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April 2, 2008

Mr. Scott Miller
Remedial Project Manager
U.S. Environmental Protection Agency, Region IV
4WD-SRTMB
61 Forsyth Street
Atlanta, Georgia 30303-3104

Subject: Response to U.S. EPA Memorandum dated December 22, 2006
Recommendation 6 in the Second Five-Year Review Report

Dear Mr. Miller:

On behalf of Beazer East, Inc. (Beazer), enclosed with this letter is our response to U.S. EPA's memorandum dated December 22, 2006, concerning the Beazer November 16, 2006 letter addressing Recommendation 6 of the Second Five-Year Review Report for the Cabot Carbon / Koppers Superfund Site, Gainesville, Florida (see Attachment A). Included with Attachment A are ten supporting figures: Figure 1 shows the borings and well locations; Figures 2-10 show the surface elevations and the thickness of the Hawthorn Group (HG) deposits upper, middle and lower clay units.

Attachment A includes a detailed evaluation of HG deposits clay unit surfaces and an assessment of potential DNAPL accumulation areas. Results of this evaluation indicate that topographic lows in the clay unit surfaces do not appear to correlate with DNAPL accumulation areas at this Site.

Please feel free to contact me at (303) 665-4390 if you have any questions or comments.

Sincerely,

James R. Erickson

James R. Erickson
Program Manager

Attachment
cc: William O'Steen, U.S. EPA
M. Brourman, BEI
M. Slenska, BEI

Attachment A:
Response to Comments
EPA's Memorandum Dated December 22, 2006

The following statement is made on pages 2 and 3 of U.S. EPA's December 22, 2006 memorandum, respectively:

> *"The figures provided by Beazer only provide a crude representation of clay top and bottom contours within this key area of interest. This condition is in part because the figures are scaled to show an area of more than 1300 acres, whereas the Koppers property occupies an area of less than 100 acres. Thus there is an inadequate detail of the elevations of clay tops and bottoms within the immediate area of the Koppers property."*
>
> *"In any case, there are apparently sufficient data within and immediately surrounding the Koppers property to produce a detailed upper clay contour map with a contour interval of less than 1 foot showing this specific subarea of Figure 1…An additional map is requested the shows the upper clay thickness across the Koppers property with a resolution of less than 1 foot (either a 0.5-foot interval or possibly a 0.1-foot interval."*

In response to this comment, GeoTrans recontoured the Hawthorn Group (HG) deposits upper, middle and lower clay unit surfaces to provide a more detailed analysis of the approximately 100-acre Site (see Figures 1-10). Geologic data from off-Site areas were utilized, where possible, for interpreting contoured surfaces at the Site property boundary. In addition, the contoured surfaces shown in Figures 2-10 incorporate the recent data from the off-Site Upper and Lower Hawthorn monitoring wells completed in November 2007.

The available borehole data at the Site do not support a HG deposits clay surface contour interval of less than 1 foot, as requested by the December 22, 2006 memorandum. Even with the over 194 borings and wells used to define the HG deposits upper clay unit surface (see Figure 1), these interpretive geologic data are insufficient to technically justify less than a 1-foot contour interval. Therefore, all clay surfaces and thickness contour plots where developed at a 1-foot contour interval.

The following statement is made on page 5 of U.S. EPA's December 22, 2006 memorandum:

> *"It is possible, given the existing data sets and sufficient data interpretation to (a) identify subareas within the four principal source areas where there is the greatest likelihood of DNAPL accumulation at the base of the surficial aquifer, based on concentration data, visible evidence of DNAPL and other contaminant-related information, (b) identify locations within the source area footprint where the top elevation and thickness of the uppermost Hawthorn clay indicate the greatest potential for DNAPL accumulation on top of the clay and/or greatest*

potential for DNAPL movement across the upper clay, and (c) propose a targeted investigation of those areas identified as having the greatest potential for DNAPL accumulation and migration through the clay and which have not been adequately investigated in previous studies, based on the outcome of steps (a) and (b) above."

Included with this Attachment are Figures 1-10 that address the U.S. EPA comments above. The contoured surfaces are limited to the approximately 100-acre Site, where a 1-foot contour interval is utilized for all HG deposits clay unit surfaces. The thickness contour maps for the clay units were developed by overlying the top and bottom surfaces and subtracting two surfaces. A detailed discussion of each clay unit surface and the potential for DNAPL accumulation are provided below. Figure 1 shows the location and IDs of all borings and wells used in the interpretation of these surfaces.

Upper Clay Unit

The HG deposits upper clay unit surface was developed from approximately 194 borings that terminate within or fully penetrate this clay unit (Figure 2). The HG deposits upper clay unit surface slopes from an approximate elevation of 165 feet above mean sea level (msl) in the southwestern corner of the Site to approximately 140 feet above msl at the northeastern corner (Figure 2). The approximately northeasterly slope of this clay surface is fairly uniform with a few localized highs and depressions in the surface. The contoured surface does not show any obvious low areas where DNAPL has the potential to accumulate on top of the upper clay. At the former South Lagoon, there is a minor depression at boring CPT-7S. However, this boring did not contain any evidence of DNAPL during the source area delineation investigation (GeoTrans, 2004).

The bottom of the HG deposits upper clay unit was developed from the approximately 65 borings that fully penetrate through this unit (Figure 3). Similar to the top of this clay unit, the base of this unit slopes to the northeast with the highest elevations in the southwestern corner of the Site (approximately 160 feet above msl) and the lowest elevation in the northeastern corner of the Site (approximately 136 feet above msl). The bottom of the upper clay unit steepens in the northeastern corner of the Site, reflecting a valley-like feature that parallels the Site property boundary in this area. The valley-like feature was likely present prior to the deposition of the upper clay unit.

The HG deposits upper clay unit thickness ranges from approximately 0.5 to 10 feet across the Site (Figure 4). The clay unit is thickest in the southwestern and northeastern areas of the Site and thinnest in the central area of the Site. The upper clay unit is thinnest (less than 1-foot) in an area that lies between the former South Lagoon and former North Lagoon (Figure 4). The former North Lagoon has a number of borings that indicates the upper clay unit is less than 1-foot beneath this area. Given the less than 1-foot thickness of the upper clay unit in the former North Lagoon area, it is reasonable to assume that this area represents the greatest likelihood for vertical migration of DNAPLs to the Upper Hawthorn.

The former North Lagoon and former South Lagoon have been thoroughly characterized over the past 10 years. No free-phase DNAPL has been observed in borings adjacent to the former South Lagoon. In addition, two temporary injection points and two monitoring wells were installed in the former North Lagoon as part of the In-Situ Biogeochemical Stabilization (ISBS) program. After approximately 3 months of monitoring, no measureable DNAPL has been detected in these four monitoring points. Given these previous and on-going investigations at the Site, Beazer does not recommend further Site-wide investigations looking for DNAPL pools above the HG deposits upper clay unit.

