

U.S. Department of the Interior
National Park Service
Natural Resource Stewardship and Science Directorate
Geologic Resources Division



Obed Wild & Scenic River

GRI Ancillary Map Information Document

Produced to accompany the Geologic Resources Inventory (GRI) Digital Geologic Data for Obed Wild & Scenic River

obed_geology.pdf

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Geologic Resources Inventory Map Document for Obed Wild & Scenic River

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Geologic Resources Inventory Map Document



Obed Wild & Scenic River, Tennessee

Document to Accompany Digital Geologic-GIS Data

[obed_geology.pdf](#)

Version: 10/15/2015

This document has been developed to accompany the digital geologic-GIS data developed by the Geologic Resources Inventory (GRI) program for Obed Wild & Scenic River, Tennessee (OBED).

Attempts have been made to reproduce all aspects of the original source products, including the geologic units and their descriptions, geologic cross sections, the geologic report, references and all other pertinent images and information contained in the original publication.

National Park Service (NPS) Geologic Resources Inventory (GRI) Program staff have assembled the digital geologic-GIS data that accompanies this document.

For information about the status of GRI digital geologic-GIS data for a park contact:

Tim Connors
Geologist/GRI Mapping Contact
National Park Service Geologic Resources Division
P.O. Box 25287
Denver, CO 80225-0287
phone: (303) 969-2093
fax: (303) 987-6792
email: Tim_Connors@nps.gov

For information about using GRI digital geologic-GIS data contact:

Stephanie O'Meara
Geologist/GIS Specialist/Data Manager
Colorado State University Research Associate, Cooperator to the National Park Service
1201 Oak Ridge Drive, Suite 200
Fort Collins, CO 80525
phone: (970) 491-6655
fax: (970) 225-3597
e-mail: stephanie.omeara@colostate.edu

About the NPS Geologic Resources Inventory Program

Background

Recognizing the interrelationships between the physical (geology, air, and water) and biological (plants and animals) components of the Earth is vital to understanding, managing, and protecting natural resources. The Geologic Resources Inventory (GRI) helps make this connection by providing information on the role of geology and geologic resource management in parks.

Geologic resources for management consideration include both the processes that act upon the Earth and the features formed as a result of these processes. Geologic processes include: erosion and sedimentation; seismic, volcanic, and geothermal activity; glaciation, rockfalls, landslides, and shoreline change. Geologic features include mountains, canyons, natural arches and bridges, minerals, rocks, fossils, cave and karst systems, beaches, dunes, glaciers, volcanoes, and faults.

The Geologic Resources Inventory aims to raise awareness of geology and the role it plays in the environment, and to provide natural resource managers and staff, park planners, interpreters, researchers, and other NPS personnel with information that can help them make informed management decisions.

The GRI team, working closely with the Colorado State University (CSU) Department of Geosciences and a variety of other partners, provides more than 270 parks with a geologic scoping meeting, digital geologic-GIS map data, and a park-specific geologic report.

Products

Scoping Meetings: These park-specific meetings bring together local geologic experts and park staff to inventory and review available geologic data and discuss geologic resource management issues. A summary document is prepared for each meeting that identifies a plan to provide digital map data for the park.

Digital Geologic Maps: Digital geologic maps reproduce all aspects of traditional paper maps, including notes, legend, and cross sections. Bedrock, surficial, and special purpose maps such as coastal or geologic hazard maps may be used by the GRI to create digital Geographic Information Systems (GIS) data and meet park needs. These digital GIS data allow geologic information to be easily viewed and analyzed in conjunction with a wide range of other resource management information data.

For detailed information regarding GIS parameters such as data attribute field definitions, attribute field codes, value definitions, and rules that govern relationships found in the data, refer to the NPS Geology-GIS Data Model document available at: <http://science.nature.nps.gov/im/inventory/geology/GeologyGISDataModel.cfm>

Geologic Reports: Park-specific geologic reports identify geologic resource management issues as well as features and processes that are important to park ecosystems. In addition, these reports present a brief geologic history of the park and address specific properties of geologic units present in the park.

For a complete listing of Geologic Resource Inventory products and direct links to the download site visit the GRI publications webpage http://www.nature.nps.gov/geology/inventory/gre_publications.cfm

GRI geologic-GIS data is also available online at the NPS Data Store Search Application: <http://irma.nps.gov/App/Reference/Search>. To find GRI data for a specific park or parks select the appropriate park

(s), enter "GRI" as a Search Text term, and then select the Search Button.

For more information about the Geologic Resources Inventory Program visit the GRI webpage: <http://www.nature.nps.gov/geology/inventory>, or contact:

Bruce Heise
Inventory Coordinator
National Park Service Geologic Resources Division
P.O. Box 25287
Denver, CO 80225-0287
phone: (303) 969-2017
fax: (303) 987-6792
email: Bruce_Heise@nps.gov

The Geologic Resources Inventory (GRI) program is funded by the National Park Service (NPS) Inventory and Monitoring (I&M) Division.

