

THE DELINEATION OF THE BURKEVILLE CONFINING UNIT AND THE BASE OF THE CHICOT AQUIFER TO SUPPORT THE DEVELOPMENT OF THE GULF 2023 GROUNDWATER MODEL

Prepared for:



Harris-Galveston Subsidence District



Fort Bend Subsidence District

Prepared by:



October 2020

THE DELINEATION OF THE BURKEVILLE CONFINING UNIT AND THE BASE OF THE CHICOT AQUIFER TO SUPPORT THE DEVELOPMENT OF THE GULF 2023 GROUNDWATER MODEL

Prepared By

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Cody Draper

INTERA Incorporated

October 2020



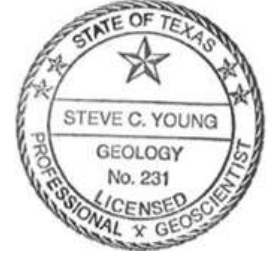
GEOSCIENTIST AND ENGINEERING SEAL

Steve Young was the Principal Investigator for this study. All work performed was under the direct supervision of Steven C. Young (P.G. 231). It is not to be used for construction, bidding or any other purposes not specifically sanctioned by the authors.

Signature

10/14/2020

Date





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ACROYNMS AND ABBREVIATIONS

%	percent
API	American Petroleum Institute
FBSD	Fort Bend Subsidence District
GBDS	Gulf Basin Depositional Synthesis Project
GCD	Groundwater Conservation District
HAGM	Houston Area Groundwater Model
HGSD	Harris-Galveston Subsidence District
INTERA	INTERA Incorporated
NAD	North American Datum
PWS	Public Water Supply
TCEQ	Texas Commission on Environmental Quality
TWDB	Texas Water Development Board
USGS	United States Geological Survey

1.0 INTRODUCTION

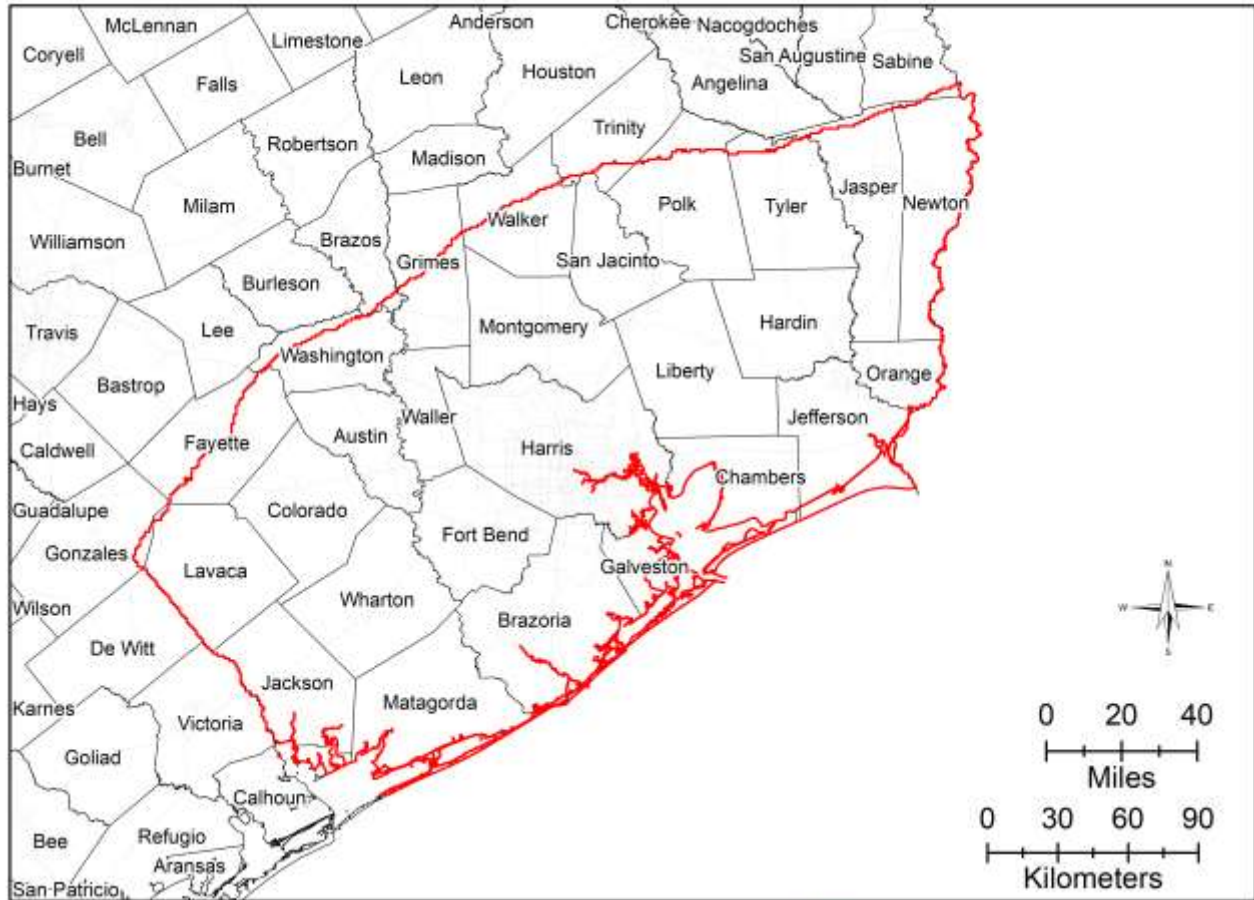
The availability of groundwater for municipal, industrial, and agricultural uses, as well as the potential subsidence associated with groundwater use, have been of concern in the Houston, Texas area and northern part of the Texas Gulf Coast for nearly a century. In partnership with multiple groundwater conservation districts (GCDs), the Harris-Galveston Subsidence District (HGSD), the Fort Bend Subsidence District (FBSD), and the Texas Water Development Board (TWDB), the U.S. Geological Survey (USGS) developed a groundwater-flow model (Kasmarek and Robinson, 2004), and a subsequent update (Houston Area Groundwater Model [HAGM]) (Kasmarek, 2012). Recent advances in numerical modeling, availability of new hydrogeologic data in the region, and recent advances in tools and techniques to assimilate these data effectively necessitate an update to the HAGM to incorporate the updated information and prepare for predictive simulations required for regional water planning.

In cooperation with the HGSD and the FBSD and in coordination with the TWDB, USGS is in the process of updating the HAGM. The updated model will be named the GULF 2023 model. **Figure 1-1** shows the aerial footprint of footprint of the GULF 2023 model.




This report provides updates to the contacts between the Chicot and Evangeline aquifers; the Evangeline Aquifer and the Burkeville Confining Unit, and Burkeville Confining Unit and the Jasper Aquifer for the Gulf Coast Aquifer System developed by Young and others (2012). The updates have been developed to support the development of the GULF 2023 model. The work was performed by INTERA for the HGSD under Professional Services Agreement (Contract No. PSA 2019-014) and Work Order Number (2019-014-013).

The report's technical discussion consists of three main sections. The first section presents a general overview of the stratigraphy of the Texas Gulf Coast Aquifer system. The second section describes the data and methods used to update the contacts the Burkeville Confining Unit with the Evangeline and the Jasper aquifers. The third section describes the data and methods used to update the contacts between the Chicot and Evangeline aquifers.

The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model



Legend

-  GULF 2023 Model Boundary
-  County
-  Texas DOT Highway System

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Figure 1-1 Boundary for the GULF 2023 Groundwater Model



2.0 HYDROGEOLOGIC SETTING

This section provides a general overview of the stratigraphy of the Gulf Coast Aquifer System.

2.1 Texas Gulf Coast

The Texas Gulf Coast borders the Gulf of Mexico, which is a small, semi-enclosed ocean basin surrounded by continental shelves and coastal plains (Bryant and others, 1991). The northwest portion of the Gulf of Mexico includes the major sand and sandstone aquifer systems that include the Texas Gulf Coast Aquifer System (Williamson and Grubb, 2001; Chowdhury and Turco, 2006). As shown in **Figure 2-1**, the Gulf Coast Aquifer System can be described using five hydrogeologic units: (1) the Chicot Aquifer, (2) the Evangeline Aquifer, (3) the Burkeville Confining System, (4) the Jasper Aquifer, and (5) the Catahoula Confining System. (Baker, 1979; Kasmarek, 2012). Both the HAGM (Kasmarek, 2012) and the Gulf 2023 consist of four model layers that represent the Chicot Aquifer, the Evangeline Aquifer, the Burkeville Confining Unit, and the Jasper Aquifer.

Figure 2-1 also shows the geologic units used by Young and others (2010, 2012) to comprise the equivalent Gulf Coast Aquifer hydrogeologic units. The Chicot Aquifer is comprised of the Beaumont, Lissie, and Willis formations. The Evangeline Aquifer is comprised of the Upper and Lower Goliad formations and portions of the Upper Lagarto Formation. The Burkeville Confining Unit is primarily comprised of the Middle Lagarto formation but also includes portions of the Upper and Lower Lagarto formations. The Jasper Aquifer is comprised of the Oakville formation but also portions the Lower Lagarto formation and the Catahoula formation.

2.2 Stratigraphy

This study uses the Gulf Coast Aquifer System stratigraphy developed recently by the TWDB (Young and others, 2010, 2012). TWDB based their stratigraphic correlation approach on the correlation and sequence stratigraphic concepts used by Gulf Basin Depositional Synthesis Project (Galloway, 1989; Galloway and others, 2000; Galloway, 2005) and the Lower Colorado River Authority-San Antonio Water System Water Project (Knox and others, 2006; Young and Kelly, 2006; Young and others, 2009). The common correlation approach among these studies is that chronostratigraphic, rather than lithostratigraphic. In chronostratigraphy, correlations are used to identify clay-dominated flooding surfaces, which represent deposition during a relative sea-level maximum, to represent boundaries between depositional episodes that deposit the aquifers.

Prior to the chronostratigraphic correlations identified by Young and others (2010, 2012), the stratigraphic framework of the Gulf Coast Aquifer System (Strom and others, 2003a, 2003b, 2003b) was based on lithostratigraphic correlation. Lithostratigraphic correlation relies on generating correlations using boundaries between different lithologies (clay and sand, for example). The aquifer surfaces used to develop the HAGM (Kasmarek, 2012) are principally based on stratigraphic frameworks developed by Baker (1979), who used lithostratigraphic correlation combined with a good understanding of geologic processes.

Figure 2-2 shows a hypothetical cross-section consisting of four geophysical logs from boreholes that intersect multiple sand and clay units, which were each deposited by two types of depositional environments, fluvial and marine. Figure 2-2a and 2-2b show that correlations based on chronostratigraphic or lithostratigraphic approaches will produce different results for grouping sand and clay units. In this example, the lithostratigraphic correlations overestimate the continuity among the sand units across the four boreholes. The accepted and widespread use of chronostratigraphic correlations in oil and gas exploration is a result of the advent of a branch of geoscience called sequence stratigraphy, which has shown that lithostratigraphic



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correlations are more apt to mischaracterize the continuity and size of a formation than are chronostratigraphic correlations.

ERA	Epoch		Est. Age (M.Y)	Geologic Unit	Hydrogeologic Unit
Cenozoic	Pleistocene		0.7	Beaumont	CHICOT AQUIFER
			1.6	Lissie	
			Pliocene		
	Miocene	Late	11.2	Upper Goliad	EVANGELINE AQUIFER
			14.5	Lower Goliad	
			17.8	Upper Lagarto	
		Middle		Middle Lagarto	
		Early		Lower Lagarto	
		Oligocene		24.2	Oakville
	32			Frio	CATAHOULA
			34	Vicksburg	

Figure 2-1 Geologic and hydrogeologic units of the Gulf Coast Aquifer System (modified from Baker, 1979)

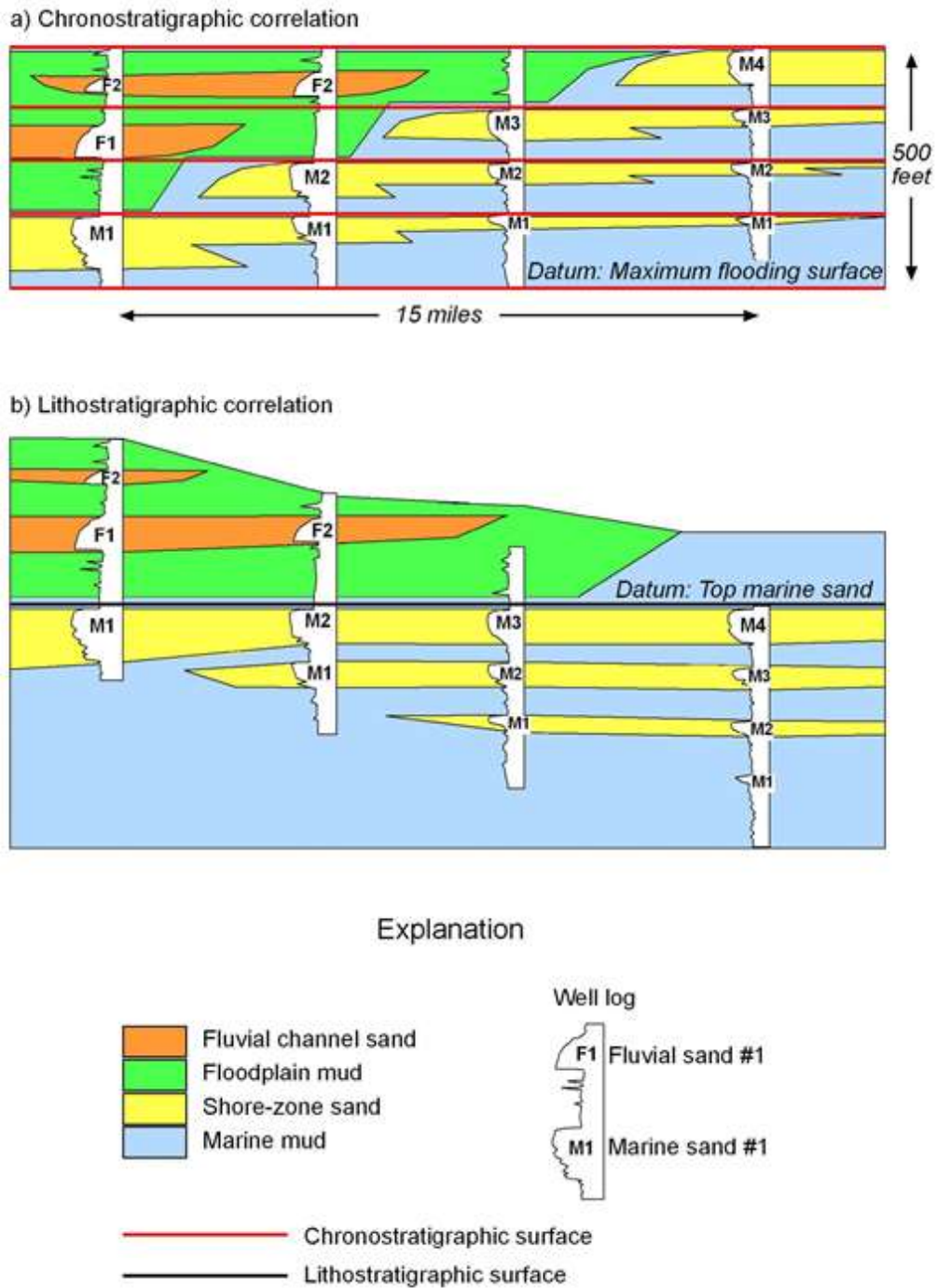


Figure 2-2 Schematic cross section comparing (a) chronostratigraphic correlation to (b) lithostratigraphic correlation. Identical (hypothetical) well logs are used in both sections, but their vertical positions are shifted to line up correlated sands. Sands are numbered to show the correct correlations. Using lithostratigraphic correlation, the top of the thickest marine sand is incorrectly assumed to be a continuous surface, whereas chronostratigraphic correlation uses marine flooding surfaces in a progradational context to correctly correlate the sands. Modified from Van Wagoner and others (1990).



3.0 TOP AND BOTTOM SURFACES FOR THE BURKEVILLE CONFINING UNIT

This section discusses the development of a Burkeville Confining Unit for Gulf 2023 model. The updated Burkeville Confining Unit consists primarily of the clay-rich deposits comprising the Upper, Middle, and Lower Lagarto formations delineated by Young and others (2010, 2012).

3.1 Technical Approach

In the HAGM (Kasmarek, 2012), the Burkeville Confining Unit is defined based on the work of Baker (1979). Baker (1979) defines the Burkeville independently of time and primarily on the location where a clay rich deposit “separates the Jasper and Evangeline aquifers and serves to retard the interchange of water between the two aquifers” (page 40). In documenting his construction of the Burkeville Confining Unit, Baker (1979) states:

“The Burkeville has been mapped in this report as a rock-stratigraphic unit consisting predominantly of silt and clay. Boundaries were determined independently from time concepts although in some places the unit appears to possess approximately isochronous boundaries. In most places this is not the case. For example, the entire thickness of sediment in the Burkeville confining system in some areas is younger than the entire thickness of sediment in the Burkeville in the other places. The configuration of the unit is highly irregular. Boundaries are not restricted to a single stratigraphic unit but transgress the Flemming [Lagarto]-Oakville contact in many places.” (page 40, Baker, 1979)

Because the Burkeville unit defined by Baker (1979) is a lithostratigraphic unit that is not bounded by isochronous boundaries and exists across the Upper, Middle, and Lower the Lagarto formations, it cannot be accurately represented by any single chronostratigraphic formation defined by Young and others (2010, 2012). To create a “lithostratigraphic-based” Burkeville Unit from the clays and sand sequences generated by Young and others (2010, 2012), we correlated the sand and clay sequences in the Upper, Middle, and Lower Lagarto formations based on a lithostratigraphic approach. This approach provides a practical integration of the lithostratigraphic and chronostratigraphic approaches to represent the conceptualization by Baker (1979) of the Burkeville Confining Unit.

3.2 Geophysical Logs

Figure 3-1 shows the 834 geophysical logs used that were used to define the Burkeville Confining Unit for this study. These 834 geophysical logs are listed in **Table A-1** in **Appendix A**. Table A-1 provides an information summary for each log including its American Petroleum Institute (API) number, its easting and northing locations based on a North American Datum (NAD) 1983 State Plane Texas South Central projection, and whether it has picks (determined location of lithologic transitions in the log associated with specific geologic or hydrogeologic units) for sands and clay intervals. Table A-1 also provides the elevations for the picks representing the top or bottom elevation of the Burkeville Confining Unit,

The 834 logs were assembled from the following studies performed by INTERA Incorporated (INTERA):

- A TWDB-funded study to define the stratigraphy and lithology of the Gulf Coast Aquifer from the Brazos River to the Rio Grande (Young and others, 2010)
- A TWDB-funded study to define the stratigraphy and lithology for the Northern of the Gulf Coast Aquifer (Young and others, 2012)

- A TWDB-funded study to identify potential brackish groundwater production areas of the Gulf Coast Aquifer (Young and others, 2016)
- A Lone Star Groundwater Conservation District-funded study to characterize the Catahoula and Jasper aquifers (unpublished report by INTERA and LBG Guyton, (2012)
- A study jointly funded by the HSGD and FBSD study to define the brackish groundwater resources of the subsidence districts (Young and others, 2017)

Geophysical log interpretations were performed using the software PETRA (IHS, 2009). PETRA is a commercial software that is designed to facilitate the interpretation and management of geophysical logs. All of the picks used to identify sand and clay intervals were performed at 1-foot intervals or less. For this study, only picks of sand and clay intervals from previous studies were used. No additional sand or clay picks were made a part of this study.

3.3 Construction of the Burkeville Confining Unit

The top and bottom surfaces for the Burkeville Confining Unit were constructed using a two-step process. The first step involved creating vertical cross-section along the 28 dip-oriented transects in Figure 3-1. The dip sections were numbered from the southwest (1) to the northeast (28). Each cross-section included logs that are located within a 2.5 mile buffer of the cross-section. The number of logs associated with the cross sections averages 24 logs.

Table A-1 in Appendix A lists which logs are associated with each of the 28 dip-sections and 3 strike sections. For each dip section, a top and bottom surface for the Burkeville Confining Surface was constructed starting at the outcrop and ending a few miles past the coastline. Strike sections were built following dip section construction using a similar workflow. To guide the construction of the Burkeville surfaces, every log was marked to show the Upper, Middle, and Lower Lagarto surfaces and sands and clay dominated intervals. The Burkeville Confining Unit was picked as a thick zone of clay-rich deposits within the Lagarto Formation that exemplified the Baker’s (1979) definition of the Burkeville Confining Unit.

The second step in constructing the Burkeville surfaces involved extracting points from the upper and lower surfaces along the 28 transects to create a grid of closely spaced points that were then interpolated to create a continuous surface for the Burkeville Confining Unit. **Figures 3-2 and 3-3** show the top and the bottom surfaces of the Burkeville Confining Unit generated by interpolating the points from the dip cross-sections using the least-squares interpolation in PETRA. **Figure 3-4** shows the thickness of the Burkeville Confining Unit generated as part of this study. The thickness of the Burkeville Confining Unit generally increases in the down-dip direction from the outcrop, where it is typically less than 150 feet, to offshore, where it exceeds 1,000 feet.