Middle Clay Unit

The HG deposits middle clay unit surface was developed from approximately 52 borings that terminate within or fully penetrate this clay unit (Figure 5). The HG deposits middle clay unit surface slopes radially away from a topographic high area in the west-central portion of the Site. The topographic high area is at an elevation of approximately 130 feet and it slopes to an elevation of approximately 100 feet above msl in the northeastern corner of the Site. This contoured surface is consistent with previous geophysical surveys and boring data for the Site. There are no potential DNAPL accumulation areas identified for this surface in the vicinity of the former source areas.

The bottom of the HG deposits middle clay unit was developed from the approximately 46 borings that fully penetrate through this unit (Figure 6). The bottom surface of the middle clay unit closely approximates the top of this unit. A topographic high (approximately 122 feet above msl) is present in the west-central portion of the Site and the surface slopes radially away from this elevated area. Two topographically low areas (approximately 80 and 90 feet above msl) are present along the northern property boundary, reflecting topographically low areas in deposits below the middle clay unit.

The HG deposits middle clay unit thickness ranges from approximately 5 to 30 feet, with an average thickness of approximately 10 feet thick across the Site. (Figure 7). The middle clay unit is thickest in the northern and southern areas of the Site and thinnest in the central portion of the Site in the vicinity of the former North Lagoon. Although the middle clay unit is thinnest in the vicinity of the former North Lagoon, the approximately 5 feet of low-permeability middle clay deposits in this area would limit vertical migration of DNAPLs.

Limited DNAPL recovery has been on-going since July 2004 at five Upper Hawthorn wells at the Site. Two wells are located in the vicinity of the former North Lagoon (HG-10S and HG-16S), two wells are located in the former Process area (HG-11S and HG-15S) and one well is located in the former Drip Track area (HG-12S) (see Figure 1). On average each of these HG wells produce approximately 0.5 gallons of DNAPL every 2 weeks. The HG deposits middle clay unit surface does not contain any obvious low areas at these well locations where DNAPL would be expected to pool. The limited DNAPL accumulation at these five well locations does not appear to correlate with topographic low areas in the middle clay unit surface. Hence, the surface

topography of the middle clay unit is not the primary mechanism controlling the location and accumulation of free-phase DNAPL beneath the former source areas.

Beazer is currently conducting an enhanced DNAPL recovery pilot program in the Upper Hawthorn in the vicinity of the former North Lagoon. A total of four Upper Hawthorn wells (one extraction well, one injection well and two monitoring wells) were installed and screened to the top of the middle clay unit. No measureable quantities of DNAPL have been observed in any of these wells since they were installed in January 2008. In addition, less than a few tenths of a gallon of DNAPL has been recovered after approximately 1 month of pumping in the recovery well.

Given that low areas in the HG deposits middle clay unit surface do not appear to be controlling DNAPL accumulation, Beazer does not recommend additional investigations to better define the middle clay unit surface.

Lower Clay Unit

The HG deposits lower clay unit surface was developed from approximately 30 borings that terminate within or fully penetrate this clay unit (Figure 8). The surface of the lower clay unit contains a topographic high in the southern and western-central area of the Site. This clay surface primarily slopes to the east and northeast. The topographic high area in the west-central area of the Site is approximately 74 feet above msl and the topographic low elevation in the northeastern corner of the Site is at approximately 60 feet above msl. A localized topographic low area is present to the north of the former North Lagoon. This localized depressed area is projected from geologic core collected from monitoring wells HG-16D and FW-6. The localized topographic low area has the potential for DNAPL accumulation; however, DNAPL has not been detected in monitoring well HG-16D since it was installed in 2004. Therefore, even though this topographic low has the potential for DNAPL accumulation, free-phase DNAPL has not collected in this area.

The bottom of the HG deposits lower clay unit was developed from the approximately 25 borings that fully penetrate through this unit (Figure 9). The bottom clay surface slopes toward the east-northeast, similar to the slope of the Ocala Formation erosional contact. The highest elevation of the bottom of the lower clay unit surface is 45 feet above msl in the southwestern corner of the Site and the lowest elevation of the base of this clay unit is 25 feet above msl in the northeastern corner of the Site.

Figure 10 displays the thickness of the HG deposits lower clay unit beneath the Site. The clay unit thickness ranges from approximately 25 to 38 feet. The lower clay unit is thickest in the northern portion of the Site (approximately 38 feet) along a plateau that runs east-west between monitoring wells FW-2 and FW-4. In general, the lower clay unit thins from the northern area of the Site toward the south. The thickness of the HG deposits lower clay unit is between 30 to 38 feet across the northern half of the Site and between 25 to 30 feet across the southern half of the Site.

Given that no DNAPL has been measured in the Lower Hawthorn monitoring wells above the lower clay unit, the substantial thickness of this clay layer and that the location of the thinnest clay is upgradient from all source areas (i.e., southwestern corner of the Site), we do not recommend further targeted investigations of the presence of DNAPL on the surface of the lower clay unit.