GRI Digital Maps and Source Map Citations

The GRI digital geologic-GIS map for Obed Wild & Scenic River, Tennessee (OBED):

GRI Digital Bedrock Geologic Map of Obed Wild & Scenic River (*GRI MapCode OBED*)

Produced from the following University of Tennessee and Tennessee Division of Geology source maps,

Coker, A.E., 1965, Geologic Map and Mineral Resources Summary of the Jones Knob Quadrangle, Tennessee: Tennessee Division of Geology, Geologic Map GM 116-NW, scale 1:24,000. ([Jones Knob Quadrangle](#)) (*GRI Source Map ID 67760*).

Coker, A.E., 1965, Geologic Map and Mineral Resources Summary of the Twin Bridges Quadrangle, Tennessee: Tennessee Division of Geology, Geologic Map GM-116 NE, scale 1:24,000. ([Twin Bridges Quadrangle](#)) (*GRI Source Map ID 68526*).

Finlayson, C.P., Powell, R.L., Kronman, G.E., and Moore, J.L., 1985, Geologic Map and Mineral Resources Summary of the Pilot Mountain Quadrangle, Tennessee: Tennessee Division of Geology, Geologic Map GM 122-NW, scale 1:24,000. ([Pilot Mountain Quadrangle](#)) (*GRI Source Map ID 68448*).

Scruggs, P. Levader, Moore, James L., Gilmore, Donald F. , Hansen, Bryan R., Wunderlich, Andrew L., Rehrer, Justin R. and Hatcher, Robert D. Jr., 2015, Geologic Map of the Lancing 7.5-Minute Quadrangle, Tennessee: University of Tennessee, 7.5-Minute Series Map, scale 1:24,000. ([Lancing Quadrangle](#)) (*GRI Source Map ID 76045*).

Scruggs, P. Levader, Rascoe, B., Stearns, Richard G., Hansen, Bryan R., Wunderlich, Andrew L. and Hatcher, Robert D. Jr., 2015, Geologic Map of the Fox Creek 7.5-Minute Quadrangle, Tennessee: University of Tennessee, 7.5-Minute Series Map, scale 1:24,000. ([Fox Creek Quadrangle](#)) (*GRI Source Map ID 76047*).

Scruggs, P. Levader, Stearns, Richard G., Hansen, Bryan R., Wunderlich, Andrew L. and Hatcher, Robert D. Jr., 2015, Geologic Map of the Hebbertsburg 7.5-Minute Quadrangle, Tennessee: University of Tennessee, 7.5-Minute Series Map, scale 1:24,000. ([Hebbertsburg Quadrangle](#)) (*GRI Source Map ID 76046*).

Additional information pertaining to each source map is also presented in the GRI Source Map Information (OBEDMAP) table included with the GRI geologic-GIS data.

Bedrock Map Unit List

The bedrock geologic units present in the digital geologic-GIS data produced for Obed Wild & Scenic River, Tennessee (OBED) are listed below. Units are listed with their assigned unit symbol and unit name (e.g., PNib - Indian Bluff Formation). Units are listed from youngest to oldest. No description for water is provided. Information about each geologic unit is also presented in the GRI Geologic Unit Information (OBEDUNIT) table included with the GRI geology-GIS data. Some source unit symbols, names and/or ages may have been changed in this document and in the GRI digital geologic-GIS data. This was done if a unit was considered to be the same unit as one or more units on other source maps used for this project, and these unit symbols, names and/or ages differed. In this case a single unit symbol and name, and the unit's now recognized age, was adopted. Unit symbols, names and/or ages in a unit descriptions, or on a correlation of map units or other source map figure were not edited. If a unit symbol, name or age was changed by the GRI the unit's source map symbol, name and/or age appears with the unit's source map description. Some units, denoted with their unit description, appear only in cross section.

Paleozoic Era

Pennsylvanian Period

[PNib](#) - Indian Bluff Formation

[PNsl](#) - Slatestone Formation

[PNwb](#) - Wartburg Sandstone, undivided

[PNwbl](#) - Wartburg Sandstone, lower member

[Pngm](#) - Glenmary Shale

[PNgc](#) - Glenmary Shale and Coalfield Sandstone, undifferentiated

[PNgcb](#) - Glenmary Shale, Coalfield Sandstone, and Burnt Mill Shale, undifferentiated

[PNc](#) - Coalfield Sandstone

[PNb](#) - Burnt Mill Shale

[PNcr](#) - Crossville Sandstone

[PNd](#) - Dorton Shale

[PNr](#) - Rockcastle Conglomerate

[PNv](#) - Vandever Formation

[PNvu](#) - Vandever Formation, upper unit

[PNvl](#) - Vandever Formation, lower unit

[PNvnuw](#) - Vandever Formation, Newton Sandstone, and Whitwell Shale, undifferentiated

