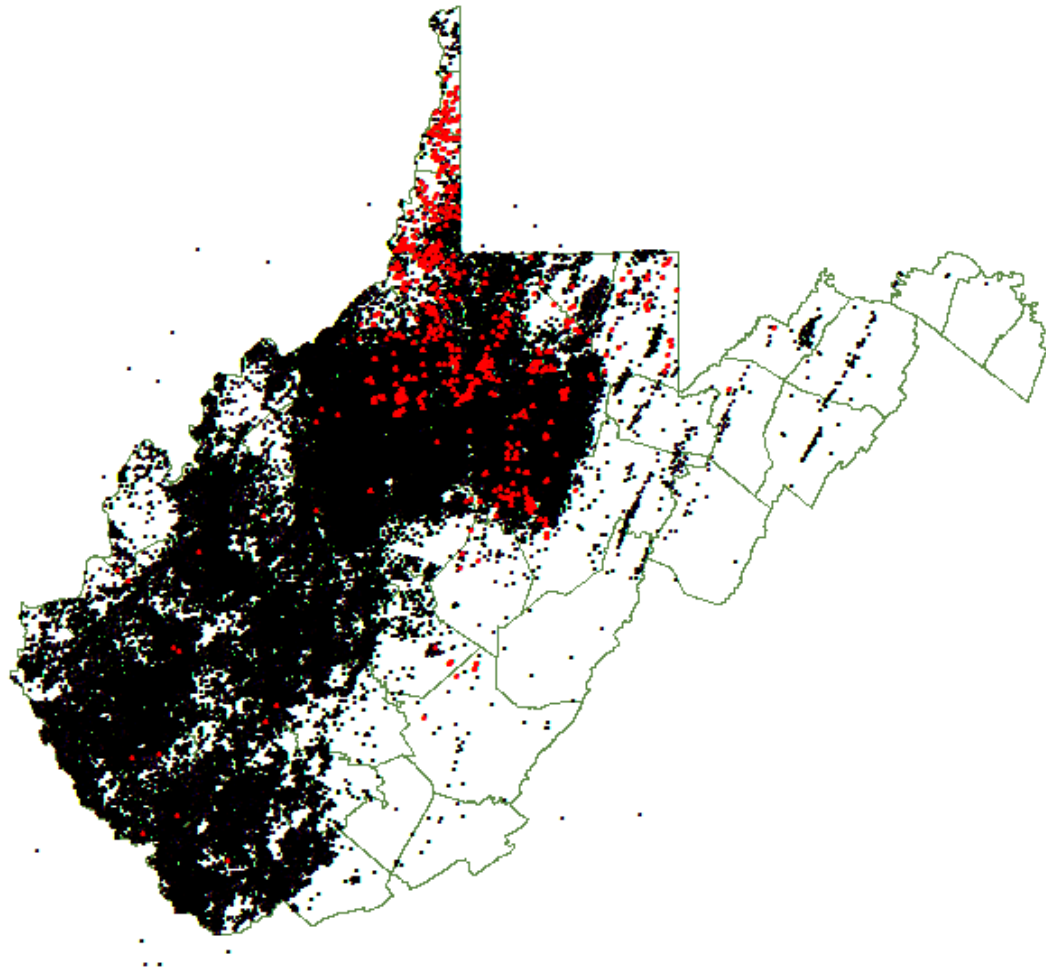


Coordinates for Well Locations

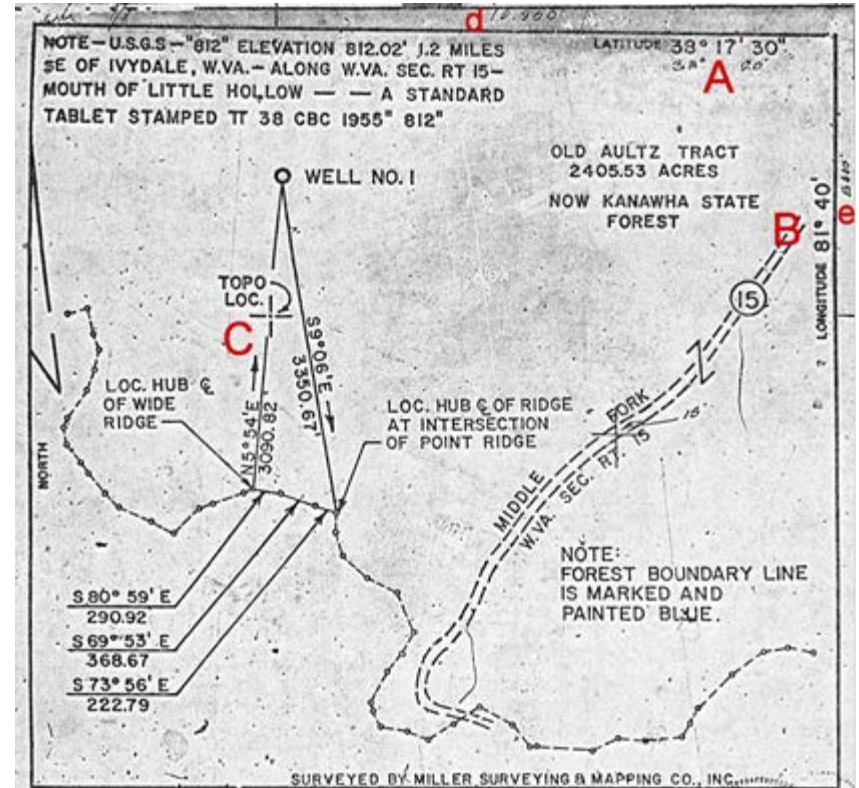
Michael Shank

Geographic Information System Manager, ITO



The “cross” depicting the well location relative to the upper right corner