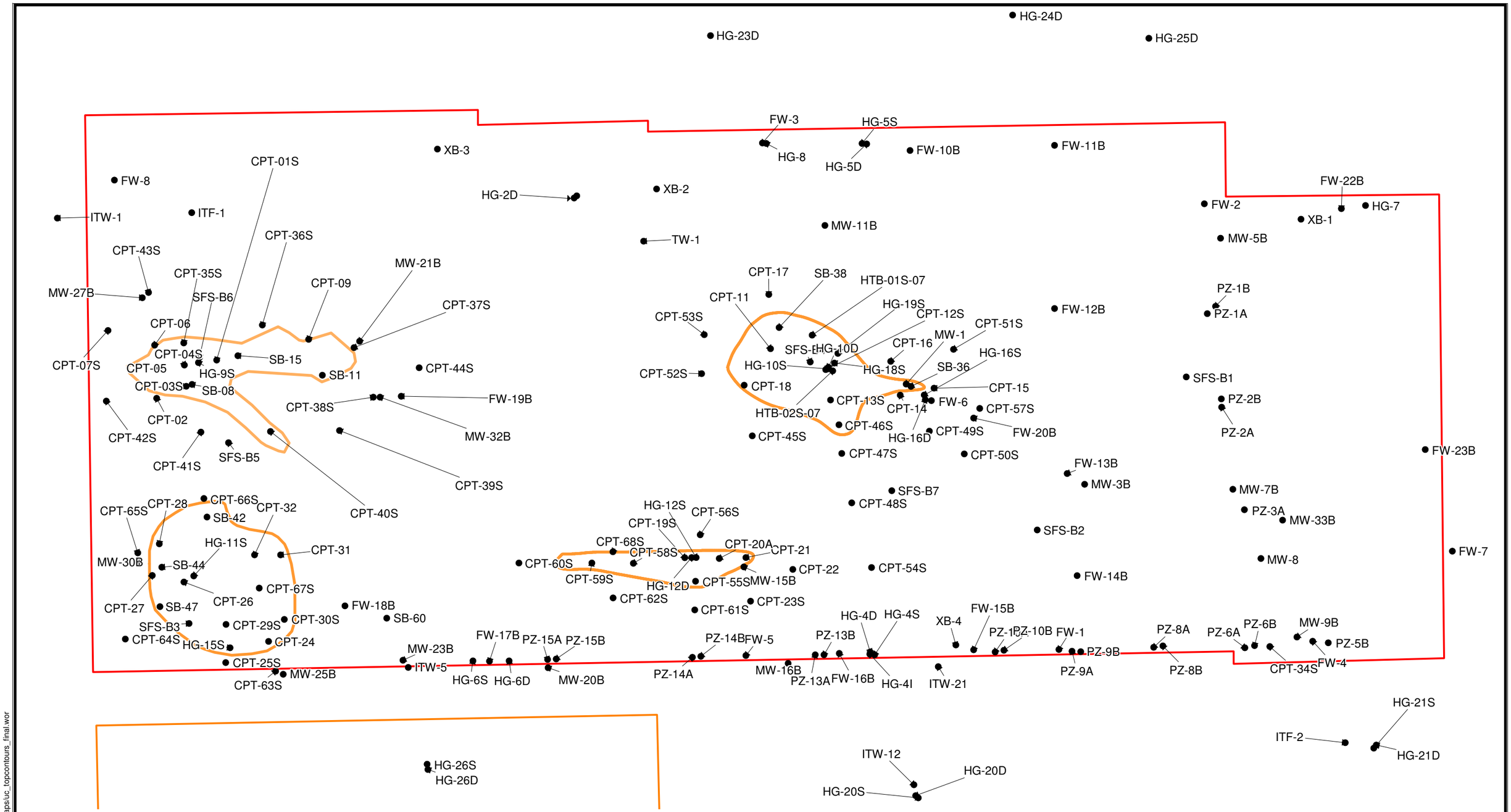
Conclusions

Detailed HG deposits clay unit surface elevation contour maps were developed for the upper, middle and lower clay units at the Site. Contour maps of the base of these clay units were also developed to allow for an evaluation of the spatial variability of the clay unit thickness. One of the objectives of the clay unit surface elevation contour maps was to evaluate on-Site locations where free-phase DNAPL could potentially accumulate if present in sufficient volumes. The results of this evaluation demonstrated that there are limited topographic lows in the upper, middle and lower clay unit surfaces where DNAPL accumulation would be expected. The few topographic lows identified for the middle and lower clay surface do not have evidence of DNAPL accumulation. Similarly, the five Upper Hawthorn monitoring wells with limited DNAPL recovery are not located in topographic low areas for the middle clay unit surface. Therefore, there does not appear to be a correlation between free-phase DNAPL and topographically low areas for the HG clay units.

Beazer does not recommend additional investigations to further characterize the surface topography of the clay units. The extensive number of borings and wells installed at this Site demonstrates that significant free-phase DNAPL pools are not present beneath the Site. One hypothesis that is supported by the extensive investigations performed at the Site is that the majority of the DNAPL is present at residual saturation within the Surficial Aquifer and HG deposits. Although residual DNAPL has the potential for being a long-term source to dissolved-phase groundwater impacts, it is not readily recoverable. The vast majority of the DNAPL released to the subsurface during the historical operation of the plant is contained by the physical properties of the DNAPL, in conjunction with geologic deposits. The majority of the DNAPL is at residual saturation and is currently immobile at this Site. The historical and limited DNAPL recovery in the Surficial Aquifer and HG deposits further supports the conceptual model of immobile DNAPL.

References

GeoTrans, 2004, Data Report for Additional Investigation of Hawthorn Group DNAPL Source Evaluation for the Koppers Industries Property, Cabot Carbon/Koppers Superfund Site, Gainesville, Florida, September, 2004.