Figure 3-5 shows the clay fraction of the Burkeville Confining Unit calculated from about 450 logs with sand-clay picks. The highest clay fractions occur in the southwest in the vicinity of Wharton, Matagorda, and Jackson counties. Across these three counties, the clay fraction is usually greater than 0.8. The lowest clay fractions occur in the northeast in the vicinity of Jasper, Newton, and Orange counties. Across these three counties, the clay fraction is usually less than 0.3. Other regions of low clay fraction occur sporadically along an approximately 10-mile wide strip at the most up-dip region of the Burkeville Confining Unit where the clay fraction is less than 0.4. These regions of low clay fraction occur in Lavaca, Washington, Grimes, Montgomery, Tyler, and Newton counties.

Besides clay fraction, another important attribute of the Burkeville Confining Unit is the total thickness of clay, shown in **Figure 3-6**. Figure 3-6 shows that, except for near the outcrop and in Jasper County, the Burkeville

Confining Unit is characterized by total clay thickness in excess of 200 feet. The observation of higher sand proportion in Jasper County agrees with the dip cross-sections of Baker (1979), which shows areas in Jasper County with higher sand content. At some locations, the potential exists for the Burkeville to produce fresh water. The occurrence of sandy deposits containing useable groundwater in the Burkeville Confining Unit is consistent with the descriptions provided by Baker (1979). Baker (1979) states:

“The Burkeville confining system should not be construed as a rock unit that is composed entirely of silt and clay... In many places, the Burkeville is composed of many individual sand layers, which contain fresh to slightly saline water; but because of its relatively large percentage of silt and clay when compared to the underlying Jasper aquifer and overlying Evangeline, the Burkeville functions as a confining unit” (pg. 40)

Understanding where major production wells have portions of their well screens located in the Burkeville Confining Unit offers a potentially important consideration for assessing how to define and model the Burkeville Confining Unit. To help investigate this concern, the well screen intervals of 6,969 Public Water Supply (PWS) wells, whose locations are shown in **Figure 3-7**, were compared to thickness of the Burkeville Confining Unit developed for this study. The PWS information was obtained from the Texas Commission of Environmental Quality (TCEQ) PWS database. For each of the PWS wells in Figure 3-7, the fraction of the total well screen length that occurs in the Burkeville was calculated and expressed as a percent of well screen in **Figure 3-8**. Figure 3-8 shows the locations of 81 PWS wells that have more than 30 percent (%) of their screened interval in the Burkeville Confining Unit. Out of these 81 PWS wells, 43 of the PWS wells have more than 80% of their screened interval in the Burkeville Confining Unit. Percentages above 80% at the location of the 43 PWS wells indicate that the Burkeville Confining Unit contains several productive layers of sand. As will be shown later in the report, there are regions in the Burkeville Confining Unit where the sand percentage is greater than 50%.

3.4 Comparison to Burkeville Confining Unit Used in HAGM

The Burkeville Confining Unit for the HAGM was constructed with the elevations used to define the top and bottom surfaces in the groundwater models files for the HAGM (Kasmarek, 2012). Among differences between thickness for the HAGM Burkeville Confining Unit and the Burkeville Confining Unit developed by this study are:

- The Burkeville developed for this study covers about twice the area of the Northern Gulf Coast Aquifer than does the HAGM Burkeville. Whereas Burkeville developed for this study extends to about 20 miles offshore, the HAGM Burkeville coverage stops approximately 60 miles from the coastline.
- The Burkeville developed for this study has contours of thickness that are smoother and more regular than do the contours of thickness for the HAGM Burkeville.
- Whereas the thickness map for the Burkeville developed for this study is characterized as gradually thickening in the down dip direction, the thickness map for the HAGM Burkeville is characterized by localized thin and thick zones.

Figures 3-9 and **3-10** show the differences between the top of the HAGM Burkeville and Burkeville developed in this study and the bottom of the HAGM Burkeville and the Burkeville developed in this study. Positive values indicate that the HAGM surface is above the surface created by this study. For most of the study area, the difference between the two surfaces is less than 500 feet.

Figure 3-11 shows the locations of the 199 PWS wells that have more than 30% of their well screen interval located in the HAGM Burkeville Confining Unit. Out of the 199 PWS wells, 137 of the PWS wells have more than

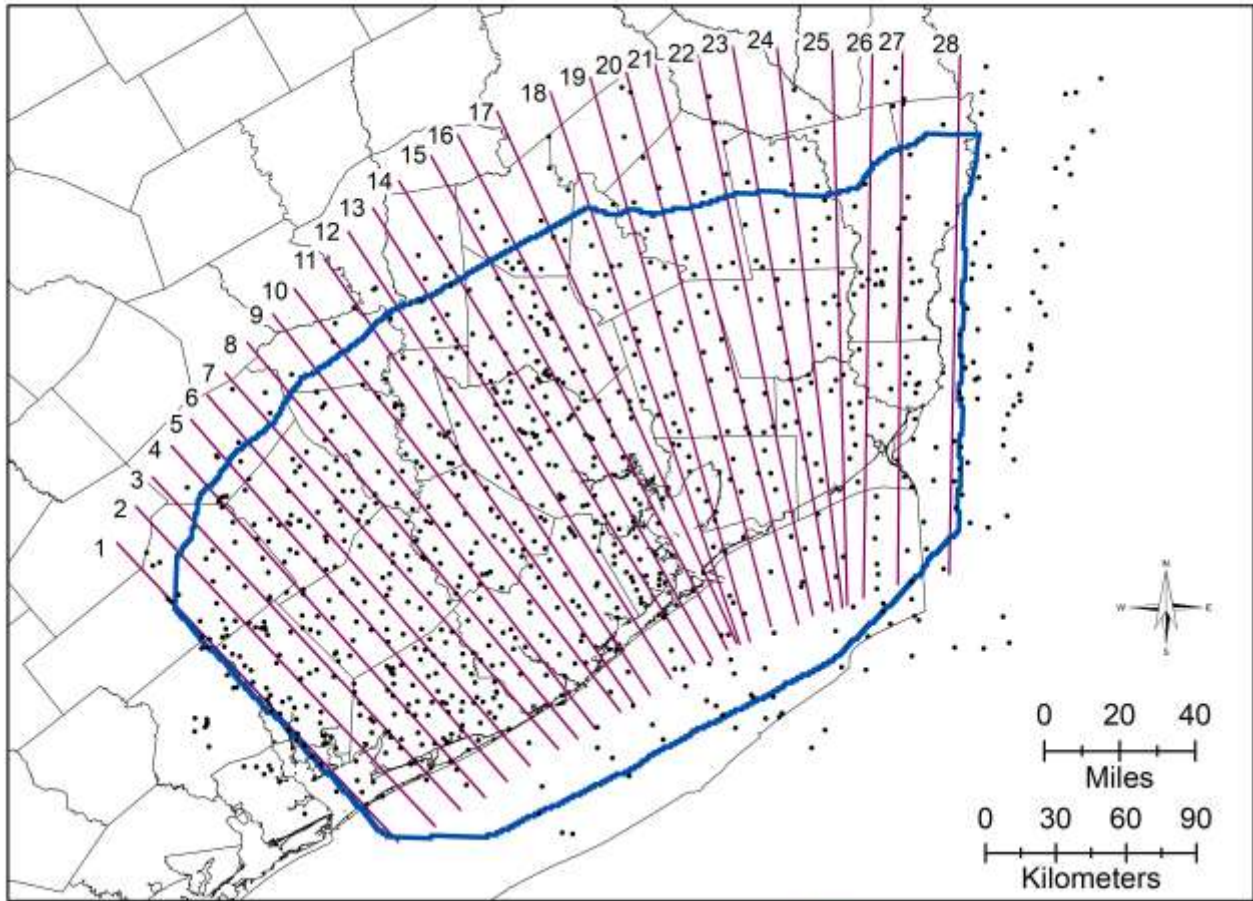


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80 percent (%) of their screened interval in the HAGM Burkeville Confining Unit. **Table 3-1** compares the differences in the number of PWS wells whose screened intervals intersect the Burkeville Confining Unit developed by this study or the HAGM Burkeville Confining Unit. The results in Table 3-1 show that considerably fewer PWS Wells have their screen intervals intersecting the Burkeville Confining Unit developed by this study than with the HAGM Burkeville Confining Unit.

Table 3-1 Percentage of screen interval associated with PWS wells that overlaps with the HAGM Burkeville Confining Unit and the Burkeville Confining Unit developed by this Study

Percentage of the Well Screen Interval that Overlaps with Burkeville	Number of PWS Wells	
	Burkeville developed in this Study	HAGM Burkeville
30% - 40%	16	18
40% - 50%	9	19
50% - 60%	4	12
60% - 70%	4	9
70% - 80%	3	4
80% - 90%	4	8
90%- 100%	34	129
Total	74	199



Cross Section Lines

Legend

- Logs used for Burkeville top or bottom
- Burkeville Extent
- Cross Section Lines
- County Boundary

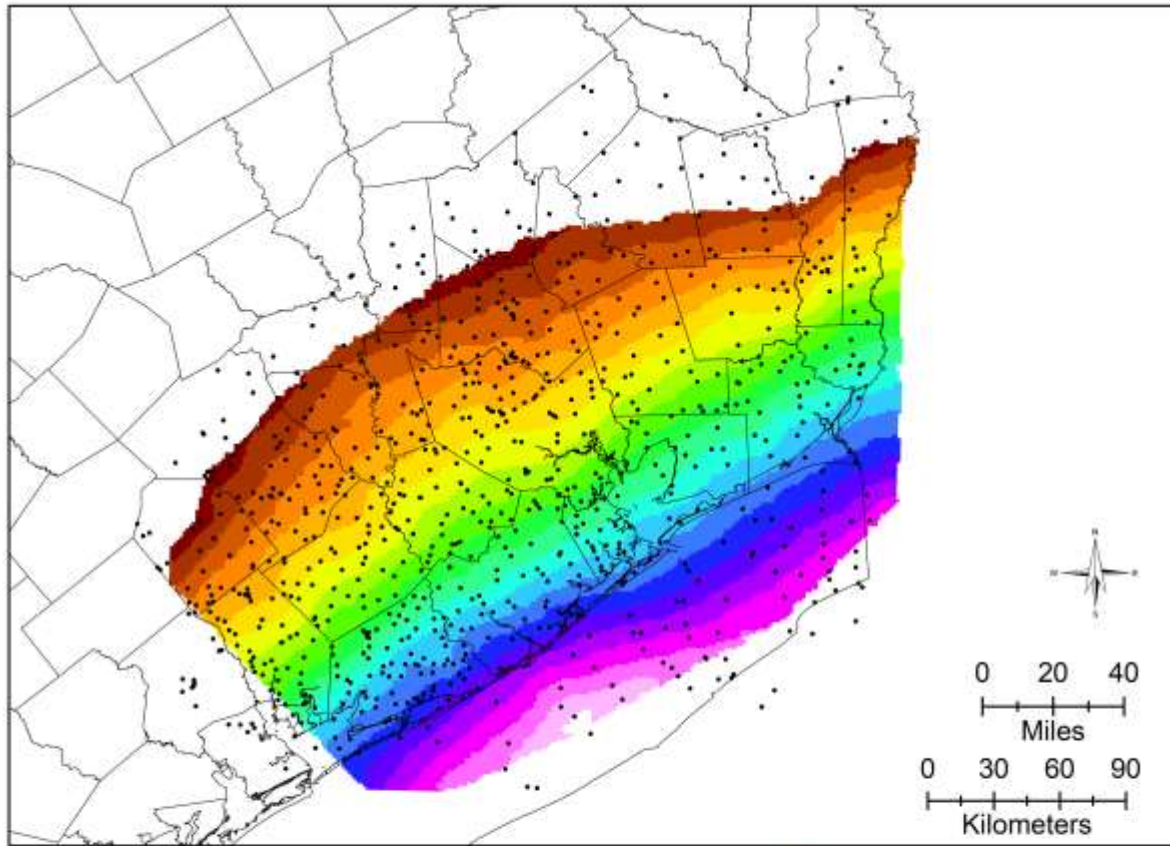


HARRIS-GALVESTON
SUBSIDENCE
DISTRICT

Prepared by:
INTERA
GEOLOGICAL & ENGINEERING SOLUTIONS

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Figure 3-1 Location of geophysical logs used to identify the top and bottom of the Burkeville Confining Unit defined for this study



Top Burkeville

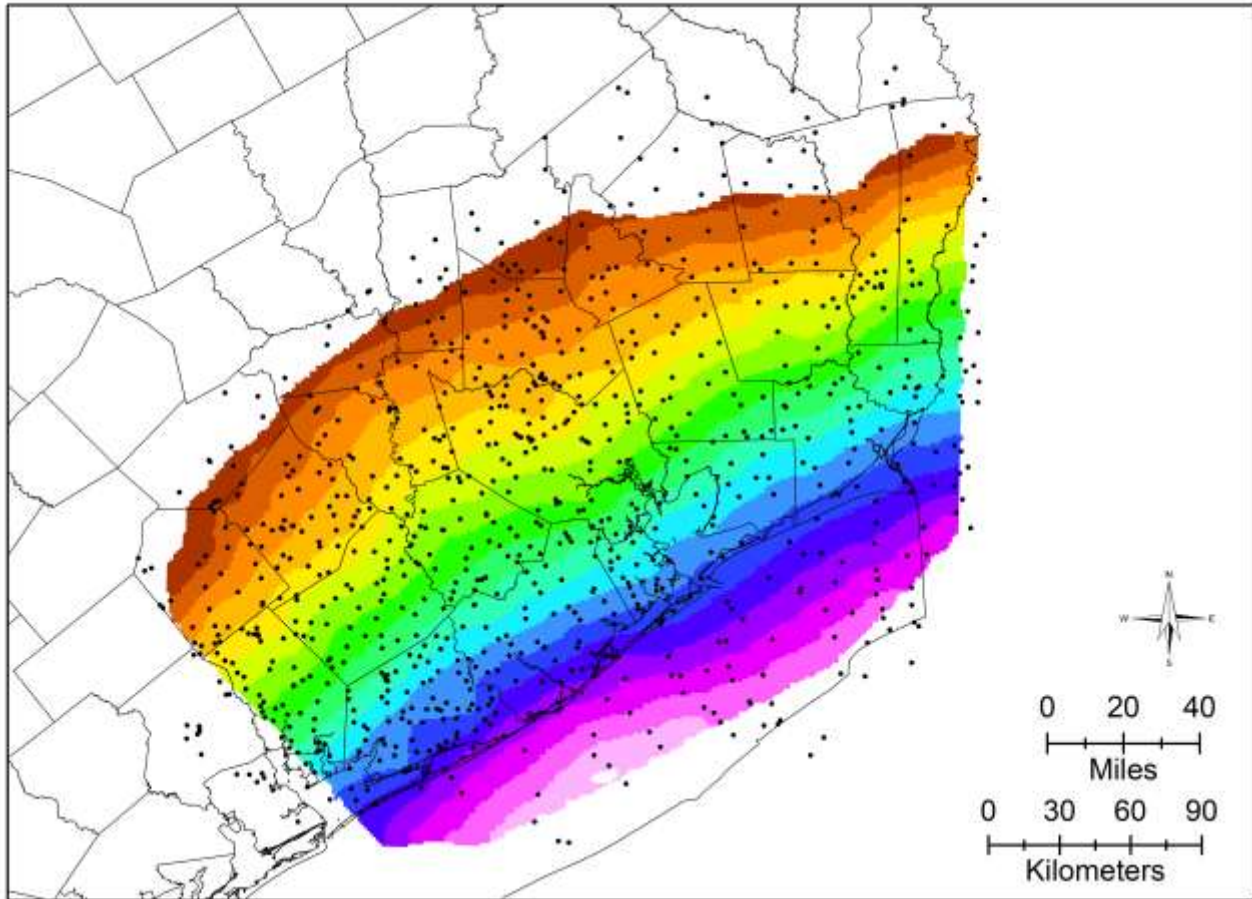
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• Log			
□ County Boundary			
Top Burkeville (ft.msl)			
0 - 400	-1,200 - -800	-4,000 - -3,600	-6,800 - -6,400
-400 - 0	-1,600 - -1,200	-4,400 - -4,000	-7,200 - -6,800
-800 - -400	-2,000 - -1,600	-4,800 - -4,400	-7,600 - -7,200
	-2,400 - -2,000	-5,200 - -4,800	-8,000 - -7,600
	-2,800 - -2,400	-5,600 - -5,200	
	-3,200 - -2,800	-6,000 - -5,600	
	-3,600 - -3,200	-6,400 - -6,000	



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Figure 3-2 Elevation of the surface defining the top of Burkeville Confining Unit developed by this Study



Bottom Burkeville

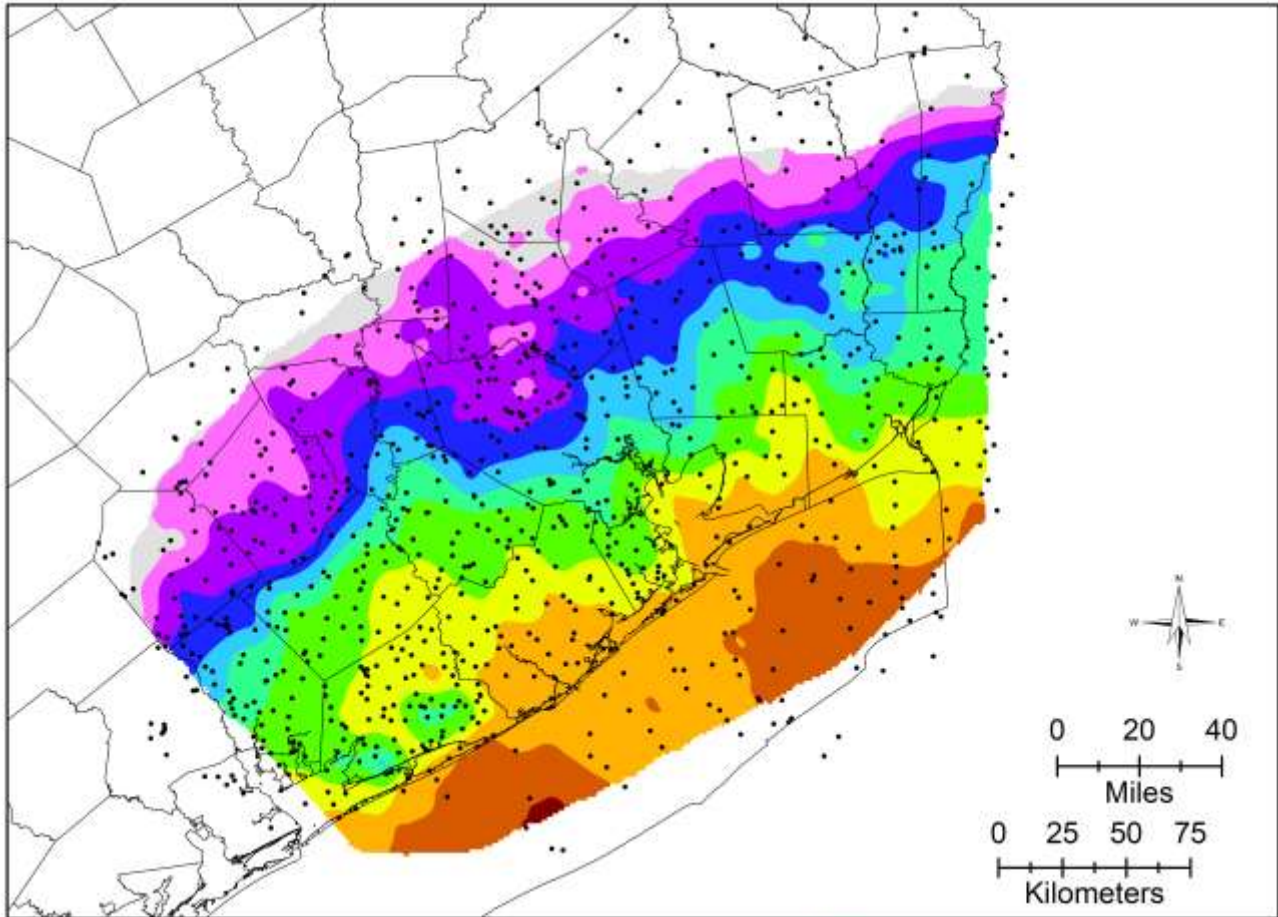
Legend

• Log	-1,999 -- -1,500	-5,999 -- -5,500
County Boundary	-2,499 -- -2,000	-6,499 -- -6,000
Bottom Burkeville (ft,msl)	-2,999 -- -2,500	-6,999 -- -6,500
501 - 1,000	-3,499 -- -3,000	-7,499 -- -7,000
1 - 500	-3,999 -- -3,500	-7,999 -- -7,500
-499 - 0	-4,499 -- -4,000	-8,499 -- -8,000
-999 - -500	-4,999 -- -4,500	-8,523 -- -8,500
-1,499 -- -1,000	-5,499 -- -5,000	



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Figure 3-3 Elevation of the surface defining the bottom of Burkeville Confining Unit developed by this Study



