY MADE BY DOWELL/
SCHLUMBERGER.
BOTTOM OF SCREEN N/A FT.
TOP OF SCREEN N/A FT.

9 5/8" x 7" DOWELL/SCHLUMBERGER
MODEL 21 PACKER SET AT 4266 FT.

TOP OF CEMENT PLUG
AT 6200 FEET (PBTD)

CAST IRON BRIDGE PLUG
SET AT 6340 FEET

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____
ENGINEER OF RECORD: _____
SIGNATURE: _____
DATE: _____

REGISTRATION STAMP

3 AB PER 899-DOC, CN 102
2 AB PER 899-D, EON 101
PACER ENGINEER'S REGIONS AND
SEALS ARE ON FILE WITH THE STATE

DATE: _____

WELL COMPLETION CONFIGURATION

BC-BDW-7

BAYOU CHOCTAW
IBERVILLE PARISH, LOUISIANA

OFFICE OF SYSTEMS
AND PROJECTS

STRATEGIC
PETROLEUM
RESERVE

SERIAL # 970375
TWN. 9S RGE. 11E SEC.62

NOTES

1. CASING SIZES ARE: OUTSIDE DIAMETER (OD)
2. RKB IS 15.0 FT ABOVE BHF.
3. ALL DEPTHS ARE BHF MEASUREMENTS UNLESS OTHERWISE INDICATED

ACAD FILENAME: 41730020

WELL COMPLETION CONFIGURATION

BC-BDW-10

BAYOU CHOCTAW

IBERVILLE PARISH, LOUISIANA

OFFICE OF SYSTEMS AND PROJECTS

STRATEGIC PETROLEUM RESERVE

NOTES

- CASING SIZES ARE OUTSIDE DIAMETER (OD)
- RKB IS 16.0 FT ABOVE BHF.
- ALL DEPTHS ARE BHF MEASUREMENTS UNLESS OTHERWISE INDICATED

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