Explanation

160.3 Well location

Former Source Area

0 215 430

SCALE IN FEET

W S N E

TITLE: Wells Located Within Hawthorn Group Deposits

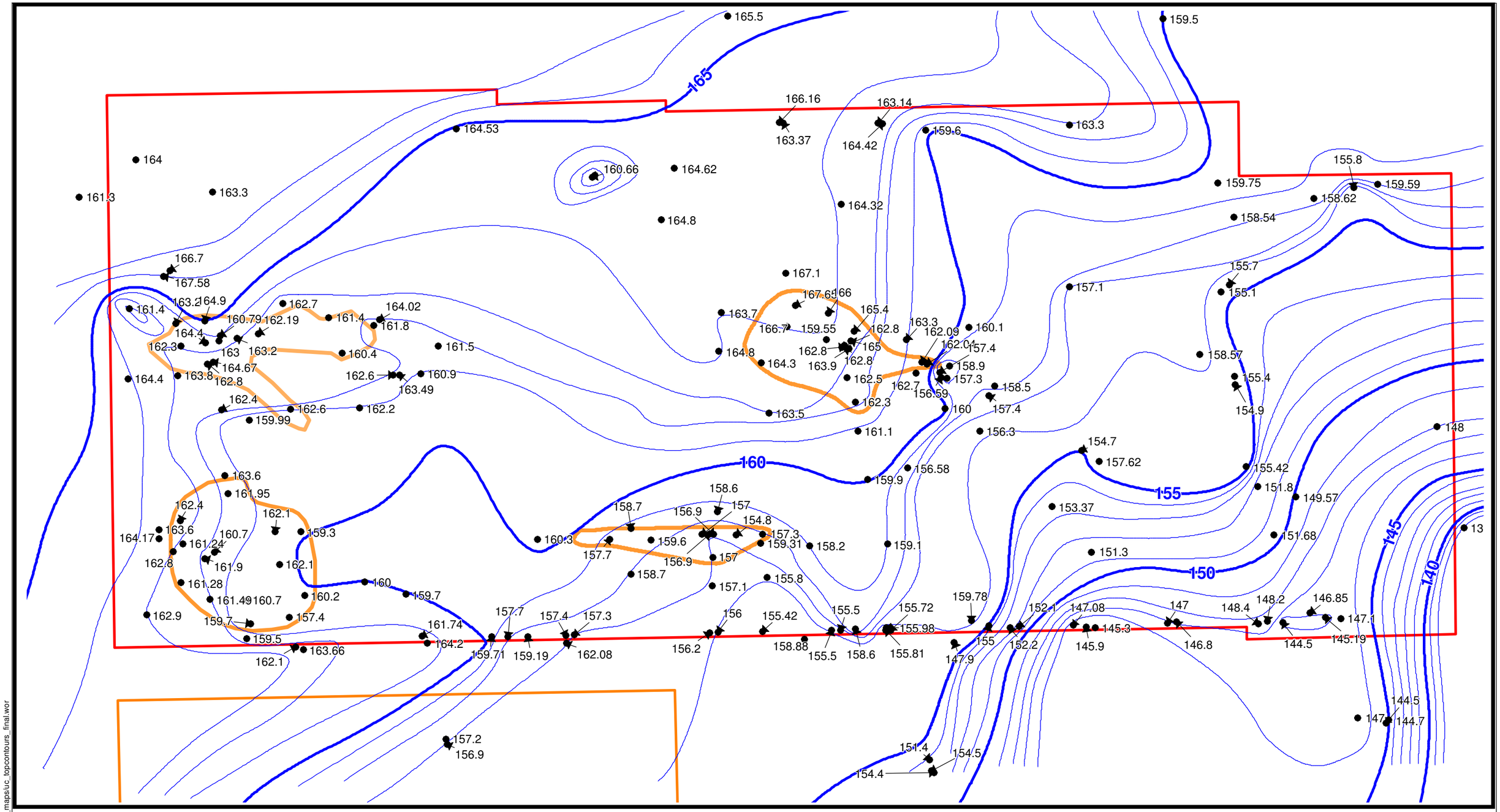
LOCATION: Gainesville, Florida

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DATE	2/26/2008

FIGURE: 1

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Explanation

160.3 ● Well location with clay unit elevation, in feet above msl

160 Clay surface contour elevation, in feet

Former Source Area

0 215 430

SCALE IN FEET

W S N E

TITLE: Elevation Contours for Top of Hawthorn Group Deposits -- Upper Clay Unit

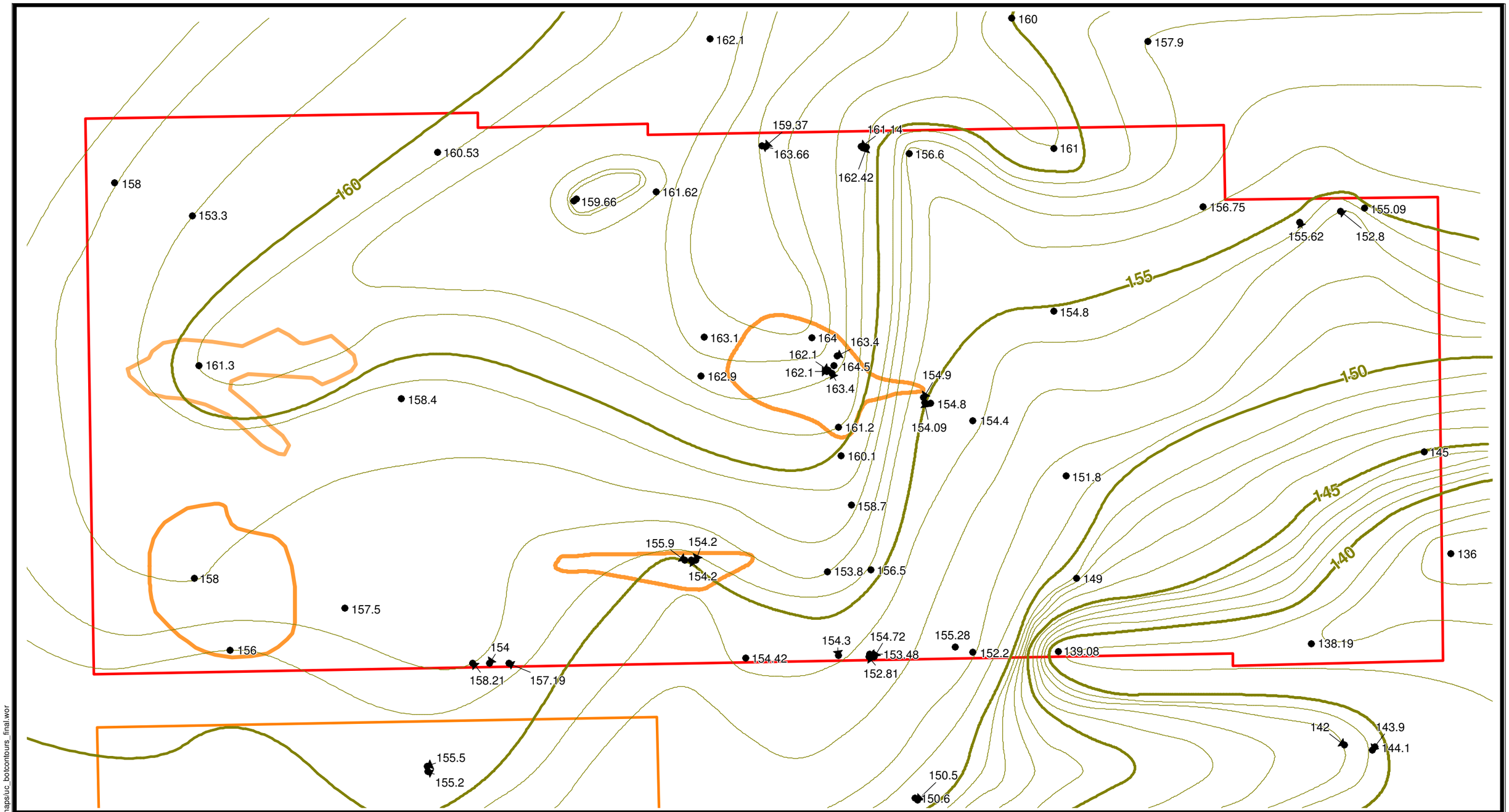
LOCATION: Gainesville, Florida

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FIGURE: 2

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Explanation

160.3 ● Well location with clay unit elevation in feet above msl

160 Clay surface contour elevation, in feet

Former Source Area

0 215 430

SCALE IN FEET

W S N E

TITLE: Elevation Contours for Bottom of Hawthorn Group Deposits -- Upper Clay Unit