Burkeville Thickness

Legend

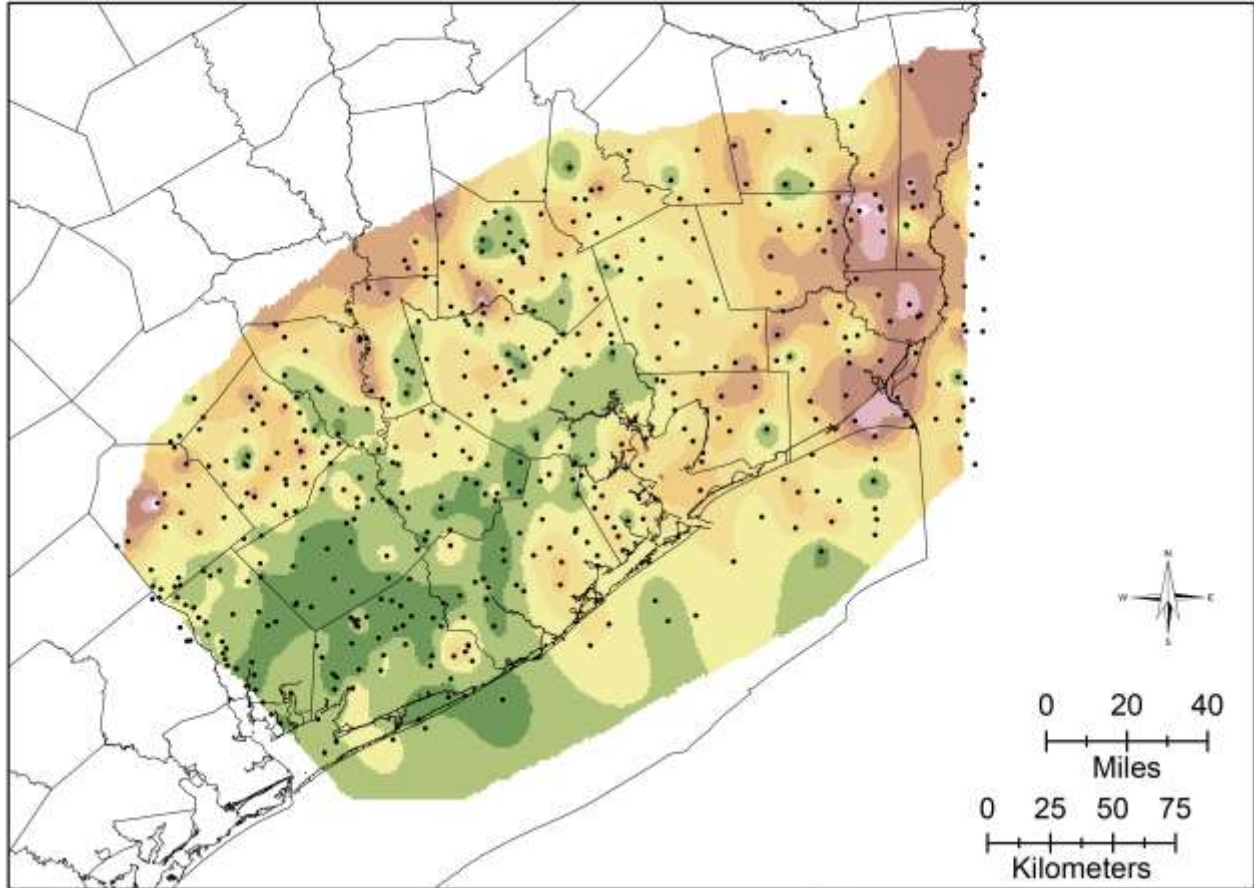
- Log
- County Boundary
- Burkeville Thickness (ft)**
- 10 - 100
- 101 - 200
- 201 - 300
- 301 - 400
- 401 - 500
- 501 - 600
- 601 - 700
- 701 - 800
- 801 - 900
- 901 - 1,000
- 1,001 - 1,100



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Figure 3-4 Thickness (ft) of the Burkeville Confining Unit developed by this Study

507 Logs with Burkeville Top or Bottom



Clay Fraction

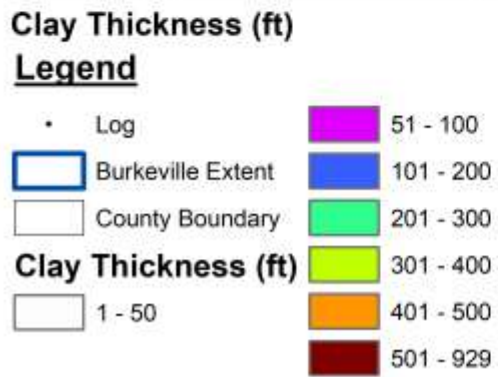
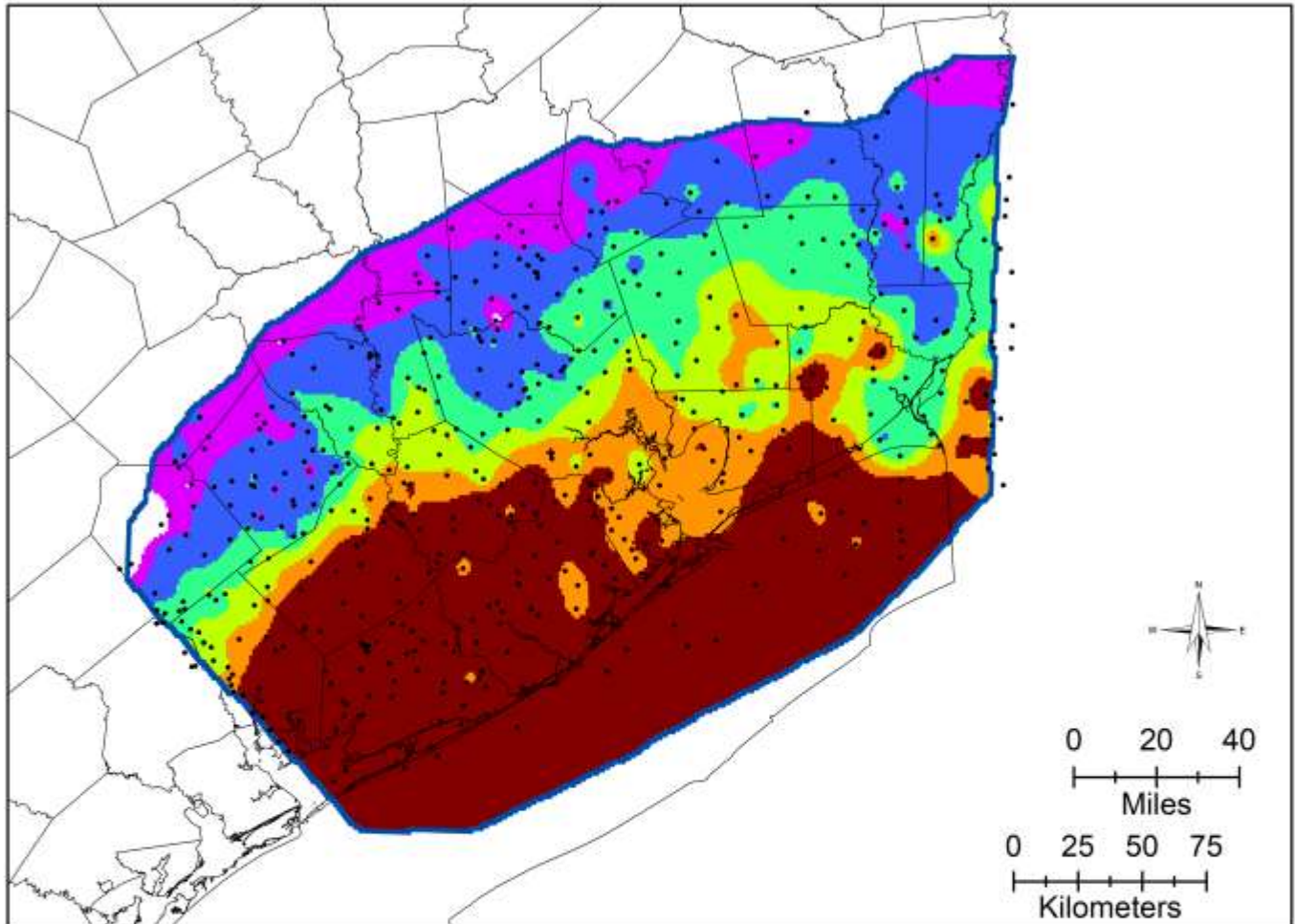
Legend

• Log		0.7 - 0.6
County Boundary		0.6 - 0.5
Clay Fraction		0.5 - 0.4
		0.4 - 0.3
		0.3 - 0.2
		0.2 - 0.1



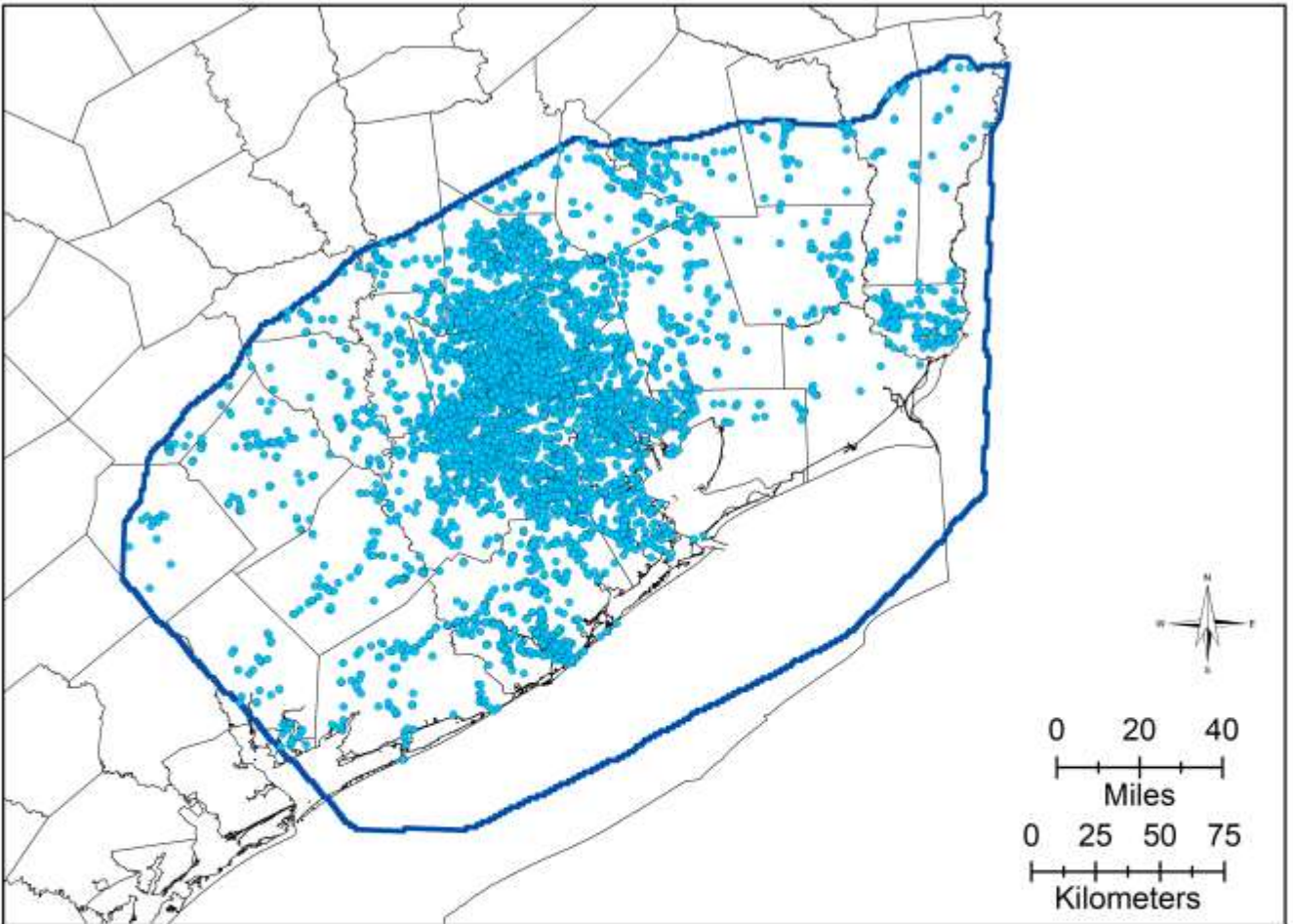
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Figure 3-5 Clay fraction of the Burkeville Confining Unit developed by this Study



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Figure 3-6 Total clay thickness that comprises Burkeville Confining Unit developed by this Study



Public Water Supply Wells

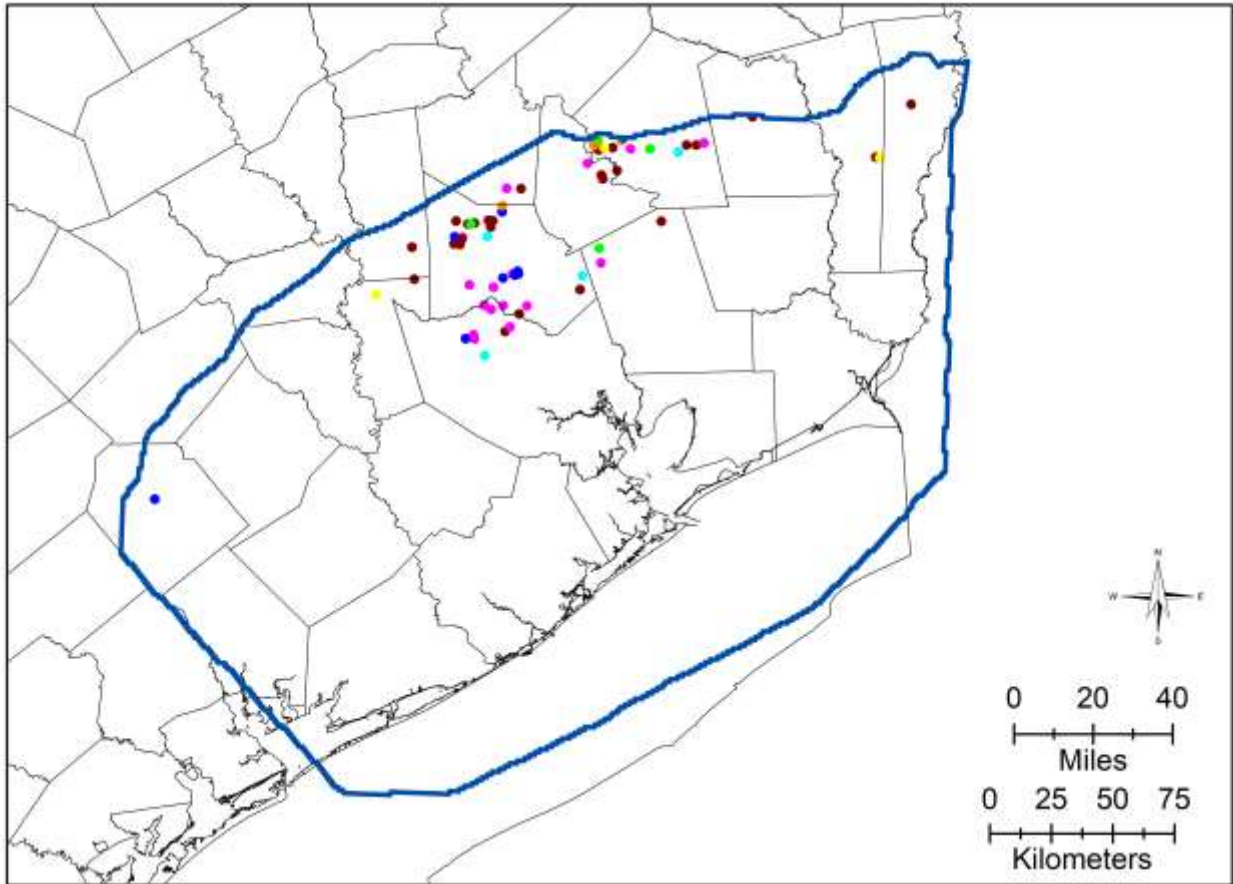
Legend

- PWS within Burkeville Extent (6,969)
- ▭ Burkeville Extent
- ▭ County Boundary



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Figure 3-7 Location of 1,600 Public Water Supply Wells whose well screen intersects the Burkeville Confining Unit developed by this Study



Public Water Supply wells with more than 30% of screen intersecting the Burkeville

Legend

- Burkeville Extent
- County Boundary

Screen % in Burkeville

- 30% - 40% (16)
- 40% - 50% (9)

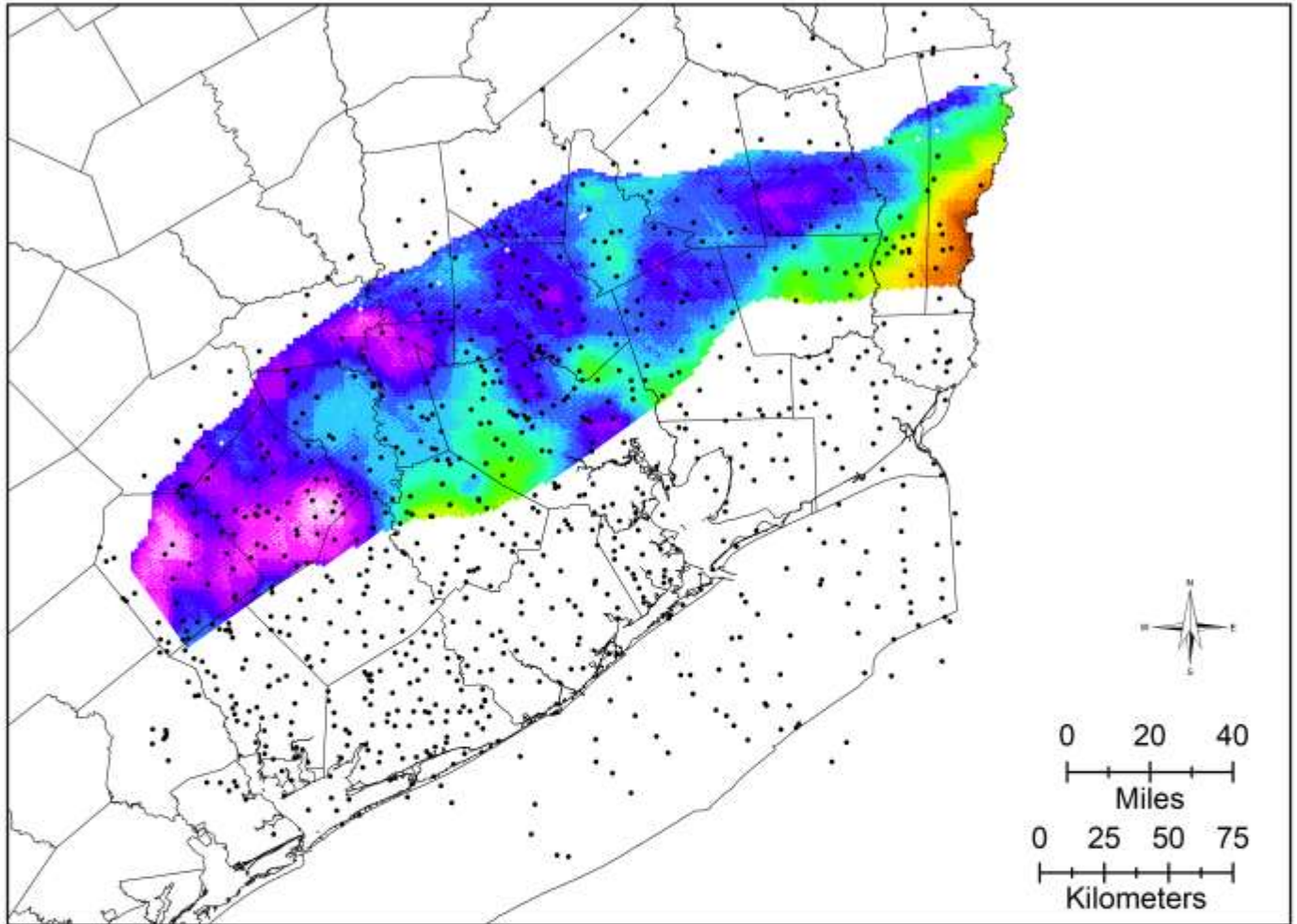
- 50% - 60% (4)
- 60% - 70% (4)
- 70% - 80% (3)
- 80% - 90% (4)
- 90% - 100% (34)



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Figure 3-8 Location of Public Water Supply Wells where more than 30% of the well screen intersects the Burkeville Confining Unit developed by this Study



Bottom Burkeville (HAGM) Minus Bottom Burkeville (This Study)