of the plat is shown at **C**. The latitude is at **A**, and the longitude at **B**.

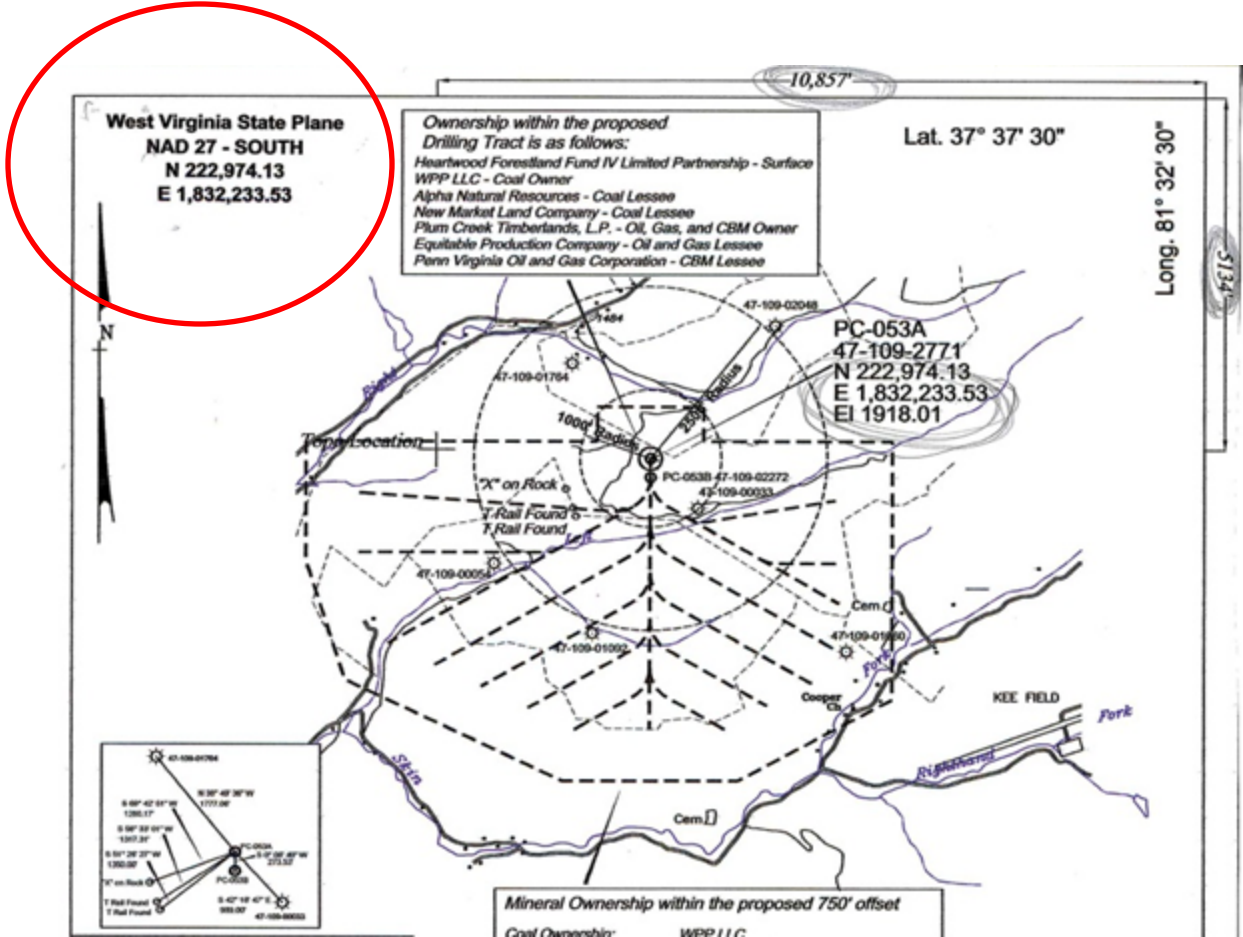
d and **e** are hand-measured estimates of the distance from the corner to the cross in the x and y dimensions, respectively.