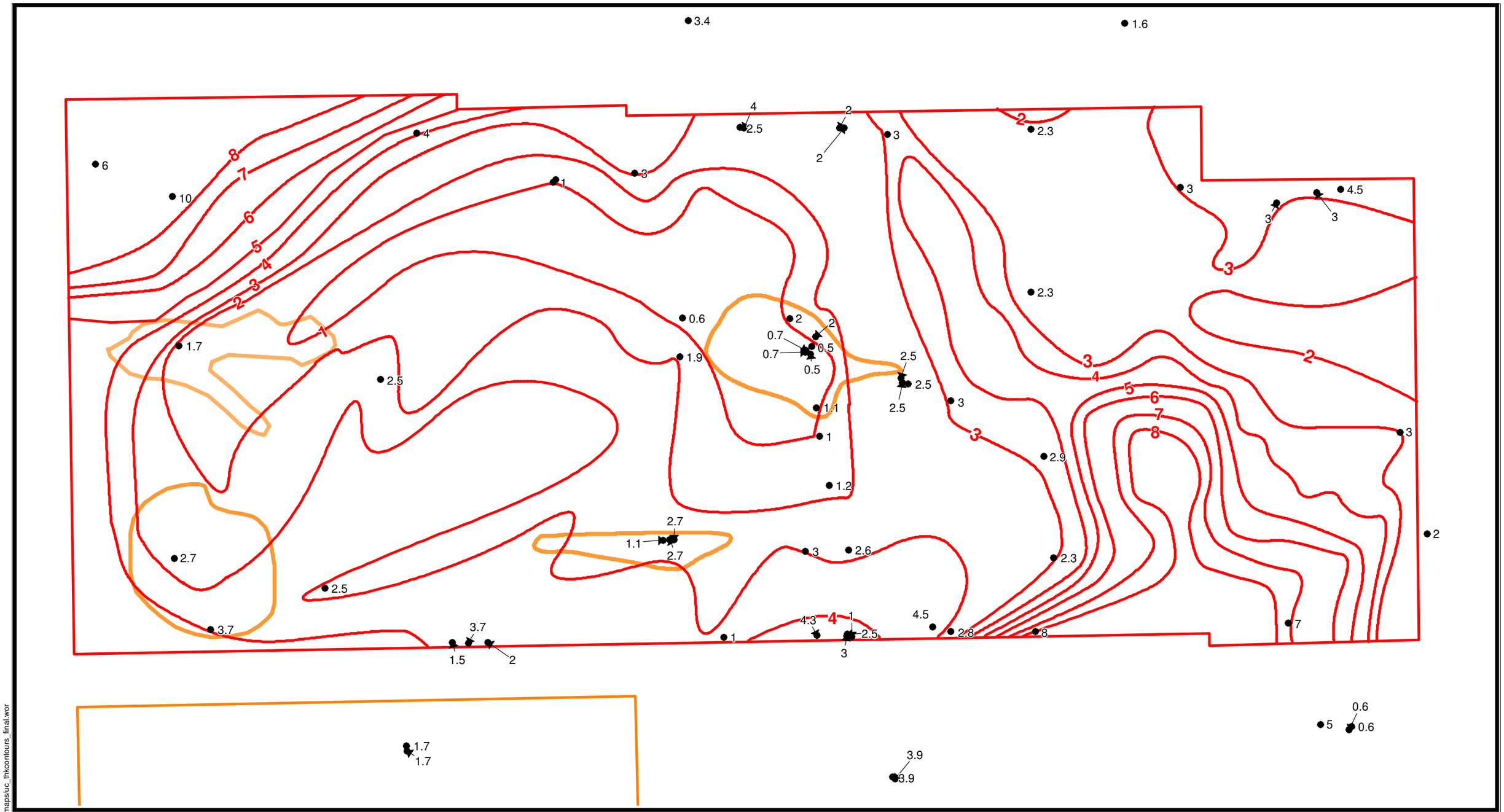
LOCATION: Gainesville, Florida

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FIGURE: 3

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Explanation

- 2.7 — Well location with clay unit thickness, in feet
- 5 — Clay thickness contour, in feet
- Former Source Area

0 215 430

SCALE IN FEET

W S E N

TITLE: Thickness Contours for Hawthorn Group Deposits -- Upper Clay Unit

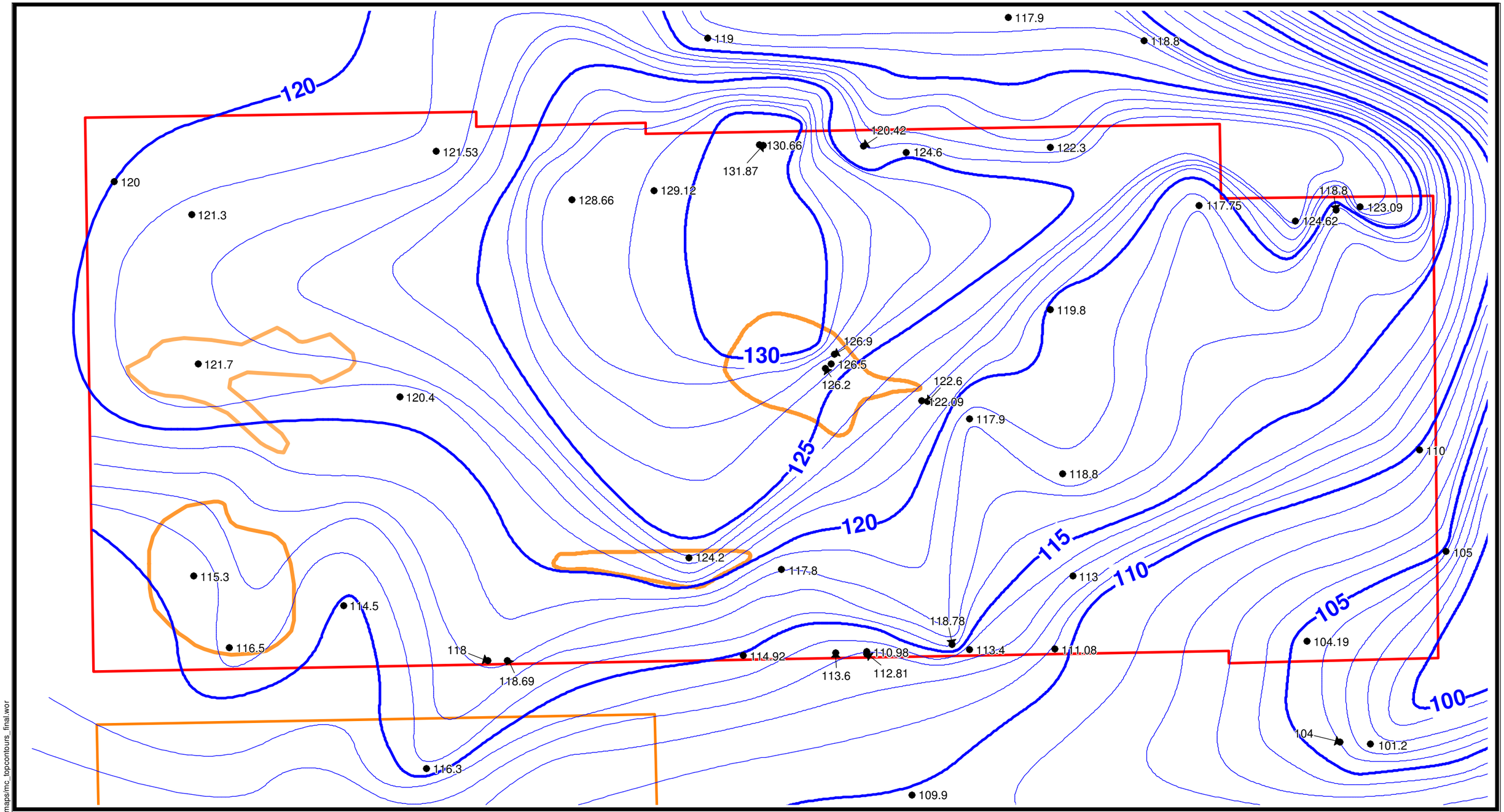
LOCATION: Gainesville, Florida

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FIGURE: 4

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Explanation

- 114.5 — Well location with clay unit elevation, in feet above msl
- 120 — Clay surface contour elevation, in feet
- Former Source Area