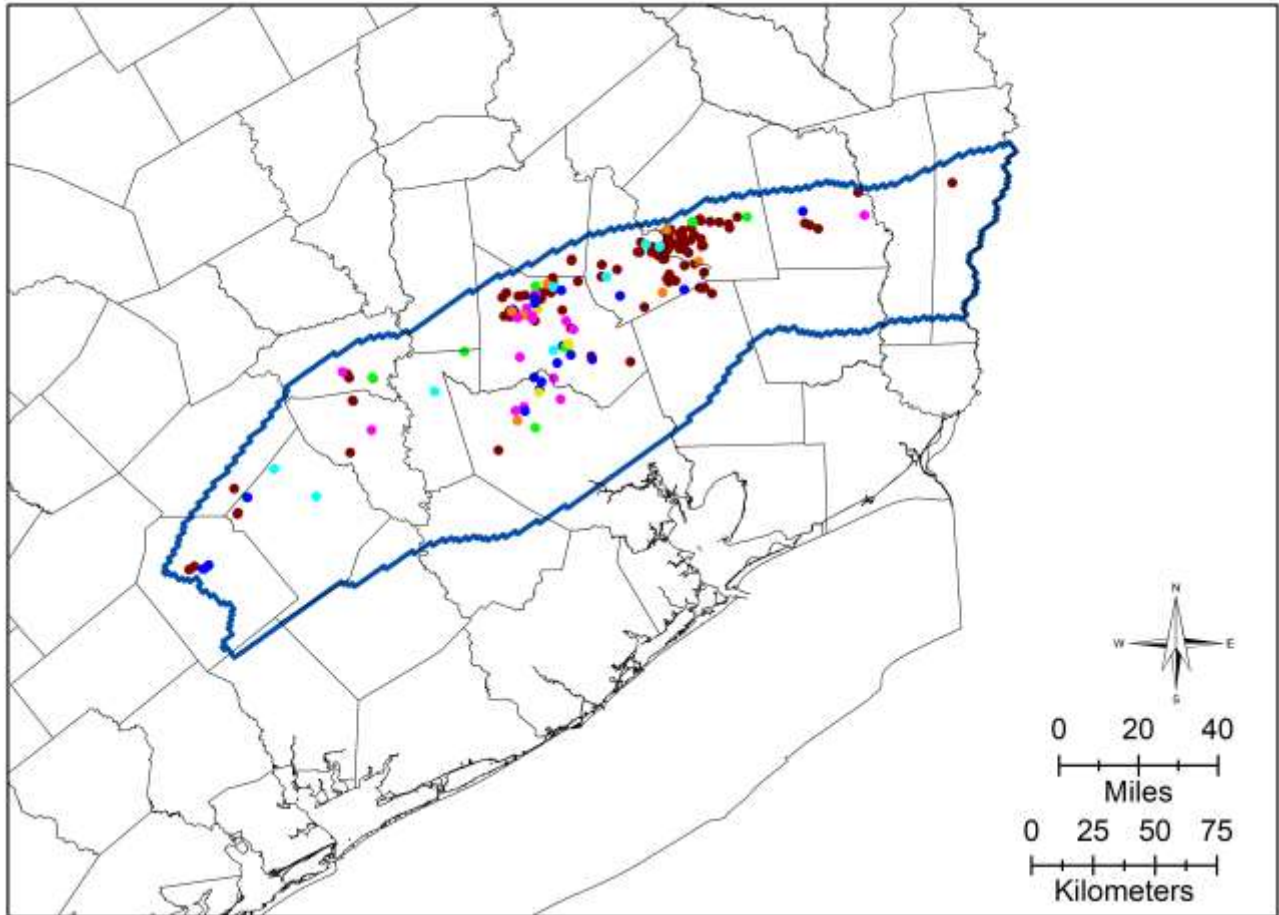
Legend

• Log	-399 - -300	201 - 300	801 - 900
□ County Boundary	-299 - -200	301 - 400	901 - 1,000
Bottom Burkeville Difference (ft)	-199 - -100	401 - 500	1,001 - 1,100
	-99 - 0	501 - 600	
	1 - 100	601 - 700	
□ -493 - -400	101 - 200	701 - 800	



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Figure 3-10 Difference between the HAGM Bottom Burkeville and the Bottom Burkeville developed by this study. Positive values indicate the HAGM Bottom Burkeville is above the Bottom Burkeville developed by this study and negative values indicate the HAGM Bottom Burkeville is below the Bottom Burkeville developed by this study.



Public Water Supply wells with more than 30% of screen intersecting the HAGM Burkeville

Legend

- | | |
|------------------------------------|------------------|
| County Boundary | 60% - 70% (9) |
| HAGM Burkeville Extent | 70% - 80% (4) |
| Screen % in HAGM Burkeville | 80% - 90% (8) |
| 30% - 40% (18) | 90% - 100% (129) |
| 40% - 50% (19) | |
| 50% - 60% (12) | |



Map Location



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Figure 3-11 Location of Public Water Supply Wells where more than 30% of the well screen intersects the Burkeville Confining Unit Used in the Houston Area Groundwater Model (Karsmarek, 2012)

4.0 BOTTOM SURFACE FOR THE CHICOT AQUIFER

This section discusses the construction of an updated bottom of the Chicot Aquifer for the GULF 2023 model. The bottom of the Chicot Aquifer is based on the stratigraphy for the Chicot Aquifer by Young and others (2010, 2012).

4.1 Technical Approach

The base of the Chicot Aquifer is defined as the base of the Willis Formation (see Figure 2-1). The Willis Formation is Pliocene in age (Galloway, 1989). At outcrop, the Willis erosionally downcuts and locally truncates the underlying Goliad Formation and is in turn eroded and locally overlapped by the overlying Lissie Formation (Doering, 1935). At outcrop, the Willis is composed of gravelly coarse sand in several upward-fining successions that are interpreted as incised valley fills overlain by transgressive deposits (Morton and Galloway, 1991). Near the modern shoreline and offshore, Willis deltaic and marine systems record four cyclic depositional episodes bounded by transgressive shales (Galloway and others, 2000).

The approach used to define the base of the Willis Formation is based on the same assumptions and principles described by Young and others (2010, 2012). The sequence stratigraphy and chronostratigraphic correlations used by Young and others (2010, 2012) are, in turn, based on the concepts and methods used by the Gulf Basin Depositional Synthesis Project (GBDS). The GBDS project was conducted by the Texas Bureau of Economic Geology and funded by a consortium of petroleum companies to characterize the Cenozoic depositional history of the Gulf of Mexico Basin. Among the key papers that explains some of these concepts and methods are Galloway (1989, 2005) and Galloway and others (2000).

The primary reason for updating the base of the Chicot Aquifer is to incorporate additional geophysical logs into the analysis. The TWDB surface for the base of the Willis formation (Young and others, 2010, 2012) in the study area was developed using approximately 290 logs with stratigraphic picks. The base of Chicot Aquifer developed by this study uses approximately 650 logs.

Table A-1 in Appendix A identifies the logs with stratigraphic picks for the base of the Willis Formation, which is also the base of the Chicot. These logs were obtained from the following studies:

- A TWDB-funded study to define the stratigraphy and lithology of the Gulf Coast Aquifer from the Brazos River to the Rio Grande (Young and others, 2010)
- A TWDB-funded study to define the stratigraphy and lithology for the Northern of the Gulf Coast Aquifer (Young and others, 2012)
- A TWDB-funded study to identify potential brackish groundwater production areas of the Gulf Coast Aquifer (Young and others, 2016)
- A Lone Star Groundwater Conservation District (GCD)-funded study to characterize the Catahoula and Jasper aquifers (unpublished report by INTERA and LBG Guyton, 2012)
- A study jointly funded by the HSGD and FBSD study to define the brackish groundwater resources of the subsidence districts (Young and others, 2017)

4.2 Construction of the Bottom of Chicot

Figure 4-1 shows the bottom of the Chicot developed by this study. The surface was developed by interpolating the picks of the base of the Willis at the locations of the geophysical logs shown in Figure 4-1. The interpolation was performed using the least-squares methods in PETRA. At each geophysical log, the location of the base of

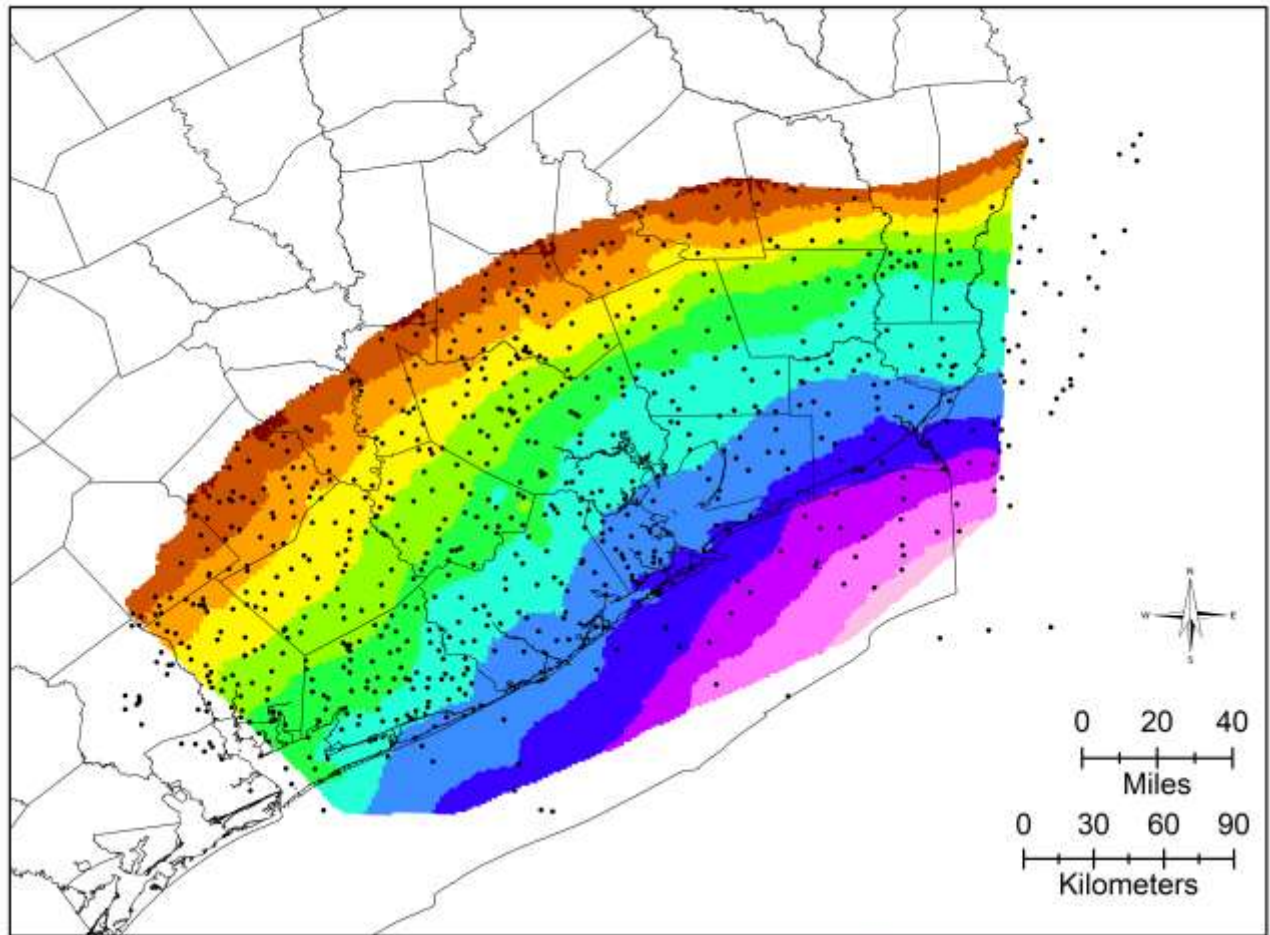


The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

the Willis was selected to represent a transition from the sand-rich basal Chicot Aquifer (Willis Formation) to the sand-poor top of the Evangeline. In most of the logs, the adjustment to previous picks by Young and others (2010, 2012) was less than 100 feet.

Figure 4-2 shows a difference in elevation between the bottom of the Chicot Aquifer created by TWDB (Young and others, 2010, 2012) and by this study. Positive values indicate that the bottom of the Chicot Aquifer developed by this study are below the bottom of the Chicot Aquifer created by the TWDB. For most of the study area, the difference between the two surfaces is less than 100 feet. The average elevation difference for the two surfaces at the 36,000 points (which are spaced approximately 4,000 feet apart) used to generate Figure 4-2 is 12 feet and the standard deviation of those differences is 166 feet.

Figure 4-3 provides a three-dimensional view of the bottom of the Chicot in relations to the ground surface and the top and bottom of the Burkeville Confining Unit. Figure 4-3 shows that the dip angle of the Chicot Aquifer is less than the dip angle of the Burkeville Confining Unit. As a result, the Evangeline Aquifer becomes gradually thicker toward the coastline.



Bottom of Chicot

Legend

- Bottom Chicot Pick
 - County Boundary
- | | | |
|---|---|--|
| <p>Bottom of Chicot (ft, msl)</p> <ul style="list-style-type: none"> □ -2,831 - -2,700 □ -2,699 - -2,400 | <ul style="list-style-type: none"> □ -2,399 - -2,100 □ -2,099 - -1,800 □ -1,799 - -1,500 □ -1,499 - -1,200 □ -1,199 - -900 | <ul style="list-style-type: none"> □ -899 - -600 □ -599 - -300 □ -299 - 0 □ 1 - 300 □ 301 - 600 |
|---|---|--|

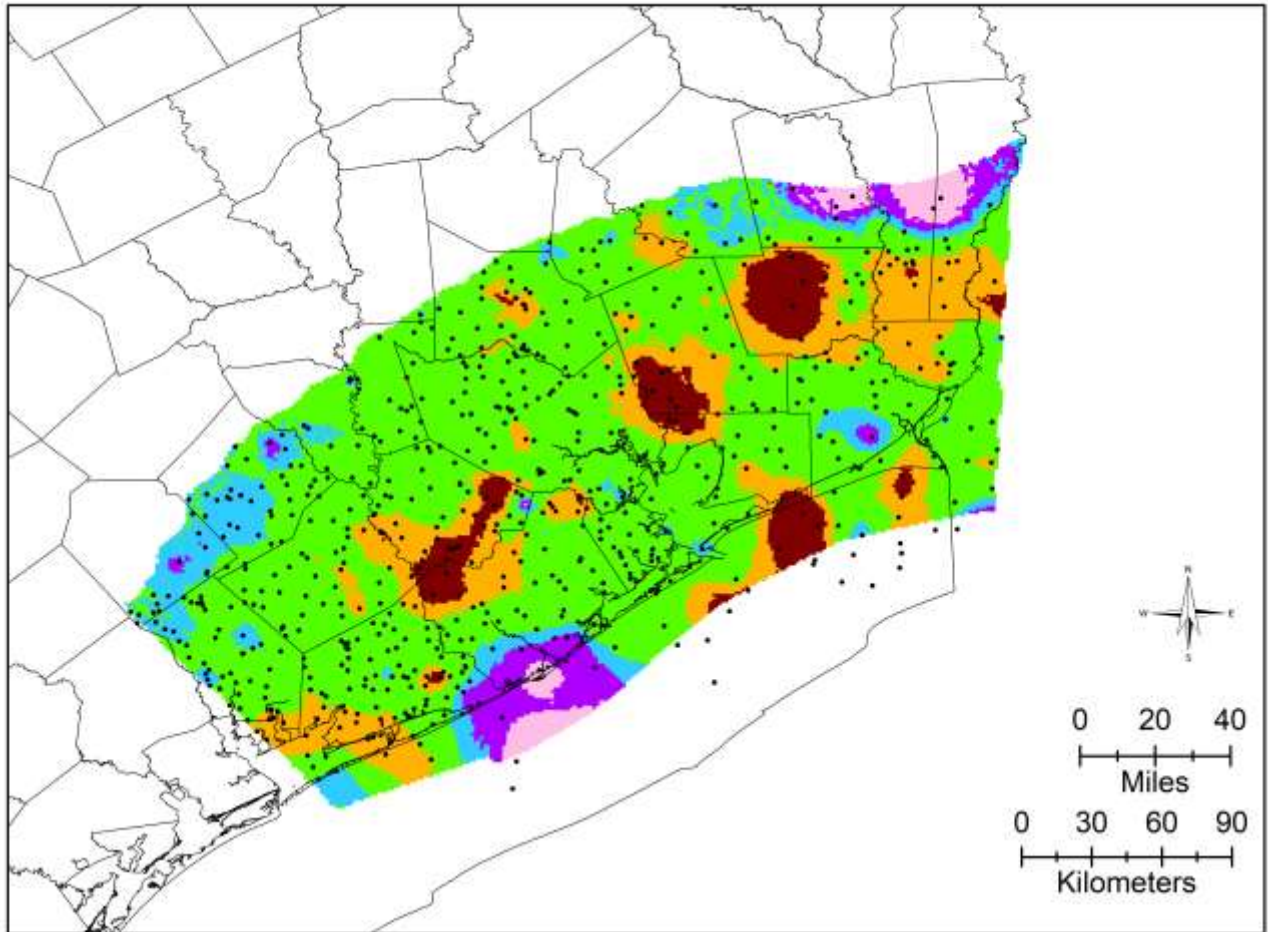


HARRIS-GALVESTON
SUBSIDENCE
DISTRICT

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Figure 4-1 Bottom of the Chicot Aquifer developed by this Study



Bottom of Chicot (TWDB) Minus Bottom of Chicot (This Study)

Legend

- Base Chicot Pick
- County Boundary
- Difference (ft)**
- -199 - -100
- -99 - 100
- 101 - 200
- 201 - 300
- <-300
- -299 - -200



Map Location



Prepared by:



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Figure 4-2 Difference between the Bottom of Chicot developed by this Study and the TWDB Bottom of Chicot. Positive values indicate the Bottom of Chicot (TWDB) is above the Bottom of Chicot (This Study) and negative values indicate the Bottom of Chicot (TWDB) is below the Bottom of Chicot (This Study).

The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

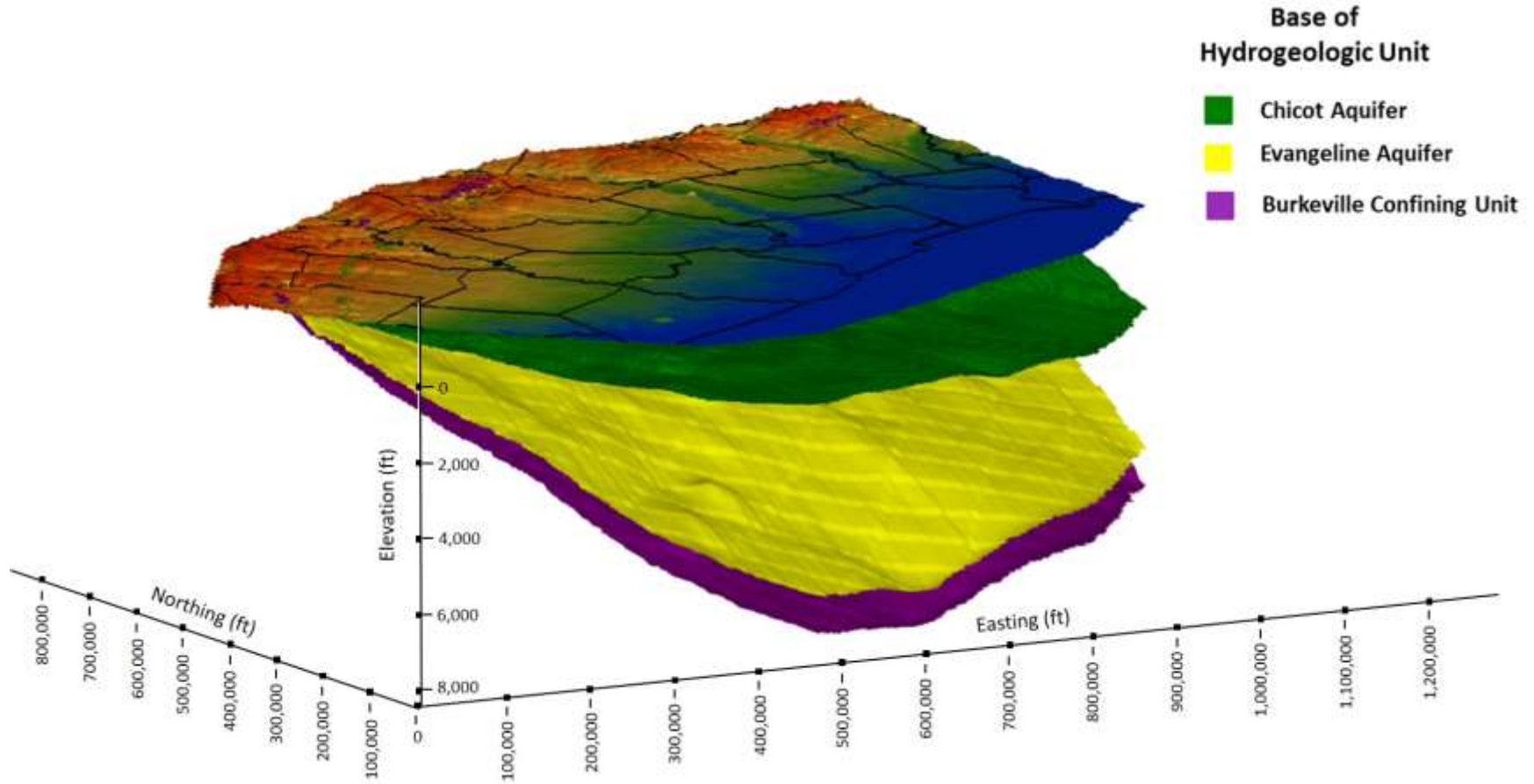


Figure 4-3 A three-dimensional representation of the Gulf Coast surfaces and Public Water Supply Wells generated by Leapfrog (Seequent, 2011), include the bottom of Chicot (green surface), top of Burkeville Confining Unit (yell surface), and bottom of Burkeville Confining Unit (orange surface).