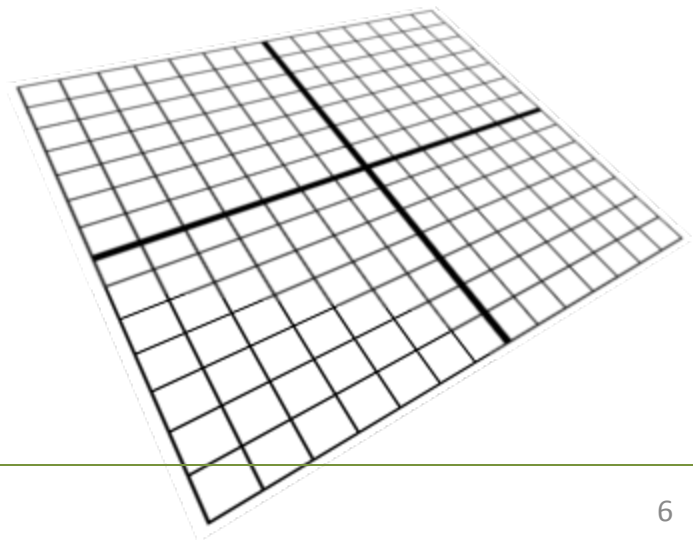
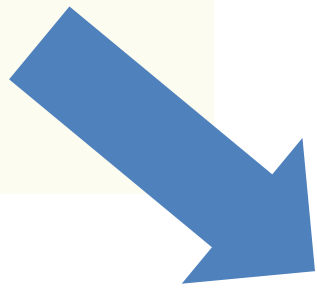
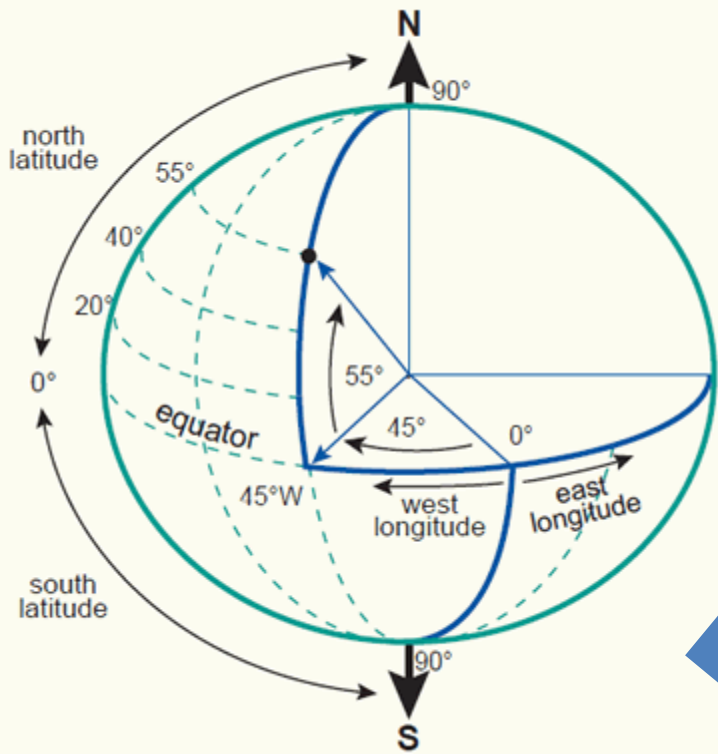