0 215 430

SCALE IN FEET

W S E N

TITLE: Elevation Contours for Top of Hawthorn Group Deposits -- Middle Clay Unit

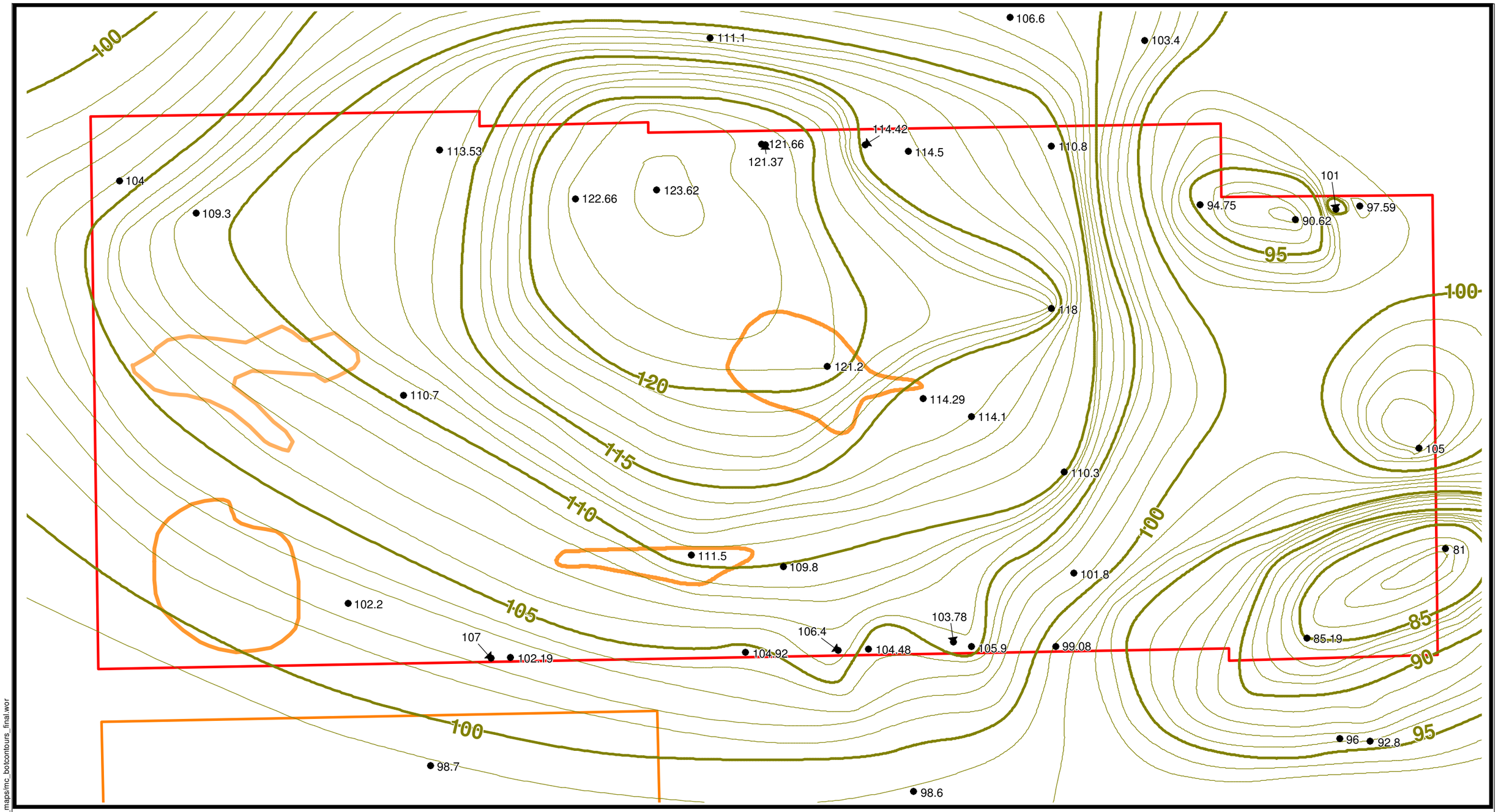
LOCATION: Gainesville, Florida

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FIGURE: 5

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Explanation

- 102.2 — Well location with clay unit elevation, in feet above msl
- 120 — Clay surface contour elevation, in feet
- Former Source Area

0 215 430

SCALE IN FEET

W S E N

TITLE: Elevation Contours for Bottom of Hawthorn Group Deposits -- Middle Clay Unit