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The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

Appendix A

Geophysical Log Information



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

Table A-1 Listing of Attributes for the Geophysical Logs

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
NOAPI_1878	MATAGORDA	2816644	13363973	26	-	-	-	-	1,1	1,40	-	-
4232131573	MATAGORDA	2852377	13368915	19	-1196	-5223	-6010	1	1,2	1,42	-	-
4232131488	MATAGORDA	2845205	13385799	0	-1189	-5060	-5814	1	1,3	1,41	1	-
4232130980	MATAGORDA	2838077	13401777	20	-1194	-4826	-5566	-	1,4		-	-
4232130961	MATAGORDA	2860506	13400399	25	-1210	-4980	-5786	1	1,5	2,21	-	-
4232102517	MATAGORDA	2874253	13380885	19	-1171	-5262	-6123	1	1,6	1,43	-	-
4232102773	MATAGORDA	2912856	13427404	16	-1347	-5035	-5588	1	1,7	3,22	-	-
4232131324	MATAGORDA	2940280	13422021	15	-1479	-5380	-6284	1	1,8	3,24	-	-
4232130931	MATAGORDA	2944607	13456571	11	-1446	-5161	-5949	1	1,9	4,29	-	-
4232102535	MATAGORDA	2961166	13459694	13	-1441	-5352	-6074	-	1,10	4,31	-	-
4232102547	MATAGORDA	2967917	13470161	14	-1402	-5276	-5937	1	1,11	5,34	-	-
4232130171	MATAGORDA	2981863	13476065	2	-1461	-5322	-5942	-	1,12	5,36	-	-
4232131788	MATAGORDA	3007812	13486937	14	-1475	-5399	-6041	1	1,13	6,31	-	-
4232100824	MATAGORDA	3027981	13494947	29	-1467	-5472	-6354	1	1,14	6,33	1	1
4232100828	MATAGORDA	3035285	13510826	12	-1495	-5384	-6092	1	1,15	6,32	-	-
4203930263	BRAZORIA	3124563	13555317	6	-1575	-5573	-6357	1	1,16	9,17	-	1
4203904291	BRAZORIA	3153212	13575113	4	-1530	-5481	-6320	1	1,17	10,18; 11,21	1	1
4203932294	BRAZORIA	3146044	13605047	28	-1507	-5146	-5855	1	1,18	10,17; 11,19	-	-
4203904277	BRAZORIA	3147776	13613350	3	-1518	-4982	-5828	1	1,19	11,20	1	1
4203904481	BRAZORIA	3195210	13652763	27	-1684	-4686	-5491	-	1,20	13,29	-	1
4216730039	GALVESTON	3228375	13660432	26	-1799	-4739	-5536	1	1,21	13,30	1	1



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4216701336	GALVESTON	3221765	13678657	34	-1729	-4471	-5279	-	1,22	14,20	1	1
4216701142	GALVESTON	3254013	13702272	19	-1750	-4366	-5085	1	1,23	15,19	-	1
4216701054	GALVESTON	3247972	13728698	26	-1712	-4125	-4795	1	1,24	15,18	-	-
4216700966	GALVESTON	3269162	13728812	22	-1732	-4338	-5135	1	1,25	16,18	1	1
4207102513	CHAMBERS	3364687	13819183	9	-1700	-4080	-4869	1	1,26	20,16	-	-
4207102177	CHAMBERS	3405568	13846241	29	-1644	-4071	-4887	-	1,27	21,8	1	-
4224502689	JEFFERSON	3469048	13860747	9	-1794	-4193	-4950	1	1,28	23,13; 24,11	1	-
4224530143	JEFFERSON	3515751	13869104	19	-1859	-4586	-5227	1	1,29	25,10	1	-
4224502996	JEFFERSON	3528088	13836590	1	-1952	-4866	-5654	1	1,30	25,12; 26,8	1	-
1770000046	WEST CAMERON	3634006	13841087	66	-2221	-5408	-6228	1	1,31	28,23	1	-
4228531691	LAVACA	2615731	13597636	153	90	-755	-1043	1	2,1	1,5	-	-
4228531498	LAVACA	2626040	13594081	174	33	-1008	-1195	1	2,2	1,6	-	-
4228500446	LAVACA	2648478	13609435	147	-43	-1010	-1352	1	2,3	1,8	-	-
4228500326	LAVACA	2705891	13690004	220	53	-940	-1202	1	2,4	4,9	-	-
4208900718	COLORADO	2785978	13735651	169	-135	-1246	-1425	1	2,5		-	-
4208900237	COLORADO	2784613	13742246	173	-110	-1167	-1364	1	2,6	6,7	-	-
4208900255	COLORADO	2833144	13778341	165	-270	-1159	-1409	1	2,7	7,13	-	-
4208931376	COLORADO	2837863	13786735	172.5	-239	-1197	-1449	1	2,8	7,12	-	-
4201500705	AUSTIN	2852322	13803263	180	-211	-1219	-1519	1	2,9	8,7	-	-
4220131962	HARRIS	3034859	13950855	173	-390	-1107	-1344	1	2,10		-	-
4220132187	HARRIS	3069390	13959011	158	-495	-972	-1186	1	2,11	14,10	1	1
4233930820	MONTGOMERY	3114248	14012280	172	-281	-708	-982	1	2,12	16,8	1	1
4233901604	MONTGOMERY	3142647	14017464	130	-396	-848	-1065	1	2,13	16,9	1	1



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UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4229100168	LIBERTY	3197534	14029848	109	-502	-922	-1272	1	2,14	17,9; 18,10	1	-
4229100086	LIBERTY	3211536	14043744	140	-444	-936	-1173	1	2,15	18,9	1	1
4229100294	LIBERTY	3244499	14066461	150	-424	-880	-1164	1	2,16	19,3	-	-
4229100284	LIBERTY	3268310	14043138	121	-742	-1214	-1583	1	2,17	19,4; 20,10	1	-
4229100302	LIBERTY	3311431	14068890	106	-819	-1158	-1498	1	2,18	21,6	1	-
4219900757	HARDIN	3351378	14103803	135	-630	-942	-1343	1	2,19	22,7	1	-
4219900618	HARDIN	3409004	14117000	98	-718	-1099	-1466	1	2,20	23,4	1	-
4245700200	TYLER	3429904	14143425	118	-479	-717	-1089	1	2,21	24,5	-	-
4245700377	TYLER	3464569	14143816	97	-596	-780	-1175	1	2,22	24,6; 25,5	1	-
4219900116	HARDIN	3499802	14127843	44	-881	-1175	-1578	1	2,23	25,4	1	-
4224130545	JASPER	3543480	14157754	293	-569	-1134	-1514	1	2,24	26,3	1	-
4224100300	JASPER	3556350	14112843	107	-1147	-1887	-2313	1	2,25	26,4; 27,6	1	-
4235100213	NEWTON	3609620	14119319	61	-1088	-2138	-2637	1	2,26	27,5; 28,10	1	-
4228532297	LAVACA	2535063	13712987	417	-	-	-	-	3,1	1,1	-	-
4228500366	LAVACA	2553616	13699814	378	-	-	-	-	3,2		-	-
4208931611	COLORADO	2670326	13804193	413	-	189	95	1	3,3	5,5	-	-
4214931329	FAYETTE	2702132	13912765	360	-	429	316	-	3,4	7,3	1	1
4201500018	AUSTIN	2778648	13927644	295	-	-29	-253	1	3,5	9,3	-	-
4201500624	AUSTIN	2806497	13910718	259	-	-419	-602	1	3,6	9,4	-	-
4201530138	AUSTIN	2853793	13938753	267	-	-567	-847	1	3,7	10,2	1	1
4247300003	WALLER	2863771	13964825	156	-	-495	-655	1	3,8		1	-
4218530241	GRIMES	2933522	14032383	371.6	-	-50	-250	1	3,9	13,6	-	-
4218500150	GRIMES	2947365	14056696	358	-	180	-29	1	3,10	13,5	1	1



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4247130014	WALKER	3036860	14123726	255.2	-	277	277	-	3,11		1	-
4247130295	WALKER	3055211	14122714	290	-	237	226	-	3,12	16,3	1	-
4247100042	WALKER	3077322	14124048	349	-	192	69	1	3,13	16,4	1	-
4240700290	SAN JACINTO	3176238	14216517	173	-	350	237	-	3,14		1	-
4245730101	TYLER	3363932	14251886	378	-	422	368	-	3,15	23,2	1	-
4245730121	TYLER	3406270	14212623	306	315	22	-147	1	3,16	23,3	-	-
4224100250	JASPER	3515242	14221340	128	111	-176	-344	1	3,17	25,3	1	-
4224130308	JASPER	3529142	14252996	207	-	95	-132	1	3,18	26,2	1	-
4235100167	NEWTON	3645373	14199845	78	-484	-1350	-1814	1	3,19	28,7	1	-
4228530268	LAVACA	2544112	13695282	423	-	-	-	-		1,2	-	-
4228500354	LAVACA	2571083	13645170	248	-	61	49	-		1,3	-	-
4228500358	LAVACA	2581338	13655418	250	-	83	-49	1		1,4	-	-
4246932260	VICTORIA	2615335	13581040	200	-	-964	-1213	1		1,7	-	-
4228532269	LAVACA	2624206	13582747	172	-	-1026	-1308	1		1,9	-	-
4228532190	LAVACA	2644089	13597601	139	-19	-1077	-1430	1		1,10	-	-
4228531762	LAVACA	2650984	13599844	139	-60	-1144	-1505	1		1,11	-	-
4223900017	JACKSON	2658646	13574495	112	-123	-1471	-1841	1		1,12	-	-
4223900042	JACKSON	2669338	13571195	109	-161	-1602	-1906	1		1,13	-	-
4246932432	VICTORIA	2652375	13544740	108	-351	-1689	-2084	1		1,14	-	-
4246932510	VICTORIA	2646537	13531004	120	-	-	-	-		1,15	-	-
4223900047	JACKSON	2676450	13558142	92	-272	-1755	-2175	1		1,16	-	-
4223932263	JACKSON	2685643	13552431	89	-360	-1962	-2276	1		1,17	-	-
4246933509	VICTORIA	2661772	13527029	95	-	-1906	-2339	1		1,18	-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4246933310	VICTORIA	2666191	13528003	90	-	-1899	-2367	1		1,19	-	-
4246933010	VICTORIA	2659633	13514455	82	-	-	-	-		1,20	-	-
4223901554	JACKSON	2688808	13535781	90	-425	-2047	-2549	1		1,21	-	-
4223901728	JACKSON	2707546	13527717	71	-492	-2270	-2764	1		1,22	-	-
4223932870	JACKSON	2713541	13518624	64	-523	-2392	-2899	1		1,23	-	-
4223932341	JACKSON	2709632	13512599	64	-502	-2405	-2950	1		1,24	-	-
4223901921	JACKSON	2712358	13504938	55	-516	-2439	-3020	1		1,25	-	-
4223903376	JACKSON	2715744	13496829	56	-587	-2574	-3142	1		1,26	-	-
4246900250	VICTORIA	2698974	13465774	50	-	-	-	-		1,27	-	-
4223931559	JACKSON	2727587	13492721	52	-685	-2686	-3267	1		1,28	-	-
4223930106	JACKSON	2712062	13474452	39	-	-	-	-		1,29	-	-
4223901992	JACKSON	2747257	13501647	45	-761	-2833	-3359	1		1,30	-	-
4246933273	VICTORIA	2709761	13463944	38	-	-	-	-		1,31	-	-
4223930715	JACKSON	2750788	13485225	43	-781	-2935	-3589	1		1,32	-	-
4223903378	JACKSON	2740259	13469899	15	-804	-2991	-3600	1		1,33	-	-
4223933136	JACKSON	2753128	13465426	34	-838	-3126	-3796	1		1,34	-	-
4223903198	JACKSON	2763092	13449429	35	-951	-3454	-4160	1		1,35	-	-
4205700646	CALHOUN	2774554	13434123	25	-1037	-3784	-4497	1		1,36	-	-
4205700852	CALHOUN	2787016	13422777	19	-1090	-4030	-4808	1		1,37	-	-
4205700872	CALHOUN	2777735	13402319	16	-1027	-	-	-		1,38	-	-
4205730903	CALHOUN	2809213	13385809	30	-1125	-4741	-5475	1		1,39	-	-
4270330006	MATAGORDA	2857211	13328250	62	-	-	-	-		1,44	-	-
4228500249	LAVACA	2629051	13675268	236	-	-219	-372	1		2,1	-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4228531464	LAVACA	2634979	13644903	220	214	-581	-941	-		2,2	-	-
4228500475	LAVACA	2643675	13622244	145	28	-853	-1212	-		2,3	-	-
4228500431	LAVACA	2661661	13621006	164	-7	-1046	-1360	-		2,4	-	-
4223903909	JACKSON	2681028	13619161	131	-133	-1214	-1577	1		2,5	-	-
4223900094	JACKSON	2690122	13612816	125	-221	-1313	-1665	1		2,6	-	-
4223900097	JACKSON	2698038	13611816	117	-242	-1406	-1757	-		2,7	-	-
4223900098	JACKSON	2702842	13613142	120	-261	-1348	-1737	-		2,8	-	-
4223900340	JACKSON	2704176	13609161	110	-277	-1437	-1829	-		2,9	-	-
4223900309	JACKSON	2707195	13602387	110	-302	-1511	-1926	-		2,10	-	-
4223900233	JACKSON	2724705	13574940	86	-395	-1857	-2461	-		2,11	-	-
4223903329	JACKSON	2754503	13541741	44	-605	-2446	-3098	-		2,12	-	-
4223903366	JACKSON	2755415	13542565	43	-605	-2446	-3045	-		2,13	-	-
4223903457	JACKSON	2767149	13550125	56	-586	-2412	-3042	1		2,14	-	-
4223930017	JACKSON	2788458	13520996	45	-794	-2927	-3589	-		2,15	-	-
4223903327	JACKSON	2784974	13496795	36	-793	-3134	-3745	-		2,16	-	-
4223901520	JACKSON	2784092	13481081	38	-883	-3323	-3945	-		2,17	-	-
4223903228	JACKSON	2799712	13462584	26	-1014	-3777	-4478	1		2,18	-	-
4232130996	MATAGORDA	2848992	13453052	7	-1152	-4422	-5103	-		2,19	-	-
4232102371	MATAGORDA	2835540	13429360	22	-1162	-4527	-5193	1		2,20	-	-
4228531359	LAVACA	2627559	13718698	267	-	199	112	1		3,1	-	-
4228532075	LAVACA	2649726	13694489	265	255	-328	-427	1		3,2	-	-
4228500308	LAVACA	2674154	13669589	193	108	-733	-977	1		3,3	-	-
4228500187	LAVACA	2708677	13656100	156	-97	-1158	-1446	-		3,4	-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4228531445	LAVACA	2708532	13652456	180	-112	-1149	-1472	-		3,5	-	-
4223900120	JACKSON	2739040	13607314	92	-333	-1626	-2094	1		3,6	-	-
4248101409	WHARTON	2756031	13613618	100	-373	-1758	-2216	1		3,7	-	-
4223900816	JACKSON	2777052	13555557	50	-570	-2437	-3071	1		3,8	-	-
4248101743	WHARTON	2802223	13578116	83	-625	-2483	-3126	1		3,9	-	-
4248103544	WHARTON	2807270	13568259	80	-673	-2644	-3221	-		3,10	-	-
4223901001	JACKSON	2801594	13546513	67	-729	-2768	-3351	-		3,11	-	-
4232102171	MATAGORDA	2830033	13537502	65	-846	-3082	-3808	-		3,12	-	-
4232102186	MATAGORDA	2831132	13525510	48	-897	-3297	-3900	1		3,13	-	-
4232102238	MATAGORDA	2838645	13510351	30	-980	-3509	-4224	1		3,14	-	-
4232102295	MATAGORDA	2839377	13493703	41	-1088	-3797	-4515	-		3,15	-	-
4232101890	MATAGORDA	2853749	13488924	47	-1087	-4107	-4798	1		3,16	-	-
4232131729	MATAGORDA	2856368	13469288	35	-1121	-4336	-4967	1		3,17	-	-
4232101967	MATAGORDA	2879484	13470751	29	-1151	-4547	-5239	1		3,18	-	-
4232130405	MATAGORDA	2882674	13464042	54	-1211	-4647	-5329	-		3,19	-	-
4232130480	MATAGORDA	2898275	13461362	27	-1232	-4766	-5365	1		3,20	-	-
4232102495	MATAGORDA	2897124	13449096	7	-1293	-4810	-5359	-		3,21	-	-
4232102514	MATAGORDA	2918476	13429405	15	-1358	-5098	-5625	-		3,23	-	-
4214900327	FAYETTE	2589306	13805471	409	-	-	-	-		4,1	-	-
4214930330	FAYETTE	2637332	13793025	343	-	308	173	-		4,2	-	-
4214930098	FAYETTE	2640387	13794329	353	-	262	129	-		4,3	-	-
4214932620	FAYETTE	2633360	13787221	330	-	299	146	1		4,4	-	-
4228531957	LAVACA	2638587	13779604	259	-	216	17	1		4,5	-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4228531777	LAVACA	2654629	13758741	277.5	-	-66	-211	1		4,6	-	-
4228500030	LAVACA	2689342	13736578	305	269	-432	-697	-		4,7	-	-
4228531172	LAVACA	2697436	13709460	250	178	-641	-905	-		4,8	-	-
4208931348	COLORADO	2727771	13705137	217	24	-985	-1203	1		4,10	-	-
4208931604	COLORADO	2732512	13663043	173	-233	-1332	-1587	1		4,11	-	-
4208930245	COLORADO	2755251	13667606	141	-239	-1522	-1917	1		4,12	-	-
4248130581	WHARTON	2755706	13661147	148	-270	-1597	-2045	-		4,13	-	-
4248103550	WHARTON	2776490	13630330	107	-385	-1973	-2500	-		4,14	-	-
4248101478	WHARTON	2798045	13628780	97	-460	-2136	-2747	1		4,15	-	-
4248101702	WHARTON	2778565	13607757	88	-484	-2092	-2707	-		4,16	-	-
4248101770	WHARTON	2803841	13581048	85	-625	-2540	-3144	1		4,17	-	-
4248101891	WHARTON	2826849	13598055	109	-659	-2720	-3256	-		4,18	-	-
4248101987	WHARTON	2822939	13576272	74	-693	-2825	-3413	1		4,19	-	-
4232101683	MATAGORDA	2885272	13539002	48	-927	-3802	-4482	-		4,20	-	-
4232102626	MATAGORDA	2877142	13529499	38	-958	-3787	-4514	1		4,21	-	-
4232102088	MATAGORDA	2884667	13521766	38	-974	-3877	-4699	-		4,22	-	-
4232102043	MATAGORDA	2887402	13496037	44	-1049	-4321	-5137	1		4,23	-	-
4232102119	MATAGORDA	2906935	13510279	35	-1042	-4360	-5101	-		4,24	-	-
4232102147	MATAGORDA	2905980	13500598	52	-1075	-4487	-5196	-		4,25	-	-
4232102148	MATAGORDA	2916232	13495454	50	-1135	-4601	-5387	1		4,26	-	-
4232102162	MATAGORDA	2920996	13471039	38	-1181	-4866	-5597	-		4,27	-	-
4232102513	MATAGORDA	2926994	13454456	15	-1422	-5054	-5666	1		4,28	-	-
4232102539	MATAGORDA	2957219	13464252	7	-1420	-5256	-5994	-		4,30	-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
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4232102537	MATAGORDA	2961123	13459092	7	-1441	-5352	-6125	-		4,32	-	-
4232130008	MATAGORDA	2963531	13458363	5	-1435	-5379	-6125	-		4,33	-	-
4232102567	MATAGORDA	2964082	13457903	1	-1435	-5379	-6125	-		4,34	-	-
4232130114	MATAGORDA	2967252	13432406	1	-1585	-5632	-6469	1		4,35	-	-
4260400012	BRAZOS-S.B.	2976367	13421027	76	-1621	-5848	-6734	1		4,36	1	-
4270400007	BRAZOS-L.B.	2990786	13399605	70	-1677	-6205	-7087	-		4,37	1	-
4214930914	FAYETTE	2628862	13851083	449	-	-	-	-		5,1	-	-
4214930089	FAYETTE	2630611	13848997	400	-	-	-	-		5,2	-	-
4214932049	FAYETTE	2662951	13844196	355	-	345	317	1		5,3	-	-
4208931645	COLORADO	2675235	13819837	330	-	237	58	1		5,4	-	-
4208931221	COLORADO	2706362	13764216	330	284	-375	-569	1		5,6	-	-
4208931287	COLORADO	2719158	13756387	285	205	-490	-691	-		5,7	-	-
4208900440	COLORADO	2731527	13760474	275	196	-635	-789	1		5,8	-	-
4208900448	COLORADO	2734734	13758231	270	169	-626	-855	1		5,9	-	-
4208900572	COLORADO	2735218	13722330	223	97	-873	-1150	1		5,10	-	-
4208931120	COLORADO	2745069	13718232	190	23	-1036	-1238	1		5,11	-	-
4208900755	COLORADO	2770636	13708156	148	-147	-1290	-1499	1		5,12	-	-
4208930427	COLORADO	2786558	13696127	165.8	-247	-1492	-1812	-		5,13	-	-
4208931981	COLORADO	2798924	13700396	154	-278	-1523	-1855	1		5,14	-	-
4248101367	WHARTON	2791921	13653040	117	-393	-1931	-2497	-		5,15	-	-
4248133361	WHARTON	2809272	13664677	151	-424	-1960	-2493	1		5,16	-	-
4248101288	WHARTON	2841920	13652636	122	-512	-2207	-2839	1		5,17	-	-
4248131477	WHARTON	2830715	13624439	121	-560	-2417	-3092	-		5,18	-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4248103051	WHARTON	2874122	13614671	81	-688	-2831	-3505	-		5,19	-	-
4232100003	MATAGORDA	2875763	13563048	67	-840	-3336	-3987	1		5,20	-	-
4232100226	MATAGORDA	2879539	13559546	65	-863	-3419	-4076	1		5,21	-	-
4232100230	MATAGORDA	2884184	13560327	52	-879	-3486	-4153	1		5,22	-	-
4232101435	MATAGORDA	2882108	13553523	49	-874	-3593	-4264	1		5,23	-	-
4232100013	MATAGORDA	2895647	13565277	70	-875	-3538	-4217	1		5,24	-	-
4232101388	MATAGORDA	2884704	13551976	49	-892	-3646	-4264	1		5,25	-	-
4232131159	MATAGORDA	2911935	13537604	74	-978	-4101	-4891	1		5,26	-	-
4232100942	MATAGORDA	2933676	13550616	50	-1037	-4212	-4914	1		5,27	-	-
4232131558	MATAGORDA	2947614	13530233	312	-1117	-4639	-5248	1		5,28	-	-
4232101147	MATAGORDA	2939665	13514335	35	-1077	-4702	-5347	-		5,29	1	-
4232101114	MATAGORDA	2953978	13514893	20	-1176	-4783	-5391	-		5,30	-	-
4232102721	MATAGORDA	2934265	13496011	40	-1197	-4768	-5526	1		5,31	-	-
4232101120	MATAGORDA	2959155	13513312	36	-1202	-4796	-5393	-		5,32	-	-
4232131673	MATAGORDA	2962907	13500972	53	-1294	-4948	-5507	1		5,33	-	-
4232101077	MATAGORDA	2982738	13483173	38	-1430	-5269	-5875	-		5,35	-	-
4232102578	MATAGORDA	3005501	13462586	23	-1563	-5718	-6519	1		5,37	-	-
4232102576	MATAGORDA	2991689	13448652	15	-1558	-5664	-6581	-		5,38	-	-
4214932224	FAYETTE	2659288	13870507	295	-	490	324	-		6,1	-	-
4208931810	COLORADO	2739788	13831609	315	289	-284	-452	1		6,2	-	-
4208931209	COLORADO	2747159	13763515	252	131	-741	-934	-		6,3	-	-
4208900445	COLORADO	2748241	13763479	230	131	-741	-934	-		6,4	-	-
4208930570	COLORADO	2773105	13776208	213	7	-878	-1092	1		6,5	-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4208930592	COLORADO	2760473	13755755	199	76	-876	-1071	1		6,6	-	-
4208900724	COLORADO	2811101	13737346	165	-253	-1319	-1588	1		6,8	-	-
4248101218	WHARTON	2833687	13730291	175	-328	-1490	-1840	1		6,9	1	1
4248133769	WHARTON	2824794	13683756	140	-440	-1774	-2301	-		6,10	-	-
4248133274	WHARTON	2831009	13677772	142	-463	-1860	-2426	-		6,11	-	-
4248101140	WHARTON	2866225	13686642	111	-494	-1938	-2604	1		6,12	-	-
4248131273	WHARTON	2866556	13638379	104	-607	-2529	-3154	-		6,13	-	-
4248102802	WHARTON	2896975	13608677	76	-762	-3053	-3806	-		6,14	-	-
4248102562	WHARTON	2922540	13616454	77	-828	-3308	-4016	1		6,15	1	1
4232100116	MATAGORDA	2914093	13588984	67	-860	-3499	-4154	1		6,16	-	-
4232100325	MATAGORDA	2934591	13602416	86	-935	-3504	-4295	-		6,17	-	-
4232130954	MATAGORDA	2928281	13587147	70	-937	-3648	-4451	1		6,18	1	-
4232100132	MATAGORDA	2921740	13573507	59	-947	-3761	-4518	-		6,19	-	-
4232100435	MATAGORDA	2940017	13580212	72	-1012	-3810	-4644	1		6,20	-	1
4232131579	MATAGORDA	2954356	13567379	79	-1098	-4128	-4951	1		6,21	-	-
4232101026	MATAGORDA	2943768	13554707	47	-1077	-4250	-4931	1		6,22	-	1
4232100708	MATAGORDA	2982740	13565935	26	-1286	-4421	-5198	1		6,23	-	-
4232100838	MATAGORDA	2993589	13555254	45	-1313	-4587	-5345	1		6,24	-	-
4232100868	MATAGORDA	2967060	13523873	27	-1243	-4720	-5373	1		6,25	-	-
4232100836	MATAGORDA	2999122	13543530	46	-1354	-4699	-5449	1		6,26	1	1
4232101064	MATAGORDA	2982166	13515952	46	-1387	-4740	-5362	1		6,27	-	1
4232101039	MATAGORDA	3002337	13522679	27	-1414	-4738	-5441	-		6,28	-	-
4232101075	MATAGORDA	2998135	13515056	35	-1423	-4751	-5426	1		6,29	-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4232102600	MATAGORDA	3020528	13501922	11	-1451	-5317	-6029	-		6,30	-	-
4232131592	MATAGORDA	3047348	13479259	17	-1590	-5905	-6761	-		6,34	-	1
4270430073	BRAZOS-L.B.	3076379	13460724	71	-1724	-6290	-7222	1		6,35	1	1
4214932088	FAYETTE	2648780	13944698	388	-	-	-	-		7,1	1	1
4214900012	FAYETTE	2694689	13941168	387	-	-	-	-		7,2	-	-
4208931531	COLORADO	2736064	13848856	293	-	-168	-280	1		7,4	1	1
4208900015	COLORADO	2754735	13859868	307	-	-210	-390	1		7,5	-	-
4208900057	COLORADO	2745727	13839323	250	228	-266	-433	1		7,6	1	1
4208900090	COLORADO	2781949	13837790	318	292	-541	-704	1		7,7	1	1
4208900140	COLORADO	2808020	13806529	223	-28	-878	-1131	1		7,8	-	-
4208931246	COLORADO	2797646	13791548	232	-100	-857	-1064	-		7,9	1	1
4208930594	COLORADO	2821214	13806814	190	-95	-991	-1220	1		7,10	-	-
4208900970	COLORADO	2803975	13779582	198	-148	-967	-1191	1		7,11	-	-
4248101205	WHARTON	2861724	13730653	137	-351	-1574	-2102	1		7,14	1	1
4248100943	WHARTON	2879394	13719869	102	-497	-1776	-2367	1		7,15	-	1
4248133442	WHARTON	2875661	13692464	137	-527	-1940	-2607	1		7,16	1	1
4248100696	WHARTON	2932448	13666517	83	-781	-2816	-3541	-		7,17	-	1
4248132944	WHARTON	2920073	13645349	121	-678	-2924	-3706	1		7,18	1	1
4248100671	WHARTON	2959603	13654602	68	-981	-3110	-3883	1		7,19; 8,17	-	1
4232130952	MATAGORDA	2950359	13616163	70	-999	-3585	-4302	1		7,20	-	1
4232100308	MATAGORDA	2965140	13613466	59	-1109	-3744	-4461	-		7,21	-	-
4232100671	MATAGORDA	2980912	13583327	54	-1265	-4169	-4998	-		7,22	-	-
4232100670	MATAGORDA	2995552	13585065	56	-1347	-4336	-5068	1		7,23	-	1