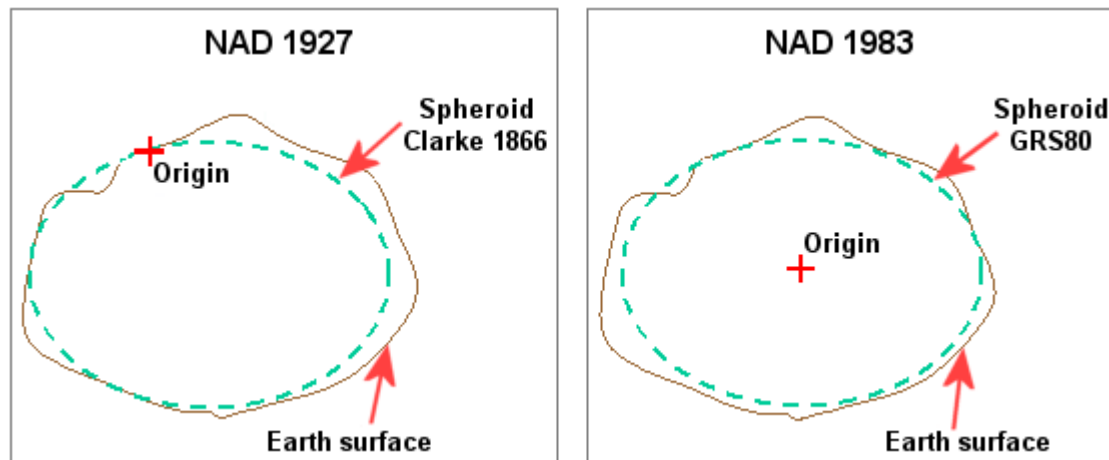
**TITLE 35
LEGISLATIVE RULE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS**

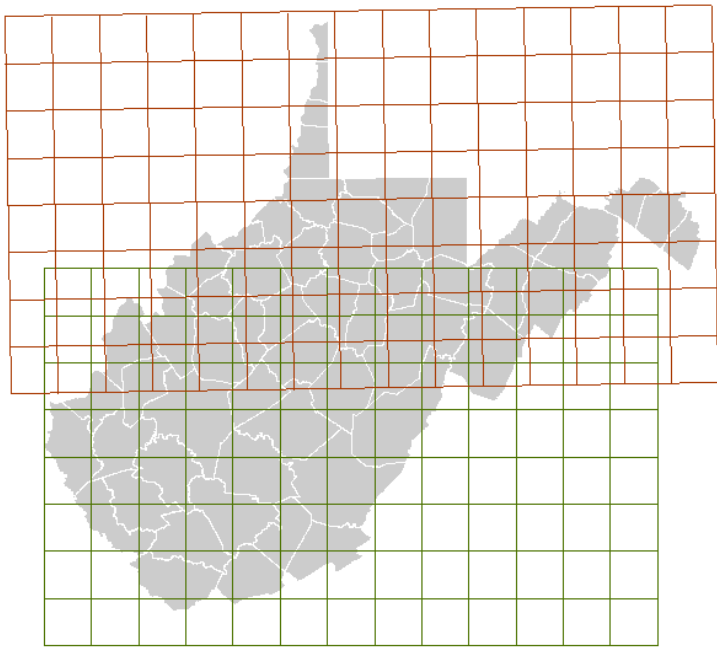
**SERIES 4
OIL AND GAS WELLS AND OTHER WELLS**