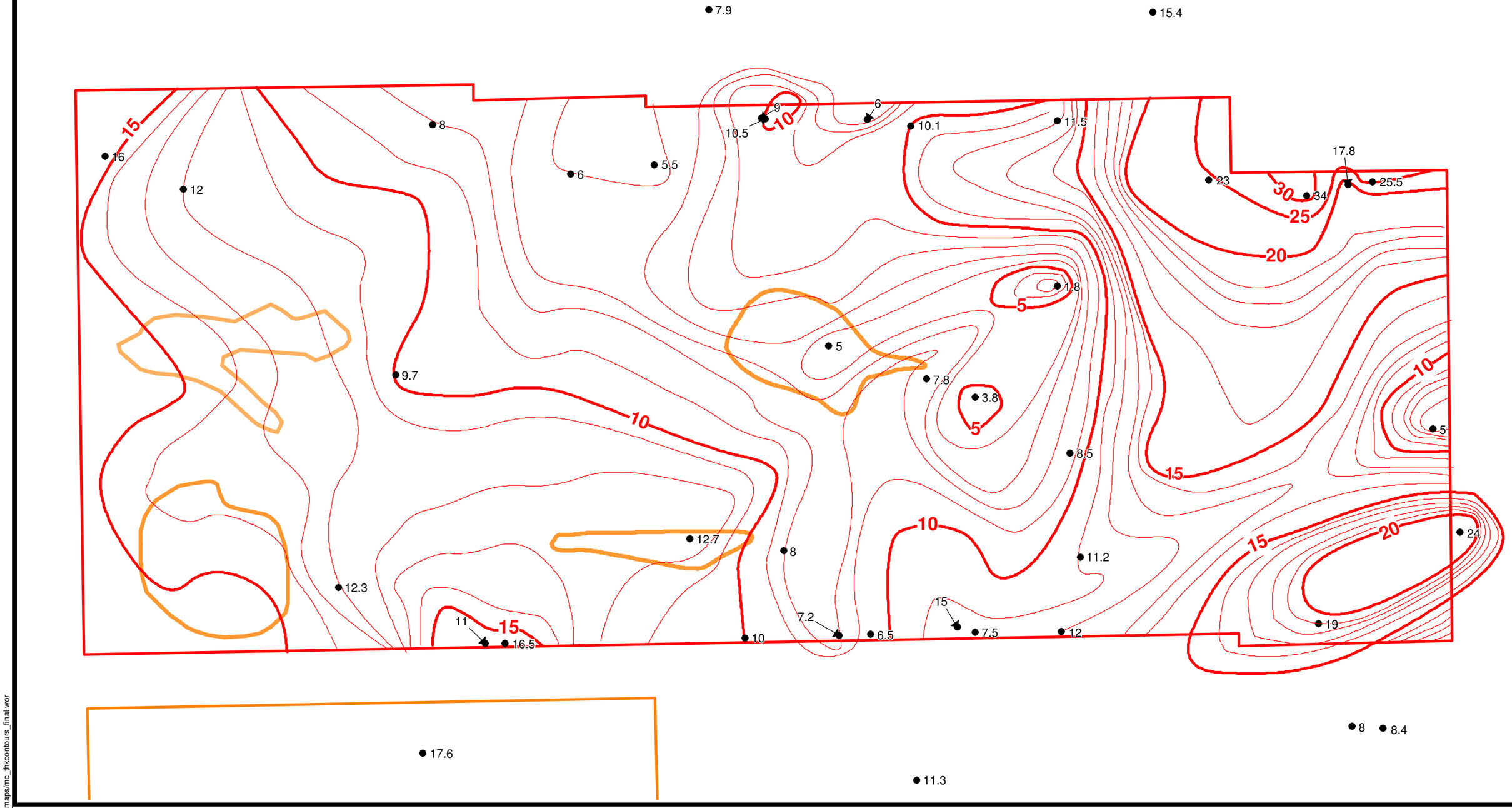
LOCATION: Gainesville, Florida

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FIGURE: 6

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Explanation

- 12.7 — Well location with clay unit thickness, in feet
- 10 — Clay thickness contour, in feet
- Former Source Area