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4203902829	BRAZORIA	3005981	13574614	28	-1362	-4479	-5258	-		7,24	-	-
4203904069	BRAZORIA	3022475	13567649	26	-1353	-4721	-5438	-		7,25	-	1
4232130821	MATAGORDA	3026245	13544886	36	-1434	-4960	-5734	-		7,26	-	-
4232100771	MATAGORDA	3029190	13531536	12	-1471	-5107	-5879	1		7,27	-	-
4232100795	MATAGORDA	3029761	13530218	33	-1471	-5136	-5879	1		7,28	-	-
4232130497	MATAGORDA	3025782	13522646	14	-1472	-5070	-5798	1		7,29	-	1
4247700366	WASHINGTON	2731039	13967532	438	-	515	383	-		8,1	-	1
4201530539	AUSTIN	2788837	13890211	314	-	-355	-608	-		8,2	1	1
4201500591	AUSTIN	2780242	13877710	357	364	-328	-605	1		8,3	-	-
4208900088	COLORADO	2796585	13849239	304	244	-610	-830	1		8,4	-	-
4201500662	AUSTIN	2823241	13862729	259	188	-745	-1004	1		8,5	-	-
4201500663	AUSTIN	2828252	13858925	248	156	-764	-1066	1		8,6	1	1
4201500683	AUSTIN	2883610	13791032	157.5	-345	-1516	-1918	1		8,8	-	1
4248130105	WHARTON	2882234	13746442	136	-436	-1710	-2218	1		8,9	-	-
4248131622	WHARTON	2911125	13740027	133	-586	-1919	-2568	1		8,10	-	1
4215701374	FORT BEND	2920127	13717436	95	-705	-2167	-2793	-		8,11	-	1
4215731805	FORT BEND	2938214	13728549	120	-718	-2287	-2934	1		8,12	1	1
4248100997	WHARTON	2923487	13714801	88	-733	-2235	-2869	1		8,13	-	1
4215701392	FORT BEND	2946259	13708903	108	-768	-2450	-3126	1		8,14	-	1
4215701674	FORT BEND	2972412	13677949	77	-932	-2892	-3655	1		8,15	1	1
4215731815	FORT BEND	2969280	13667513	92	-979	-2960	-3784	1		8,16	-	1
4203902865	BRAZORIA	3018878	13630027	57	-1321	-3857	-4618	-		8,18	1	1
4203903927	BRAZORIA	3016630	13595830	48	-1349	-4345	-5046	1		8,19	-	1



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4203903898	BRAZORIA	3051661	13591772	48	-1469	-4563	-5440	1		8,20; 9,15	1	1
4203904086	BRAZORIA	3036837	13570217	43	-1402	-4827	-5595	-		8,21	-	-
4201530146	AUSTIN	2766307	13944375	276	-	58	-37	1		9,1	-	-
4201500783	AUSTIN	2767359	13943455	295	-	24	-67	1		9,2	-	-
4201500262	AUSTIN	2856183	13834808	212	-117	-1078	-1361	1		9,5	1	1
4201530738	AUSTIN	2905684	13783707	121	-422	-1740	-2188	1		9,6	1	1
4215731695	FORT BEND	2928204	13788232	151	-550	-1862	-2448	1		9,7	-	1
4215701137	FORT BEND	2924644	13767703	120	-581	-1984	-2573	1		9,8	-	1
4215701887	FORT BEND	2988856	13724786	76	-841	-2722	-3329	1		9,9	-	-
4215701729	FORT BEND	2989447	13708809	92	-928	-2796	-3487	1		9,10	-	1
4215731913	FORT BEND	3005231	13694864	104	-1100	-3039	-3745	-		9,11	-	-
4215730949	FORT BEND	3001901	13681220	81	-1095	-3151	-3833	1		9,12	-	1
4203902717	BRAZORIA	3002589	13661024	48	-1137	-3379	-4115	1		9,13	-	-
4203903878	BRAZORIA	3053865	13607281	21	-1439	-4339	-5139	1		9,14	-	1
4203903888	BRAZORIA	3068074	13595106	38	-1482	-4574	-5425	-		9,16	-	1
4247730625	WASHINGTON	2790432	14040388	276	-	480	453	-		10,1	1	1
4201500230	AUSTIN	2876897	13925956	149	128	-830	-1056	-		10,3	-	1
4201500146	AUSTIN	2886225	13928747	145	75	-784	-1035	1		10,4	1	-
4247300243	WALLER	2888719	13915265	152	-42	-892	-1154	1		10,5	1	1
4247300278	WALLER	2894149	13860168	137	-255	-1151	-1539	1		10,6	-	1
4247300288	WALLER	2909255	13850001	123	-331	-1293	-1759	1		10,7	-	1
4247330587	WALLER	2916786	13843170	118.6	-378	-1374	-1858	1		10,8	-	-
4215701026	FORT BEND	2968791	13804690	102	-661	-1883	-2423	1		10,9	1	1

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UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
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4215700001	FORT BEND	2961288	13835029	155	-453	-1661	-2097	1		10,10	1	1
4215701974	FORT BEND	3034723	13743256	72	-1116	-2799	-3456	1		10,11	-	1
4215702459	FORT BEND	3046635	13729343	73	-1173	-2985	-3626	1		10,12	1	1
4215731983	FORT BEND	2979234	13778940	102	-731	-2149	-2737	1		10,13	1	1
4215731165	FORT BEND	3020285	13749072	90	-950	-2687	-3360	1		10,14	-	-
4203901910	BRAZORIA	3072325	13657955	36	-1313	-3883	-4622	1		10,15	-	1
4203904467	BRAZORIA	3100231	13603980	35	-1513	-4679	-5529	-		10,16	-	1
4270600022	GALVESTON	3188803	13534616	25	-1772	-6268	-7091	1		10,19	1	1
4205130950	BURLESON	2816110	14063086	200	-	487	463	-		11,1	1	-
4247300005	WALLER	2887037	13995080	254	-	-265	-376	1		11,2	-	-
4247300049	WALLER	2926453	13901136	224	-189	-1124	-1464	1		11,3	1	1
4247300318	WALLER	2940527	13889621	211	-291	-1258	-1618	1		11,4	1	1
4247300060	WALLER	2947768	13886771	185	-346	-1286	-1639	1		11,5	-	-
4247300108	WALLER	2965337	13871799	166	-448	-1481	-1833	1		11,6	-	1
4215701004	FORT BEND	2977803	13830281	130	-547	-1778	-2206	1		11,8	-	-
4215700030	FORT BEND	2989872	13838202	140	-597	-1807	-2185	-		11,9	1	1
4215730386	FORT BEND	3015164	13787034	96	-768	-2319	-2815	-		11,10	-	1
4215730396	FORT BEND	3015745	13785174	78	-768	-2348	-2864	1		11,11	1	1
4215700894	FORT BEND	3025731	13775515	74	-863	-2478	-3025	1		11,12	1	1
4203904263	BRAZORIA	3141020	13653568	19	-1470	-4356	-5191	-		11,13	-	1
4203904518	BRAZORIA	3185954	13594064	12	-1759	-5489	-6383	1		11,14	1	1
4215700836	FORT BEND	3048542	13767709	78	-1185	-2636	-3245	1		11,15	1	-
4203901452	BRAZORIA	3093005	13679631	39	-1267	-3730	-4454	1		11,16	1	1



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UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4203904224	BRAZORIA	3111856	13650843	32	-1359	-4182	-4985	1		11,17	1	1
4203901711	BRAZORIA	3132647	13661230	23	-1419	-4229	-5033	-		11,18	1	1
4204100068	BRAZOS	2845770	14091374	318	-	-	-	-		12,1	-	-
4204100077	BRAZOS	2843050	14089078	291	-	-	-	-		12,2	-	-
4204100102	BRAZOS	2866955	14049026	148	-	237	143	-		12,3	1	-
4247330432	WALLER	2911661	13988345	320	214	-382	-593	1		12,4	-	1
4220107892	HARRIS	2953553	13953013	294	-66	-822	-1056	1		12,5	1	1
4220131506	HARRIS	2946465	13933145	260	-206	-933	-1225	1		12,6	1	1
4220132368	HARRIS	2965742	13904049	172	-367	-1288	-1594	1		12,7	1	1
4220103982	HARRIS	3015572	13882725	157	-583	-1700	-1991	1		12,8	-	1
4220104395	HARRIS	3023459	13832424	91	-773	-2074	-2460	1		12,9	1	1
4215731513	FORT BEND	3091379	13772585	84	-970	-2749	-3370	-		12,10	-	1
4215702773	FORT BEND	3077094	13743222	70	-1073	-2942	-3626	1		12,11	-	1
4215731152	FORT BEND	3091620	13733586	96	-1134	-3129	-3762	-		12,12	-	1
4203901420	BRAZORIA	3121910	13698172	48	-1261	-3699	-4404	-		12,13	1	1
4270600088	GALVESTON	3212450	13563435	80	-1850	-6035	-6881	1		12,14	1	1
4204100012	BRAZOS	2850953	14143853	192	-	-	-	-		13,1	-	-
4218500061	GRIMES	2904493	14138470	237	-	-	-	-		13,2	1	1
4218500034	GRIMES	2914677	14106560	377	-	-	-	-		13,3	1	1
4218530340	GRIMES	2910549	14074174	250	-	378	295	-		13,4	-	-
4218530399	GRIMES	2937983	14022093	338	-	-205	-410	1		13,7	-	1
4218530009	GRIMES	2960795	14021564	331	325	-341	-568	-		13,8	-	1
4247330379	WALLER	2961297	14011119	295	173	-480	-654	1		13,9	-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

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				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4247330066	WALLER	2975642	14003060	292	30	-623	-786	1		13,10	1	1
4233901014	MONTGOMERY	2995494	13973376	229	-138	-912	-1193	1		13,11	1	1
4233930852	MONTGOMERY	3010534	13965466	210	-211	-1014	-1243	1		13,12	1	1
4220100048	HARRIS	3014897	13955949	221	-232	-1077	-1353	1		13,13	1	1
4220100104	HARRIS	3018770	13950230	183	-288	-1147	-1388	1		13,14	1	1
4220107899	HARRIS	3057195	13895269	119	-698	-1670	-1873	1		13,15	-	-
4220131622	HARRIS	3074442	13889410	106	-789	-1668	-1953	1		13,16	1	1
4220107904	HARRIS	3067942	13873130	120	-827	-1872	-2224	1		13,17	1	1
4220108007	HARRIS	3045094	13857067	116	-783	-1987	-2350	1		13,18	1	1
4220103455	HARRIS	3081009	13879764	90	-845	-1807	-2057	1		13,19	1	-
4220104068	HARRIS	3055153	13838775	76	-835	-2163	-2522	1		13,20	-	1
4220103510	HARRIS	3094260	13850690	88	-963	-2091	-2472	1		13,21	1	1
4220105058	HARRIS	3112152	13803447	58	-1113	-2468	-2982	1		13,22	1	1
4203900064	BRAZORIA	3129632	13757525	58	-1357	-3094	-3755	-		13,23	1	1
4203932501	BRAZORIA	3118119	13748823	57	-1253	-3122	-3782	1		13,24	-	-
4216701876	GALVESTON	3189970	13714529	54	-1585	-3953	-4659	-		13,25	1	1
4203900965	BRAZORIA	3166745	13686755	36	-1522	-4130	-4885	1		13,26	-	1
4203900984	BRAZORIA	3165364	13682777	45	-1528	-4175	-4936	1		13,27	-	1
4203901032	BRAZORIA	3181810	13669902	40	-1668	-4410	-5219	1		13,28	-	1
4218500024	GRIMES	2934789	14163908	379	-	-	-	-		14,1	-	-
4218530369	GRIMES	2950785	14123295	359	-	-	-	-		14,2	-	-
4218530384	GRIMES	2942915	14110947	373	-	-	-	-		14,3	-	-
4218530028	GRIMES	2950649	14097283	375	-	543	296	-		14,4	1	-

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				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4233900998	MONTGOMERY	2977427	14092406	284	-	312	76	1		14,5	1	-
4233930478	MONTGOMERY	3009382	14026140	178	-50	-425	-689	1		14,6	1	1
4233901039	MONTGOMERY	3030419	14004240	201	-117	-698	-899	1		14,7	1	1
4233901102	MONTGOMERY	3036324	13977016	148	-309	-886	-1086	1		14,8	1	1
4220103948	HARRIS	3038644	13965390	137	-348	-955	-1140	1		14,9	1	-
4220103533	HARRIS	3071550	13912933	134	-748	-1483	-1665	1		14,11	1	1
4220103224	HARRIS	3090390	13922185	106	-774	-1349	-1554	1		14,12	-	1
4220103343	HARRIS	3092773	13897975	76	-847	-1599	-1900	1		14,13	1	1
4220130016	HARRIS	3160152	13809385	48	-1370	-2502	-3087	1		14,14	1	1
4220131368	HARRIS	3185516	13784498	41	-1418	-3060	-3661	1		14,15	1	1
4216700035	GALVESTON	3171804	13756841	49	-1461	-3333	-3956	1		14,16	-	1
4216701276	GALVESTON	3189208	13741805	44	-1512	-3569	-4189	-		14,17	1	1
4216730253	GALVESTON	3199376	13730709	44	-1576	-3793	-4400	1		14,18	1	-
4216701448	GALVESTON	3216428	13690231	38	-1692	-4325	-5046	1		14,19	1	1
4216701916	GALVESTON	3262869	13645555	26	-1860	-4976	-5837	-		14,21	-	1
4216701072	GALVESTON	3260602	13640805	3	-1827	-5025	-5944	-		14,22	-	1
4247100148	WALKER	2993195	14179801	270	-	-	-	-		15,1	1	1
4233900006	MONTGOMERY	3036273	14083156	249	196	24	-80	1		15,2	-	-
4233900910	MONTGOMERY	3064315	14056109	196	18	-384	-488	1		15,3	-	1
4233901109	MONTGOMERY	3059096	14008323	198	-162	-723	-917	1		15,4	1	1
4233901121	MONTGOMERY	3074233	13994780	148	-373	-868	-1021	1		15,5	-	-
4233901879	MONTGOMERY	3075720	13994549	160	-390	-868	-1021	1		15,6	-	1
4233901425	MONTGOMERY	3085052	13977837	137	-497	-935	-1150	-		15,7	-	-