*9.2.i. Topographic Map Location of Well -- The topographic map location of the well for which any permit application is made pursuant to W. Va. Code §22-6-6 shall be shown on the plat by a “cross” with the measured distance in feet from the nearest two point five (2.5) minute latitude and longitude intersection using the North East (upper right) border of the plat on a seven point five (7.5) minute (1:24,000) topographic map. **The plat shall also contain Universal Transverse Mercator (UTM) Zone 17 Northing and Easting coordinates in North American Datum (NAD) 83(CORS96).** Each plat shall indicate the quadrangle name of the topographic map used.*



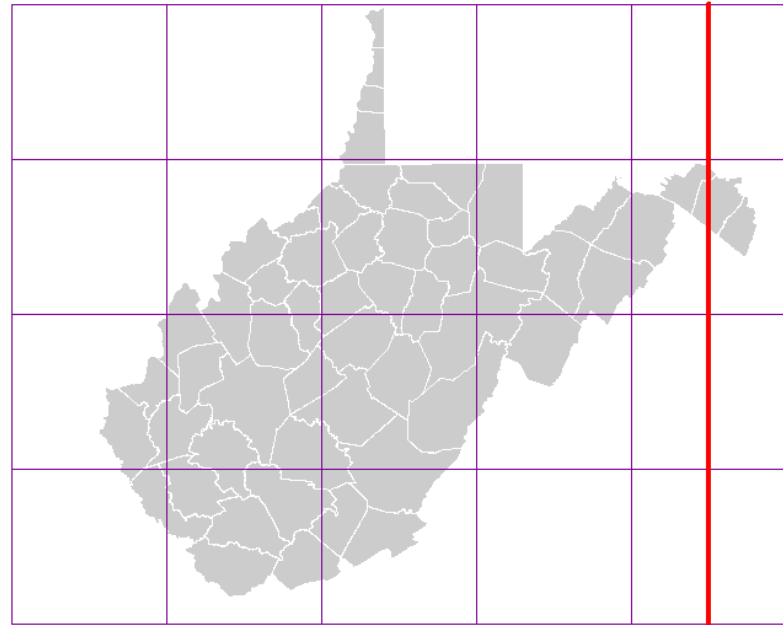


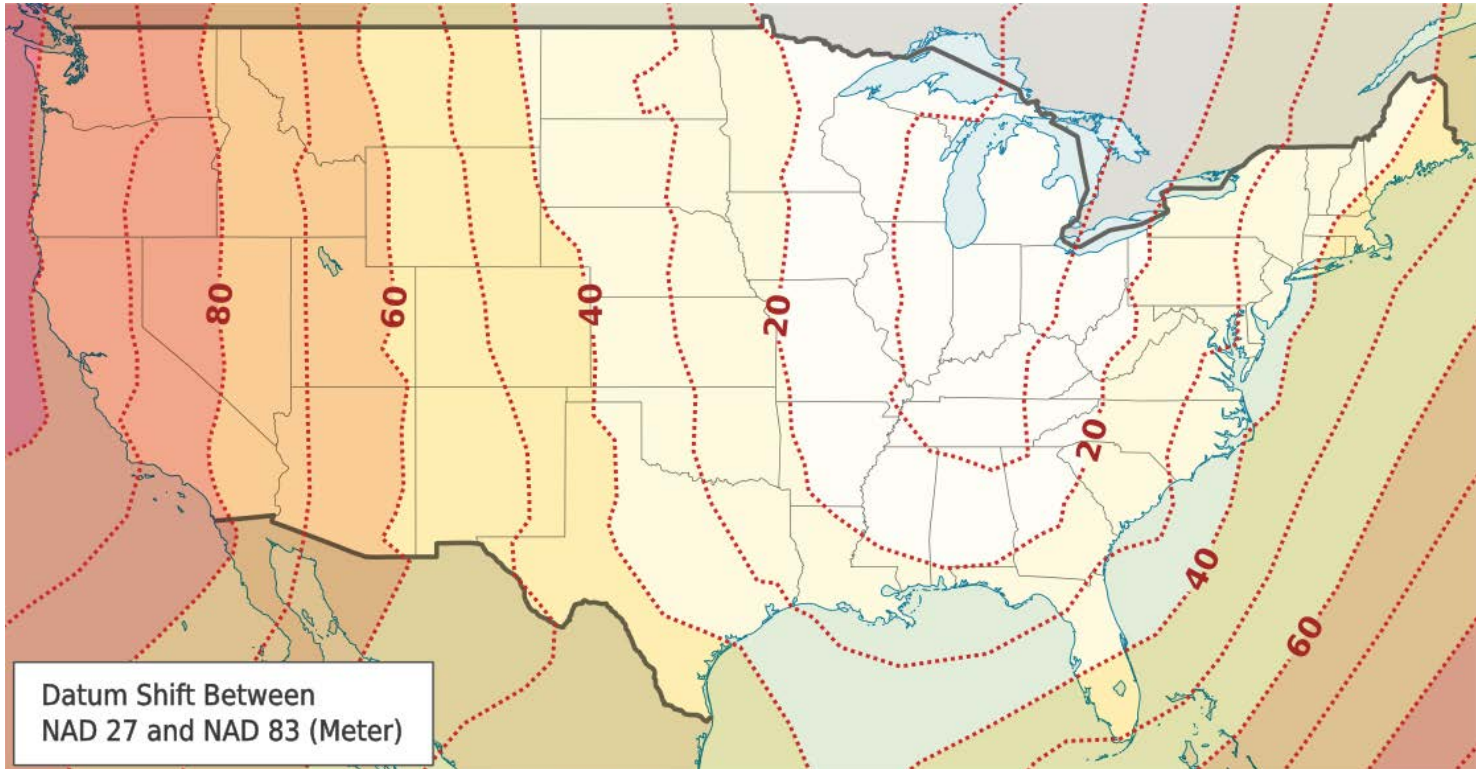




Zone 17

Zone 18





http://en.wikipedia.org/wiki/File:Datum_Shift_Between_NAD27_and_NAD83.png

NAD83(1986)

Doppler satellite measurements,
VLBI measurements

~1 meter shift

NAD83(HARN)

First realization that incorporated the
use of GPS measurements

<10 cm shift

NAD83(CORS96)

Included measurements from many
Continuously Operating Reference Station
(CORS) sites

<2 cm shift

NAD83(2011)

Reasons for using NAD83(CORS96)

Sub-meter GPS