0 215 430

SCALE IN FEET

W S E N

TITLE: Thickness Contours for Hawthorn Group Deposits -- Middle Clay Unit

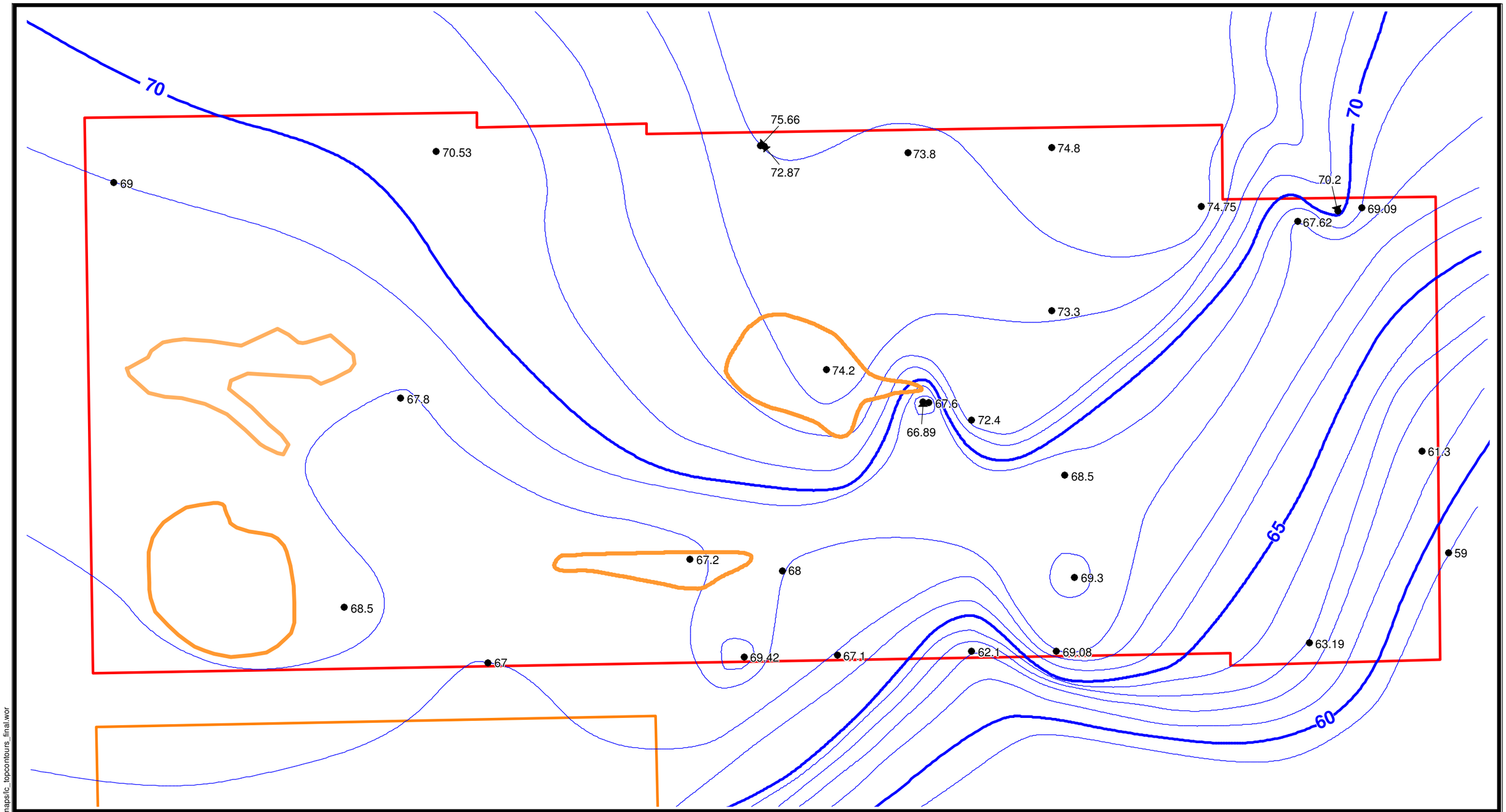
LOCATION: Gainesville, Florida

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FIGURE: 7

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Explanation

70.53 — Well location with clay unit elevation, in feet above msl

60 — Clay surface contour elevation, in feet

Former Source Area

0 215 430

SCALE IN FEET

W S E N

TITLE: Elevation Contours for Top of Hawthorn Group Deposits -- Lower Clay Unit

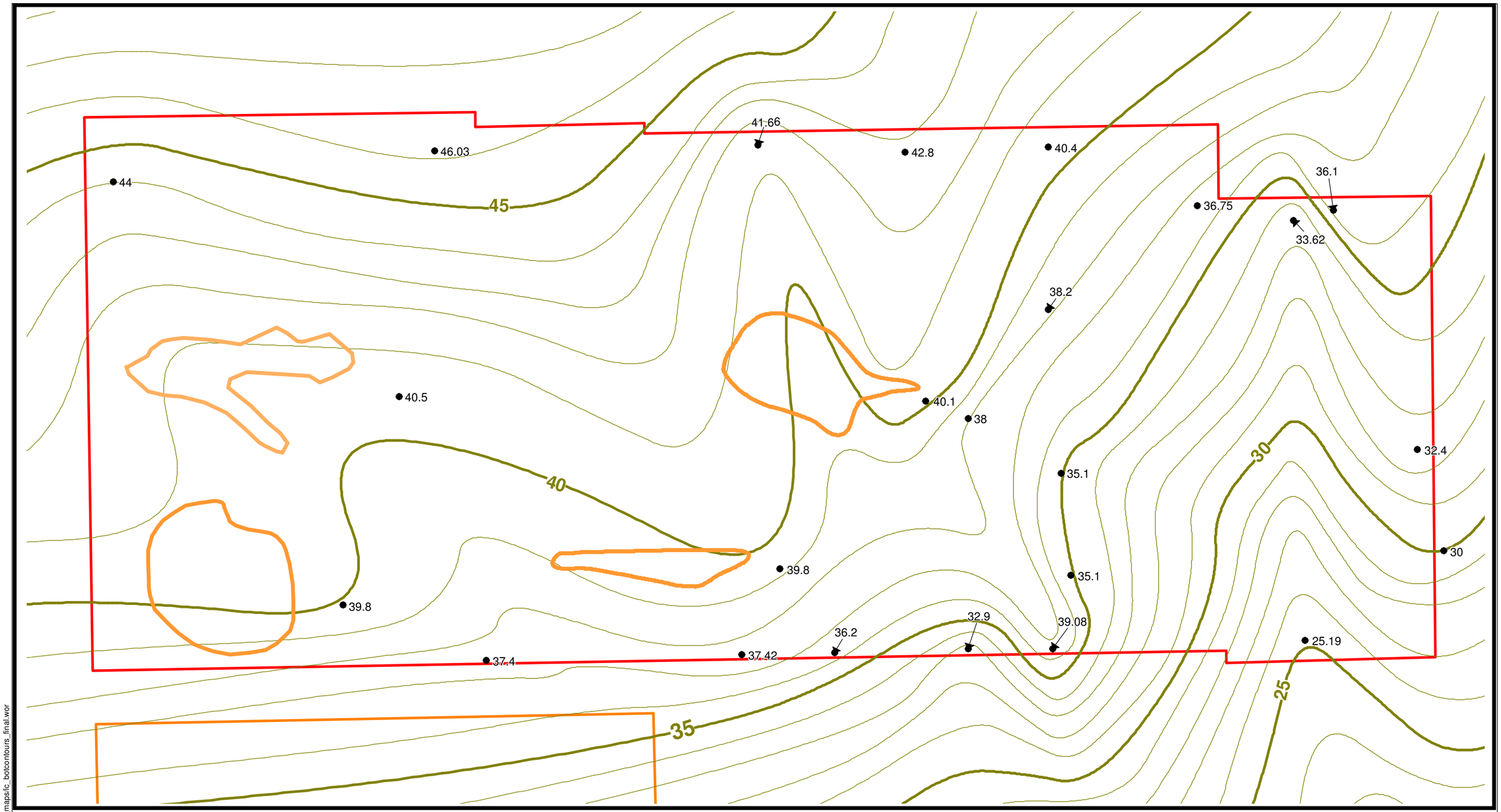
LOCATION: Gainesville, Florida

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FIGURE: 8

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Explanation

- 46.03 — Well location with clay unit elevation, in feet above msl
- 40 — Clay surface contour elevation, in feet
- Former Source Area

0 215 430

SCALE IN FEET

W S E N

TITLE: Elevation Contours for Bottom of Hawthorn Group Deposits -- Lower Clay Unit

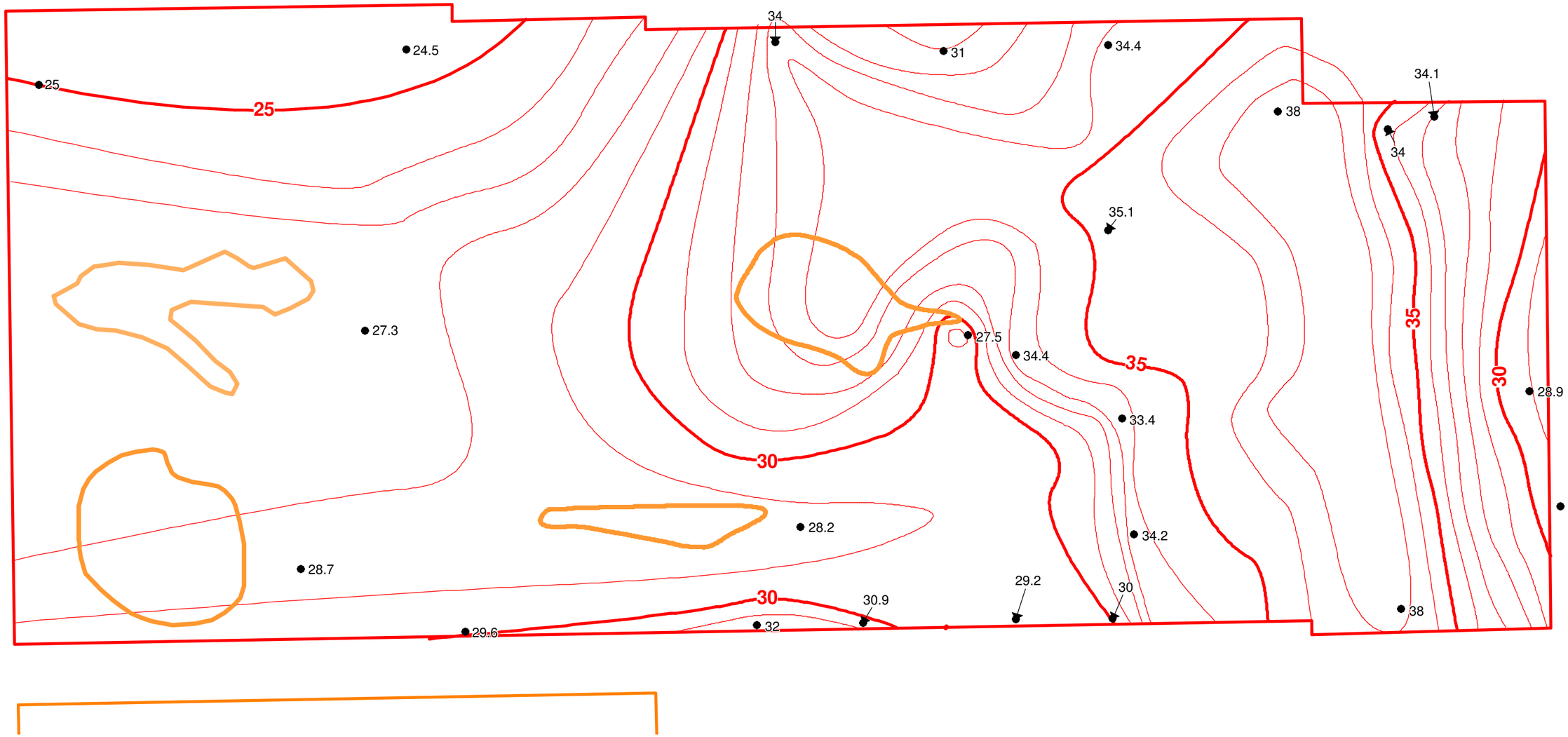
LOCATION: Gainesville, Florida

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FIGURE: 9

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Explanation

35.1 ● Well location with clay unit thickness, in feet

35 Clay surface thickness contour elevation, in feet

Former Source Area

0 215 430

SCALE IN FEET

W S E N

TITLE: Thickness Contours for Hawthorn Group Deposits -- Lower Clay Unit

LOCATION: Gainesville, Florida

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DATE	2/26/2008

FIGURE: 10

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