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UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4233901779	MONTGOMERY	3087548	13976828	141	-503	-955	-1185	-		15,8	-	-
4233901420	MONTGOMERY	3091122	13974489	127	-533	-962	-1199	1		15,9	-	1
4233901416	MONTGOMERY	3092923	13975016	129	-533	-962	-1199	1		15,10	-	-
4233901737	MONTGOMERY	3104608	13970210	120	-578	-1026	-1316	1		15,11	1	1
4220101017	HARRIS	3133652	13930412	92	-844	-1537	-1816	1		15,12	-	1
4220102968	HARRIS	3124966	13919816	91	-885	-1537	-1789	1		15,13	-	-
4220102972	HARRIS	3121176	13915049	83	-881	-1525	-1860	-		15,14	1	1
4220132052	HARRIS	3145109	13893940	70	-1089	-1772	-2148	1		15,15	-	-
4220132062	HARRIS	3154843	13888260	65	-1133	-1879	-2232	1		15,16	1	1
4220102936	HARRIS	3157699	13850790	39	-1273	-2234	-2702	1		15,17	1	1
4216701132	GALVESTON	3253542	13694401	24	-1764	-4481	-5174	-		15,20	-	1
4216701080	GALVESTON	3253467	13686022	0	-1735	-4521	-5273	-		15,21	-	1
4216701075	GALVESTON	3261589	13689925	17	-1765	-4593	-5276	-		15,22	-	1
4216701846	GALVESTON	3277409	13658895	17	-1915	-4906	-5756	-		15,23	-	1
4247100180	WALKER	3026813	14161689	363	-	-	-	-		16,1	1	1
4247100189	WALKER	3046759	14132465	308	-	326	257	-		16,2	1	1
4233900868	MONTGOMERY	3067443	14090371	263	197	-96	-161	1		16,5	1	1
4233900901	MONTGOMERY	3069980	14071542	344	174	-277	-413	1		16,6	1	1
4233900086	MONTGOMERY	3087438	14060771	249	-58	-404	-535	1		16,7	1	1
4233901718	MONTGOMERY	3140351	13983254	116	-493	-1126	-1508	1		16,10	1	1
4233901731	MONTGOMERY	3143316	13941097	74	-879	-1549	-1904	1		16,11	1	-
4220107603	HARRIS	3162675	13941824	91	-957	-1594	-2076	1		16,12	1	1
4220102722	HARRIS	3177201	13914485	60	-1082	-1736	-2214	1		16,13	1	1



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				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4220106223	HARRIS	3240265	13833451	26	-1419	-2953	-3656	1		16,14	1	1
4220106044	HARRIS	3223609	13798761	34	-1438	-3296	-3946	1		16,15	1	1
4207103062	CHAMBERS	3255281	13807332	18	-1502	-3471	-4177	-		16,16	1	1
4207103096	CHAMBERS	3249821	13772543	20	-1652	-3801	-4583	1		16,17	1	1
4216730091	GALVESTON	3300432	13678884	15	-1904	-4861	-5653	1		16,19	1	1
4270640380	GALVESTON	3351557	13618980	140	-2217	-5809	-6733	-		16,20	1	1
4247100204	WALKER	3069449	14299063	289	-	-	-	-		17,1	-	-
4247100014	WALKER	3085508	14264633	135	-	-	-	-		17,2	1	-
4247130202	WALKER	3075406	14191203	373	-	-	-	-		17,3	-	-
4247130251	WALKER	3093703	14169078	402	-	552	367	-		17,4	1	-
4247130011	WALKER	3109365	14164886	389	-	425	358	-		17,5	-	-
4247130232	WALKER	3114707	14127559	390	236	-3	-51	1		17,6	1	-
4240730480	SAN JACINTO	3154365	14118132	340	36	-317	-487	1		17,7	1	-
4240730018	SAN JACINTO	3153334	14087905	258	-79	-422	-682	1		17,8	1	-
4233901841	MONTGOMERY	3177761	14000802	105	-600	-1029	-1336	1		17,10	1	-
4233930849	MONTGOMERY	3185803	13987257	112	-712	-1200	-1559	1		17,11	-	1
4220130958	HARRIS	3190281	13954745	109	-981	-1578	-1977	1		17,12	1	1
4220101065	HARRIS	3205824	13942129	71	-1108	-1755	-2175	1		17,14	1	1
4220132265	HARRIS	3207367	13930918	90	-1174	-1883	-2314	1		17,15	-	-
4220102658	HARRIS	3208677	13918834	70	-1214	-1946	-2463	1		17,16	1	1
4207100226	CHAMBERS	3267660	13884130	60	-1363	-2775	-3285	1		17,17	-	1
4229103880	LIBERTY	3225031	13961832	90	-1152	-1706	-2088	1		17,13	1	1



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UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4216700956	GALVESTON	3327956	13741139	16	-1794	-4557	-5372	1		17,18; 18,19; 19,10	1	1
4216702012	GALVESTON	3315040	13704588	5	-1798	-4768	-5619	-		17,19	-	1
4245530401	TRINITY	3107583	14304139	181	-	-	-	-		18,1	1	-
4240700127	SAN JACINTO	3137796	14189822	329	-	315	169	-		18,2	1	1
4240730033	SAN JACINTO	3147134	14158348	315	-	29	-79	1		18,3	1	1
4240730078	SAN JACINTO	3176295	14129710	240	65	-352	-481	1		18,4	1	1
4240730468	SAN JACINTO	3187378	14131980	336	115	-360	-479	1		18,5	-	-
4240730453	SAN JACINTO	3168189	14117692	265	46	-371	-595	1		18,6	1	-
4240700156	SAN JACINTO	3173602	14096984	253	-124	-543	-778	1		18,7	1	1
4240700214	SAN JACINTO	3183939	14074088	149	-265	-685	-978	1		18,8	1	1
4229105018	LIBERTY	3216828	14026434	144	-557	-1028	-1396	1		18,11	1	1
4229104384	LIBERTY	3268674	13912567	49	-1360	-2542	-2978	1		18,13	1	1
4207101074	CHAMBERS	3276244	13882600	41	-1376	-2875	-3336	1		18,14	-	1
4207100972	CHAMBERS	3292245	13845355	3	-1418	-3351	-3864	1		18,15	1	1
4207131458	CHAMBERS	3290625	13866801	29	-1420	-3136	-3639	1		18,16	1	1
4207102696	CHAMBERS	3304959	13820903	18	-1499	-3636	-4381	1		18,17	1	1
4207102740	CHAMBERS	3316597	13805038	20	-1532	-3860	-4626	1		18,18	-	1
4270630042	GALVESTON	3357754	13663967	75	-2112	-5426	-6293	-		18,20	1	1
4237330154	POLK	3205385	14219616	243	-	378	293	-		19,1	1	-
4237300037	POLK	3224526	14182371	143	75	-125	-163	1		19,2	1	-
4229102431	LIBERTY	3242955	14015259	126	-815	-1335	-1671	1		19,5	1	1
4229102426	LIBERTY	3268608	13981889	103	-1092	-1756	-2204	1		19,6	1	1



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4229102897	LIBERTY	3266262	13953913	87	-1197	-2109	-2547	1		19,7	-	-
4229103711	LIBERTY	3292923	13932297	10	-1246	-2451	-2917	1		19,8	1	-
4207102466	CHAMBERS	3330240	13790181	4	-1591	-4014	-4854	-		19,9	-	1
4207102432	CHAMBERS	3329054	13778565	9	-1599	-4095	-4867	1		19,11	1	1
4216700959	GALVESTON	3344192	13734726	17	-1866	-4643	-5469	1		19,12	1	1
4270640031	GALVESTON	3373505	13648977	90	-2192	-5692	-6551	1		19,13	1	1
4245530485	TRINITY	3184384	14379819	352	-	-	-	-		20,1	1	-
4245530023	TRINITY	3199016	14353824	356	-	-	-	-		20,2	1	-
4237300030	POLK	3216792	14282763	260	-	865	811	-		20,3	-	-
4237330120	POLK	3240250	14241156	231	-	366	349	-		20,4	-	-
4237330975	POLK	3258457	14172995	313	169	-188	-246	-		20,5	1	-
4237300359	POLK	3280142	14144830	197	-197	-435	-649	1		20,6	1	-
4240700021	SAN JACINTO	3250254	14130518	79	-253	-469	-654	1		20,7	1	-
4237330505	POLK	3292193	14121049	162	-372	-681	-975	1		20,8	1	-
4229100189	LIBERTY	3300446	14091552	71	-676	-921	-1237	1		20,9	1	-
4229102169	LIBERTY	3307826	14013016	66	-1135	-1722	-2146	1		20,11	1	-
4229102104	LIBERTY	3318739	13974394	80	-1221	-2163	-2712	1		20,12	1	-
4229104537	LIBERTY	3344207	13902623	31	-1356	-3052	-3758	1		20,13	1	-
4207101209	CHAMBERS	3352524	13864734	35	-1507	-3576	-4246	1		20,14	-	-
4207103422	CHAMBERS	3349459	13835998	30	-1583	-3824	-4603	1		20,15	-	-
4237330777	POLK	3275376	14344905	165	-	-	-	-		21,1	-	-
4237300010	POLK	3266159	14296472	256	-	-	-	-		21,2	-	-
4237330216	POLK	3302799	14235577	345	-	199	133	-		21,3	1	-



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4237330091	POLK	3313397	14185598	345	221	-95	-303	1		21,4	1	-
4237300423	POLK	3327426	14132941	166	-253	-619	-967	1		21,5	1	-
4229101802	LIBERTY	3341840	13990841	68	-1209	-2176	-2687	1		21,7	1	-
4270840130	HIGH ISLAND-L.B.	3451926	13688501	106	-2353	-5817	-6736	1		21,9	1	-
4229104841	LIBERTY	3394974	13903121	37	-1586	-3402	-4079	1		21,10	1	-
4207102177	CHAMBERS	3405568	13846241	29	-1644	-4071	-4887	1		21,11	-	-
4200530174	ANGELINA	3271494	14385035	191	-	-	-	-		22,1	-	-
4200530171	ANGELINA	3307758	14369912	200	-	-	-	-		22,2	1	-
4237330484	POLK	3315940	14333428	182	-	-	-	-		22,3	1	-
4237300003	POLK	3330733	14306754	180	-	718	633	-		22,4	-	-
4245700477	TYLER	3361942	14192287	291	158	-132	-315	1		22,5	1	-
4245700063	TYLER	3378755	14142561	135	-322	-637	-931	1		22,6	1	-
4229100333	LIBERTY	3394987	13957664	63	-1412	-2788	-3476	1		22,8	1	-
4224502143	JEFFERSON	3423771	13912999	33	-1562	-3376	-4114	1		22,9	-	-
4207131302	CHAMBERS	3396343	13877975	49	-1597	-3693	-4458	1		22,10	1	-
4245730130	TYLER	3396656	14284752	251	-	-	-	-		23,1	1	-
4219900634	HARDIN	3423556	14083853	110	-897	-1636	-2039	1		23,5	1	-
4219900674	HARDIN	3413167	14048530	87	-1134	-2041	-2441	1		23,6	1	-
4219902148	HARDIN	3424659	14001875	37	-1237	-2374	-2980	1		23,7	1	-
4224531562	JEFFERSON	3430838	13977612	34	-1322	-2705	-3247	1		23,8	1	-
4224502265	JEFFERSON	3458716	13901936	32	-1665	-3659	-4438	1		23,9	1	-
4260600055	HIGH ISLAND-L.B.	3473255	13790891	18	-2147	-4997	-5846	1		23,10	1	-
4270840154	HIGH ISLAND-L.B.	3487814	13665006	104	-2545	-6229	-7211	1		23,11	1	-



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4270800057	HIGH ISLAND-L.B.	3525524	13661796	83	-2696	-6555	-7521	-		23,12	1	-
4200500192	ANGELINA	3426789	14382101	137	-	-	-	-		24,1	1	-
4245730119	TYLER	3443937	14299327	225	-	-	-	-		24,2	1	-
4245700057	TYLER	3426146	14250227	318	-	318	165	1		24,3	1	-
4219931816	HARDIN	3451154	14089450	80	-970	-1586	-1904	1		24,7	-	-
4245700245	TYLER	3459875	14189085	177	-124	-334	-495	1		24,4	1	-
4219900335	HARDIN	3475358	14085243	86	-1057	-1569	-2057	1		24,8	1	-
4219900356	HARDIN	3482716	14057271	32	-1213	-1898	-2343	1		24,9	1	-
4224500541	JEFFERSON	3487695	13963704	27	-1475	-3270	-3825	1		24,10	1	-
4224100253	JASPER	3459178	14324489	204	-	-	-	-		25,1	1	-
4245700043	TYLER	3472958	14229220	211	-	106	-102	-		25,2	1	-
4224100205	JASPER	3517059	14098802	36	-1162	-1650	-2080	1		25,6	1	-
4219931811	HARDIN	3495757	14083618	58	-1151	-1599	-2177	1		25,7	1	-
4224500169	JEFFERSON	3504414	13986156	31	-1353	-3143	-3557	1		25,8	1	-
4224501637	JEFFERSON	3519013	13911625	11	-1772	-4069	-4699	1		25,9	1	-
4224501318	JEFFERSON	3529145	13948042	15	-1538	-3644	-4307	1		25,11	-	-
4240330436	SABINE	3522092	14378152	243	-	-	-	-		26,1	1	-
4236130791	ORANGE	3555394	14001690	46	-1368	-3240	-3860	1		26,5	1	-
4270800010	HIGH ISLAND-L.B.	3556053	13787026	50	-2308	-5503	-6294	1		26,6	1	-
4224501501	JEFFERSON	3559931	13916103	16	-1683	-4283	-4972	1		26,7	1	-
4240330278	SABINE	3568413	14416119	230	-	-	-	-		27,1	1	-
4235130521	NEWTON	3580397	14366183	294	-	-	-	-		27,2	1	-
4235100048	NEWTON	3591334	14295546	297	-	248	268	1		27,3	1	-



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4235100096	NEWTON	3593908	14149152	88	-731	-1855	-2149	1		27,4	1	-
4235100289	NEWTON	3596056	14055131	46	-1405	-2998	-3550	1		27,7	1	-
4236100328	ORANGE	3571316	13967583	18	-1474	-3811	-4394	1		27,8	1	-
4224530358	JEFFERSON	3593340	13845508	2	-2029	-5161	-5976	1		27,9	1	-
4224503343	JEFFERSON	3603603	13830854	19	-2159	-5431	-6216	1		27,10	1	-
4236100480	ORANGE	3610937	13976902	11	-1418	-3877	-4530	1		27,11	1	-
1702302055	CAMERON	3604744	13897763	0	-1819	-4757	-5438	1		27,12	1	-
1708504222	SABINE	3695520	14420161	310	-	-	-	-		28,1	1	-
1711500027	VERNON	3691463	14385027	189	-	-	-	-		28,2	1	-
1711520004	VERNON	3690147	14354439	179	-	-	-	-		28,3	1	-
4235100425	NEWTON	3637067	14338257	349	-	-	360	-		28,4	1	-
1711588000	VERNON	3700776	14295663	178	117	-	-	-		28,5	1	-
1701120616	BEAUREGARD	3688288	14265863	126	-120	-806	-1079	1		28,6	1	-
1701100642	BEAUREGARD	3685825	14173642	135	-794	-1857	-2353	1		28,8	1	-
1701100398	BEAUREGARD	3706171	14141696	95	-910	-	-	-		28,9	1	-
1701900369	CALCASIEU	3714953	14095759	33	-	-	-	-		28,11	1	-
1701900004	CALCASIEU	3655898	14093511	43	-1170	-2726	-3227	1		28,12	1	-
1701920463	CALCASIEU	3675123	13999430	43	-1388	-3904	-4486	-		28,13	1	-
1701901997	CALCASIEU	3643658	13991893	3	-1430	-3839	-4365	1		28,14	1	-
1701901896	CALCASIEU	3693807	13985426	5	-	-4219	-4830	1		28,15	1	-
1702320127	CAMERON	3667760	13964687	3	-1535	-4276	-4912	1		28,17	1	-
1702320131	CAMERON	3671181	13956577	3	-1539	-4370	-4995	1		28,18	1	-
1702301968	CAMERON	3671477	13888687	0	-1889	-5134	-5867	1		28,20	1	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
1702301873	CAMERON	3636573	13887099	1	-1891	-4926	-5663	1		28,21	1	-
1702302045	CAMERON	3681173	13867075	3	-2067	-5430	-6183	1		28,22	1	-
1770000039	WEST CAMERON	3674437	13821909	53	-2406	-5797	-6592	1		28,24	1	-
4271040076	HIGH ISLAND-L.B.	3626149	13745095	93	-2705	-6491	-7374	-		28,25	1	-
1701121058	BEAUREGARD	3681552	14123931	85	-	-2492	-3020	1			1	-
1701901972	CALCASIEU	3668021	14015191	31	-	-3696	-4250	1			1	-
1702301877	CAMERON	3661782	13896651	30	-	-4927	-5652	1			1	-
1770020208	WEST CAMERON	3669933	13858196	69	-	-5392	-6146	1			1	-
1770040286	WEST CAMERON	3666545	13803639	72	-	-6057	-6838	1			1	-
1770041068	WEST CAMERON	3663462	13840315	83	-	-5550	-6319	1			1	-
4201500048	AUSTIN	2877375	13930178	177	-	-760	-1004	1			-	-
4201500049	AUSTIN	2877869	13929181	172	-	-773	-1020	1			-	-
4201500051	AUSTIN	2877892	13927712	170	-	-783	-1033	1			-	-
4201500070	AUSTIN	2878809	13928565	161	-	-789	-1037	1			-	-
4201530231	AUSTIN	2889660	13836517	164	-	-1221	-1639	1			-	-
4203903749	BRAZORIA	3036609	13613999	43	-	-4141	-4919	1			-	-
4203903754	BRAZORIA	3047299	13619216	47	-	-4072	-4868	1			-	1
4203904402	BRAZORIA	3115623	13585721	18	-	-5069	-5888	1			-	1
4203930506	BRAZORIA	3196422	13639252	22	-	-4899	-5709	1			-	1
4203931761	BRAZORIA	3073345	13642963	49	-	-4020	-4791	1			-	1
4203932110	BRAZORIA	3098315	13556453	30	-	-5322	-6146	1			1	1
4203932152	BRAZORIA	3099193	13717554	89	-	-3282	-3987	1			-	1
4203932165	BRAZORIA	3160862	13751411	57	-	-3320	-3949	1			-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4203932225	BRAZORIA	3138273	13573412	21	-	-5389	-6206	1			-	1
4207101083	CHAMBERS	3327006	13893949	35	-	-3053	-3663	1			1	-
4207131017	CHAMBERS	3412888	13823314	20	-	-4343	-5118	1			-	-
4208900345	COLORADO	2753685	13814135	187	-	-534	-736	1			-	-
4208900354	COLORADO	2730678	13804759	256	-	-404	-575	1			-	-
4208900436	COLORADO	2735624	13771098	297	-	-569	-747	1			-	-
4208900484	COLORADO	2705215	13733512	256	-	-596	-802	1			-	-
4208930229	COLORADO	2801136	13829340	232	-	-787	-1043	1			-	-
4208931029	COLORADO	2808114	13758752	173	-	-1129	-1354	1			-	-
4208931076	COLORADO	2853771	13790494	146	-	-1318	-1625	1			-	-
4208931932	COLORADO	2684134	13756391	313	-	-271	-453	1			-	-
4214931607	FAYETTE	2644669	13795071	300	-	234	99	1			-	-
4215702320	FORT BEND	3060059	13721435	40	-	-3156	-3880	1			-	1
4215731732	FORT BEND	2931387	13765385	125	-	-2043	-2667	1			-	1
4215732007	FORT BEND	3062154	13730669	72	-	-2996	-3666	1			-	-
4216701453	GALVESTON	3206644	13703120	30	-	-4181	-4878	1			1	1
4219903114	HARDIN	3489244	14095531	98	-	-1357	-1844	1			-	-
4220103607	HARRIS	3076564	13890976	105	-	-1662	-1927	1			1	-
4220132375	HARRIS	3017774	13914288	-	-	-	0	1			1	1
4223900014	JACKSON	2647285	13584362	125	-	-1244	-1574	1			-	-
4223900092	JACKSON	2701717	13620575	136	-	-1308	-1648	1			-	-
4223900457	JACKSON	2720969	13563758	87	-	-1938	-2481	1			-	-
4224130049	JASPER	3555331	14116796	109	-	-1671	-2160	1			-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4228500029	LAVACA	2566805	13648707	210	-	75	60	1			-	-
4228500191	LAVACA	2658347	13730922	201	-	-192	-368	1			-	-
4228500509	LAVACA	2612432	13619087	215	-	-566	-740	1			-	-
4228530514	LAVACA	2618284	13706591	300	-	190	100	1			-	-
4232100986	MATAGORDA	2980769	13502803	35	-	-5127	-5988	1			-	-
4232102672	MATAGORDA	2858721	13484780	41	-	-4168	-4873	1			-	-
4232102689	MATAGORDA	2919123	13515290	56	-	-4473	-5224	1			1	-
4232131008	MATAGORDA	3011058	13516574	49	-	-5202	-6070	1			-	1
4232131273	MATAGORDA	2876637	13441726	39	-	-4739	-5535	1			-	-
4233900104	MONTGOMERY	3076335	14047548	197	-	-480	-644	1			-	1
4233900139	MONTGOMERY	3087234	14038623	200	-	-536	-731	1			-	-
4233900154	MONTGOMERY	3085013	14039642	213	-	-515	-706	1			-	-
4233900926	MONTGOMERY	3093010	14055736	168	-	-506	-689	1			-	1
4233901872	MONTGOMERY	3136859	14044630	195	-	-574	-795	1			1	1
4233901887	MONTGOMERY	3034416	14045926	246	-	-275	-459	1			1	1
4233930614	MONTGOMERY	3050978	14098246	311	-	97	-10	1			-	-
4235100226	NEWTON	3598685	14116826	52	-	-2115	-2644	1			1	-
4235100521	NEWTON	3597823	14137106	63	-	-1839	-2358	1			-	-
4240700241	SAN JACINTO	3213148	14093284	181	-	-576	-844	1			1	-
4248100014	WHARTON	2843429	13764188	175	-	-1294	-1594	1			-	-
4248100989	WHARTON	2899455	13718330	110	-	-1927	-2549	1			-	-
4248101401	WHARTON	2754923	13631052	105	-	-1574	-2085	1			-	-
4248102377	WHARTON	2875932	13597296	89	-	-2966	-3641	1			-	-