Sub-meter accuracy is relatively common in mid-range GPS receivers, so datum specification becomes important when differences between datums is the same order of magnitude as the accuracy of the device.

Compatibility with GPS coordinates

Software for processing GPS data can easily convert GPS coordinates to NAD83(CORS96) using equations published by the National Geodetic Survey.

Large datum shifts are unlikely in the future

Future realizations of NAD83 are not expected to deviate much from the preferred realization.

<http://tagis.dep.wv.gov/convert>

The screenshot shows a web browser window with the URL tagis.dep.wv.gov/convert/. The page is titled "LON/LAT UTM converter".

Lon/Lat Section:

- Longitude: - 81 d 0 m 0 s
- Latitude: + 38 d 0 m 0 s
- DD: -81.000000 38.000000
- Datum: NAD27 NAD83
- Convert button

UTM Section:

- Coordinates: 500000.00 E 4205815.02 N
- Datum: NAD27 NAD83 Zone: 17
- Convert button

State Plane (feet) Section:

- Coordinates: 1968500.00 E 364133.28 N
- Datum: NAD27 NAD83 Zone: South
- Convert button

Map Section:

- Map showing Fayetteville, West Virginia, with a red dot at the location of Babcock State Park.
- Tooltip text: **-81.000000, 38.000000**
County:Fayette
huc-10:Manns Creek-New River (0505000403)
huc-12:Manns Creek (050500040302)
Zip:25840 (FAYETTEVILLE)
Quadrangle:Thurmond
- Map controls: clear markers, street map, image, topo