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4248130650	WHARTON	2851969	13613660	102	-	-2669	-3313	1			-	-
4248133377	WHARTON	2880087	13708336	136	-	-1800	-2412	1			-	-
4260430041	BRAZOS-S.B.	2934530	13405301	15	-	-5592	-6440	1			-	-
4270640363	GALVESTON	3326009	13577311	108	-	-6167	-6968	1			1	-
4270830045	HIGH ISLAND-L.B.	3559293	13708406	87	-	-6246	-7147	1			1	-
4270830101	HIGH ISLAND-L.B.	3409024	13708136	70	-	-5237	-6137	1			1	-
4270830332	HIGH ISLAND-L.B.	3455840	13741700	89	-	-5298	-6153	1			1	-
4270830381	HIGH ISLAND-L.B.	3480411	13743671	32	-	-5498	-6358	1			1	-
4270840014	HIGH ISLAND-L.B.	3500534	13703787	86	-	-5892	-6809	1			1	-
4270840040	HIGH ISLAND-L.B.	3553746	13758527	78	-	-5724	-6522	1			1	-
4270840077	HIGH ISLAND-L.B.	3557153	13722138	96	-	-6108	-6980	1			1	-
4270840436	HIGH ISLAND-L.B.	3453586	13694583	93	-	-5654	-6533	1			1	-
4270840523	HIGH ISLAND-L.B.	3557894	13687983	96	-	-6303	-7222	1			1	-
4233930072	MONTGOMERY	2983371	14030637	325	257	-240	-492	1			-	1
4233900045	MONTGOMERY	3110772	14097287	355	238	-200	-354	1			1	-
4247300037	WALLER	2953770	13996459	283	215	-549	-751	-			-	1
1711588003	VERNON	3819764	14310065	268	213	-	-	-			1	-
4233900979	MONTGOMERY	3034405	14061704	240	160	-128	-296	1			-	-
4245700256	TYLER	3478923	14204336	192	88	-144	-334	-			1	-
4235130033	NEWTON	3585476	14206640	117	31	-812	-1265	-			1	-
1711520179	VERNON	3812013	14294610	231	-45	-	-	-			1	-
4246900519	VICTORIA	2608831	13483320	59	-64	-	-	-			-	-
4233901881	MONTGOMERY	3000771	13988881	250	-70	-757	-1017	-			-	1



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4233900103	MONTGOMERY	3075236	14048013	244	-97	-430	-605	1			-	-
4224100091	JASPER	3577589	14192122	119	-108	-944	-1406	-			1	-
4237300440	POLK	3345890	14139019	194	-175	-548	-894	-			-	-
4246901010	VICTORIA	2609000	13464573	40	-176	-	-	-			-	-
4233901142	MONTGOMERY	3109265	14028902	171	-207	-585	-851	-			-	1
4240700025	SAN JACINTO	3230140	14137097	131	-208	-358	-536	-			-	-
4233900202	MONTGOMERY	3088517	14032651	184	-229	-593	-807	1			1	1
4246900431	VICTORIA	2625760	13482594	89	-244	-	-	-			-	-
1711520135	VERNON	3796030	14280751	215	-257	-	-	-			1	-
1701120901	BEAUREGARD	3817485	14272690	208	-299	-	-	-			1	-
1701120800	BEAUREGARD	3696807	14237281	167	-306	-1106	-1466	-			1	-
4247330027	WALLER	2953791	13893090	194	-325	-1284	-1612	-			-	1
4208900270	COLORADO	2829786	13766319	179	-326	-1177	-1418	-			-	1
4220100465	HARRIS	3018519	13933329	168	-366	-1291	-1537	-			-	1
4223903354	JACKSON	2754710	13567640	72	-376	-2125	-2699	1			-	-
4248134100	WHARTON	2897681	13766685	137	-379	-1730	-2242	-			-	1
4248101695	WHARTON	2767005	13611238	100	-393	-1890	-2429	-			-	-
4245700160	TYLER	3387753	14133486	138	-397	-738	-1065	-			-	-
4246900421	VICTORIA	2626297	13478374	100	-428	-	-	-			-	-
4245700254	TYLER	3459896	14173451	177	-429	-462	-685	-			1	-
4247300199	WALLER	2940003	13858197	186	-436	-1385	-1800	1			-	1
4247330401	WALLER	2959627	13849025	157	-436	-1564	-1962	-			-	1
4246900757	VICTORIA	2626575	13477025	95	-445	-	-	-			-	-

The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4215731752	FORT BEND	2916308	13753365	141	-446	-1921	-2499	-			1	1
42201_18H	HARRIS	3002911	13900506	153	-459	-1488	-1768	-			-	-
4246900446	VICTORIA	2625436	13473714	92	-460	-	-	-			-	-
4215700016	FORT BEND	2975334	13836244	130	-475	-1731	-2140	-			-	1
4220100709	HARRIS	3039190	13936369	169	-477	-1214	-1438	-			-	1
4246931954	VICTORIA	2623335	13471210	98	-484	-	-	-			-	-
4220100883	HARRIS	3076488	13970387	112	-490	-973	-1192	-			-	1
4220104215	HARRIS	3079336	13966276	144	-493	-966	-1195	-			-	1
4233901423	MONTGOMERY	3087659	13982642	144	-506	-932	-1140	-			-	1
4220100882	HARRIS	3063125	13931156	128	-547	-1202	-1401	-			-	1
4233901734	MONTGOMERY	3111943	13965732	104	-569	-1085	-1400	-			-	1
4248134033	WHARTON	2872699	13662543	125	-570	-2277	-2908	1			1	1
4248132039	WHARTON	2876233	13672219	114	-575	-2157	-2834	-			-	1
1701100169	BEAUREGARD	3807254	14174419	111	-599	-	-	-			1	-
4246930067	VICTORIA	2629679	13443644	79	-600	-	-	-			-	-
4220103956	HARRIS	3026379	13884238	133	-626	-1717	-2009	-			-	1
4215701119	FORT BEND	2956644	13763233	116	-627	-2180	-2815	-			-	1
1701120407	BEAUREGARD	3696704	14188181	157	-642	-1710	-2189	-			1	-
4220100991	HARRIS	3087684	13945621	109	-663	-1140	-1373	-			-	1
4215730373	FORT BEND	2995929	13738973	90	-695	-2599	-3251	-			-	1
4223901936	JACKSON	2740488	13514744	36	-701	-2602	-3185	-			-	-
4229131549	LIBERTY	3211301	14007530	114	-707	-1183	-1527	-			-	1
4220103568	HARRIS	3060837	13893938	128	-709	-1664	-1922	-			-	1

The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
1701120532	BEAUREGARD	3771254	14165018	105	-723	-	-	-			1	-
4223902138	JACKSON	2764914	13504173	39	-727	-2904	-3513	-			-	-
4205730820	CALHOUN	2679383	13417366	50.5	-744	-	-	-			-	-
4223901917	JACKSON	2730543	13509558	26	-748	-2585	-3159	-			-	-
4205701248	CALHOUN	2696619	13417304	31	-757	-	-	-			-	-
4233901732	MONTGOMERY	3139462	13952336	85	-774	-1320	-1673	-			-	1
1701100298	BEAUREGARD	3783376	14142773	96	-774	-	-	-			1	-
4220103587	HARRIS	3071016	13894288	121	-788	-1626	-1881	-			-	1
4229100221	LIBERTY	3273957	14053804	61	-788	-1139	-1462	-			1	-
4220104089	HARRIS	3035963	13863454	99	-790	-1920	-2255	-			-	1
4215730122	FORT BEND	2975216	13690670	98	-800	-2850	-3550	-			-	1
4224100289	JASPER	3548309	14132618	120	-811	-1402	-1861	1			-	-
4205700442	CALHOUN	2714223	13419397	24	-819	-	-	-			-	-
4220103252	HARRIS	3107377	13908465	87	-826	-1526	-1804	1			1	1
4220104424	HARRIS	3045398	13817868	85	-853	-2254	-2681	-			-	1
4224130001	JASPER	3559718	14135328	107	-853	-1498	-1976	-			-	-
1701100755	BEAUREGARD	3682525	14144759	118	-859	-2213	-2728	1			1	-
4205701346	CALHOUN	2707846	13407182	22	-871	-	-	-			-	-
4223903188	JACKSON	2751704	13455881	40	-888	-3220	-3875	-			-	-
4205701250	CALHOUN	2717570	13413470	22	-907	-	-	-			-	-
4220103495	HARRIS	3104215	13849652	57	-974	-2127	-2517	-			-	1
4223903227	JACKSON	2792126	13465039	35	-984	-3606	-4257	-			-	-
4224130454	JASPER	3525620	14129502	61	-990	-1302	-1735	-			-	-

The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4215732782	FORT BEND	3084976	13777154	75	-993	-	-	-			-	1
4205700540	CALHOUN	2729570	13396954	14	-1005	-	-	-			-	-
4220105413	HARRIS	3086618	13793482	74	-1009	-2515	-3072	-			-	1
4223903265	JACKSON	2807077	13446118	27	-1029	-4043	-4724	-			-	-
4205730876	CALHOUN	2765864	13353587	35	-1048	-	-	-			-	-
4223903222	JACKSON	2789487	13451025	16	-1051	-3779	-4450	-			-	-
4223903224	JACKSON	2793593	13453241	13	-1054	-3801	-4468	-			-	-
4224130124	JASPER	3536362	14119786	75	-1071	-1482	-1935	-			-	-
4220104871	HARRIS	3111012	13809116	61	-1085	-2417	-2943	1			-	1
4215702129	FORT BEND	3011340	13695837	80	-1106	-3100	-3768	-			-	1
4220130129	HARRIS	3150594	13890752	61	-1108	-1817	-2195	-			-	1
4215702848	FORT BEND	3032817	13676658	62	-1113	-3436	-4119	-			-	1
42201_36H	HARRIS	3116309	13805428	53	-1116	-2453	-2995	-			-	-
4215730976	FORT BEND	3016775	13698897	84	-1140	-3106	-3774	-			-	1
1701100906	BEAUREGARD	3767486	14106542	47	-1151	-	-	-			1	-
4235130381	NEWTON	3590143	14093686	69	-1154	-2358	-2893	1			1	-
4220107836	HARRIS	3157941	13862265	43	-1155	-2145	-2564	-			-	1
4224130081	JASPER	3546915	14113116	81	-1173	-1655	-2136	-			-	-
1701900459	CALCASIEU	3733818	14082397	24	-1181	-	-	-			1	-
4224130020	JASPER	3527867	14110596	60	-1184	-1517	-1986	1			-	-
4229100325	LIBERTY	3332454	14031418	106	-1185	-1530	-2033	-			1	-
1701900018	CALCASIEU	3676338	14082593	55	-1192	-2965	-3543	1			1	-
4229132099	LIBERTY	3256656	13950046	94	-1198	-2045	-2453	-			-	1



The Delineation of the Burkeville Confining Unit and The Base of the Chicot Aquifer to Support the Development of the Gulf 2023 Groundwater Model

UWI/API	County	Easting	Northing	Elevation (ft, msl)				Sand Pick in Burkeville	Strike Section, Position	Dip Section Position	TWDB Gulf Coast Well	HGSD Study 2017
				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4215700781	FORT BEND	3058269	13757293	75	-1210	-2758	-3399	-			-	1
4229105498	LIBERTY	3223532	13943129	85	-1220	-1869	-2289	-			-	1
4219932343	HARDIN	3469300	14026713	50	-1227	-2057	-2711	-			-	-
4224130040	JASPER	3559215	14084181	59	-1230	-2215	-2739	1			-	-
4203902752	BRAZORIA	2986678	13629953	66	-1238	-3619	-4384	-			-	1
4203904823	BRAZORIA	3084470	13692220	57	-1253	-3491	-4248	-			-	1
4229101670	LIBERTY	3354505	13960652	77	-1257	-2608	-3191	-			1	-
4220105568	HARRIS	3143382	13794069	52	-1262	-2615	-3176	1			1	1
4229104765	LIBERTY	3369737	13908871	56	-1290	-3260	-3841	1			1	-
1701921836	CALCASIEU	3778246	14093255	55	-1300	-	-	-			1	-
4236100004	ORANGE	3525639	14021941	43	-1304	-2581	-3274	1			1	-
1701900255	CALCASIEU	3691413	14053200	41	-1310	-3393	-3958	1			1	-
4220102801	HARRIS	3198034	13863229	58	-1314	-2372	-2907	-			1	1
4236130810	ORANGE	3592735	14012956	45	-1335	-	-	-			1	-
4229103914	LIBERTY	3246082	13923709	56	-1342	-2271	-2701	-			1	-
4220132613	HARRIS	3188041	13838061	42	-1350	-2529	-3086	-			1	1
4236100474	ORANGE	3596309	13990078	14	-1354	-3699	-4281	1			1	-
4219931298	HARDIN	3455411	13984901	58	-1365	-2553	-3244	-			-	-
4229101684	LIBERTY	3364454	13945817	72	-1372	-2782	-3388	-			-	-
4220105575	HARRIS	3149977	13795882	48	-1373	-2614	-3166	-			-	-
4229131788	LIBERTY	3276614	13901662	30	-1376	-2688	-3158	-			-	1
4203930346	BRAZORIA	3133771	13751673	68	-1379	-3124	-3778	-			-	1
4236101391	ORANGE	3607358	13974135	27	-1391	-3917	-4491	1			-	-



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				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
4220131544	HARRIS	3174741	13780971	49	-1395	-3033	-3608	-			-	1
4220105710	HARRIS	3195310	13763458	43	-1395	-3371	-3974	-			-	1
4203900015	BRAZORIA	3125742	13762622	58	-1398	-2931	-3580	-			-	1
4224500123	JEFFERSON	3443571	13963554	39	-1399	-2794	-3461	-			1	-
4203900847	BRAZORIA	3167639	13732203	53	-1401	-3589	-4237	1			1	1
4224531310	JEFFERSON	3459274	13973746	58	-1401	-2702	-3407	-			-	-
4220105675	HARRIS	3215095	13774513	18	-1420	-3431	-4071	-			-	1
4236100490	ORANGE	3606544	13962811	4	-1430	-4041	-4649	-			1	-
1701901458	CALCASIEU	3765816	14032913	7	-1443	-	-	-			1	-
4236100555	ORANGE	3591530	13975119	13	-1457	-3843	-4437	-			1	-
4216730792	GALVESTON	3189342	13725056	41	-1462	-3773	-4418	-			-	1
4220106114	HARRIS	3162884	13773437	58	-1462	-3015	-3606	1			1	1
4203904181	BRAZORIA	3090326	13611578	40	-1470	-4512	-5330	1			-	1
4224531707	JEFFERSON	3427021	13944625	67	-1481	-2954	-3652	-			-	-
4224531955	JEFFERSON	3424258	13946363	51	-1485	-2949	-3647	1			1	-
1701902072	CALCASIEU	3686118	14007565	10	-1487	-3917	-4503	-			1	-
4224531930	JEFFERSON	3494144	13978461	44	-1490	-2756	-3459	-			-	-
4203904271	BRAZORIA	3148672	13643127	30	-1490	-4534	-5350	1			-	1
4203930350	BRAZORIA	3062183	13556835	34	-1500	-5038	-5863	1			1	1
4236101318	ORANGE	3605986	13926521	23	-1535	-4442	-5072	1			1	-
4224502238	JEFFERSON	3440738	13918485	39	-1539	-3337	-4075	1			1	-
4224532572	JEFFERSON	3513429	13945272	21	-1558	-3448	-4175	1			1	-
4229132184	LIBERTY	3374202	13901853	53	-1567	-3313	-3985	-			-	-



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				Datum (ft)	Chicot Evangeline Contact	Top Burkeville	Bottom Burkeville					
1702300111	CAMERON	3693113	13956618	20	-1572	-4507	-5152	1			1	-
4203904811	BRAZORIA	3120692	13528463	4	-1586	-5906	-6755	-			1	1
4207131567	CHAMBERS	3388241	13845813	40	-1587	-4027	-4720	-			-	-
1701920202	CALCASIEU	3763560	13997889	3	-1620	-	-	-			1	-
4224502658	JEFFERSON	3452487	13868144	10	-1640	-4008	-4797	-			1	-
1702301599	CAMERON	3744138	13948164	7	-1642	-	-	-			1	-
4216700056	GALVESTON	3219079	13752176	31	-1663	-3689	-4330	-			-	1
4216731114	GALVESTON	3213815	13696338	25	-1670	-4234	-4923	-			-	1
1702300208	CAMERON	3752011	13963752	4	-1674	-	-	-			1	-
4216701481	GALVESTON	3225252	13721604	26	-1675	-4047	-4700	-			-	1
1702300509	CAMERON	3753135	13954942	5	-1683	-	-	-			1	-
4224501654	JEFFERSON	3517597	13927537	23	-1716	-3753	-4421	1			1	-
4270400071	BRAZOS-L.B.	3096220	13400163	79	-1720	-	-	-			1	1
1702322280	CAMERON	3736522	13935715	24	-1727	-	-	-			1	-
4216700958	GALVESTON	3369417	13755568	8	-1753	-4609	-5473	-			-	1
4216701387	GALVESTON	3234546	13698972	33	-1761	-4276	-4959	1			-	1
4216730702	GALVESTON	3227774	13667039	17	-1783	-4192	-4950	-			-	1
1702302079	CAMERON	3583382	13868144	18	-1801	-4905	-5760	1			1	-
4270430005	BRAZOS-L.B.	3092718	13361959	55	-1836	-	-	-			1	1
1702301562	CAMERON	3730912	13915094	1	-1853	-	-	-			1	-
4224502866	JEFFERSON	3476630	13837514	18	-1855	-4461	-5145	1			1	-
4270600086	GALVESTON	3272262	13595515	52	-1888	-5708	-6573	1			1	1
4270600027	GALVESTON	3289502	13569477	67	-1987	-4319	-5080	1			1	1



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				Datum (ft)	Chicot Evangeline Contact	Top Burkeville					
4270400070	BRAZOS-L.B.	3126078	13335957	77	-2109	-	-	-	-	1	1
4270440026	BRAZOS-L.B.	3140552	13334487	82	-2158	-	-	-	-	1	1
4260600010	HIGH ISLAND-L.B.	3554427	13816995	18	-2203	-5266	-6010	1	-	1	-
4270800022	HIGH ISLAND-L.B.	3436603	13758157	40	-2234	-5039	-5731	1	-	1	1
4270840138	HIGH ISLAND-L.B.	3509787	13731681	101	-2279	-5711	-6596	1	-	1	-
4270600124	GALVESTON	3336743	13518787	85	-2447	-	-	-	-	1	1
4271530011	SABINE PASS	3621515	13782682	96	-2519	-5889	-6703	-	-	1	-
4270840572	HIGH ISLAND-L.B.	3599484	13742520	90.6	-2545	-	-	-	-	1	-
1770000055	WEST CAMERON	3686531	13782794	73	-2627	-6206	-7063	1	-	1	-
4270840279	HIGH ISLAND-L.B.	3425662	13505458	81	-2640	-	-	-	-	1	1
4271040056	HIGH ISLAND-L.B.	3608927	13594437	100	-2862	-	-	-	-	1	-
1770140186	WEST CAMERON	3668413	13607955	78	-2929	-	-	-	-	1	-
1770140360	WEST CAMERON	3744779	13616349	82	-2938	-	-	-	-	1	-