[PNn](#) - Newton Sandstone

[PNw](#) - Whitwell Shale

[PNs](#) - Sewanee Conglomerate

[Png](#) - Gizzard Group

Mississippian Period

[Mp](#) - Pennington Formation

[Mb-Mh](#) - Bangor Limestone-Hartselle Sandstone

[Mm](#) - Monteagle Limestone

[Msl-Mw](#) - Saint Louis Limestone-Warsaw Limestone

Mississippian and Devonian Periods

[Mfp-MDc](#) - Fort Payne Formation-Chattanooga Shale

Ordovician Period

[Och](#) - Chickamauga Group

Ordovician and Cambrian Periods

[Ock](#) - Knox Group

Bedrock Map Unit Descriptions

Descriptions of all geologic map units, generally listed from youngest to oldest, are presented below.

PNib - Indian Bluff Formation (Middle Pennsylvanian)

Pib - Indian Bluff Formation (Middle Pennsylvanian)

Sandstone, yellowish-gray to yellowish-brown, fine- to medium-grained, thin- to thick-bedded, cross-bedded in part, lenticular; and shale, clayey to sandy, light-brown to dark-gray, with intercalated siltstone and sandstone; preserved only on Pilot Mountain; base of formation at top of Jellico coal. (*GRI Source Map ID 68448*) ([Pilot Mountain Quadrangle](#)).

PNsl - Slatestone Formation (Middle and Lower Pennsylvanian)

Psl - Slatestone Formation (Lower Pennsylvanian)

Shale, clayey to sandy, olive-gray to grayish-black, with intercalated siltstone and sandstone; and sandstone, yellowish-gray to yellowish-brown, fine- to medium-grained, thin- to thick-bedded, crossbedded in part. Preserved only on top of Pilot Mountain. Base of formation at top of Poplar Creek coal. (*GRI Source Map ID 68448*) ([Pilot Mountain Quadrangle](#)).

PNwb - Wartburg Sandstone, undivided (Lower Pennsylvanian)

Pwb - Wartburg Sandstone, undivided (Lower Pennsylvanian)

Sandstone, quartzose, light olive-gray, olive-gray, brownish-yellow, buff to medium dark-gray, very fine-grained to fine-grained, thin- to thick-bedded, slightly micaceous and silty; crossbedded, with a few carbonaceous streaks. (*GRI Source Map ID 68448*) ([Pilot Mountain Quadrangle](#)).

PNwbl - Wartburg Sandstone, lower member (Lower Pennsylvanian)

Sandstone, light- to medium-gray, fine- to medium-grained, thin- to thick-bedded, typically very cross-bedded. Only lower member present in northeastern part of quad. (*GRI Source Map ID 76045*) ([Lancing Quadrangle](#)).

PNgm - Glenmary Shale (Lower Pennsylvanian)

PNgm - Glenmary Shale (Lower Pennsylvanian)

Shale, olive-gray to olive-black and medium-gray, silty to sandy; siltstone, olive-gray to olive-black; and sandstone, medium light-gray, fine- to medium-grained, thin-bedded, typically interbedded with shales and siltstones. (*GRI Source Map ID 76045*) ([Lancing Quadrangle](#)).

Pg - Glenmary Shale (Lower Pennsylvanian)

Shale, silty and slightly micaceous, light- to medium-gray with some grayish-black; siltstone, medium- to medium dark-gray; some grayish-black carbonaceous specks; beds grade from shale to siltstone. (*GRI Source Map ID 68448*) ([Pilot Mountain Quadrangle](#)).

PNgc - Glenmary Shale and Coalfield Sandstone, undifferentiated (Lower Pennsylvanian)

Pgc - Glenmary Shale and Coalfield Sandstone, undifferentiated (Lower Pennsylvanian)

Shale, silty, light- to dark-gray, interbedded with thin, yellowish, olive- to brownish-gray, fine-grained, thin- to thick-bedded, fine-grained sandstone. A thin coal is present near the middle of the formation. The Hooper coal occurs locally near the base of the formation. This grouped unit is the lateral equivalent of the Glenmary, Coalfield, and Burnt Mill formations, mapped where the Coalfield Sandstone is missing. (*GRI Source Map ID 68448*) ([Pilot Mountain Quadrangle](#)).

PNgcb - Glenmary Shale, Coalfield Sandstone, and Burnt Mill Shale, undifferentiated (Lower Pennsylvanian)

Pgcb - Glenmary Shale, Coalfield Sandstone, and Burnt Mill Shale, undifferentiated (Lower Pennsylvanian)

Shale, silty, light- to dark-gray, interbedded with thin, yellowish, olive- to brownish-gray, fine-grained, thin- to thick-bedded, fine-grained sandstone. A thin coal is present near the middle of the formation. The Hooper coal occurs locally near the base of the formation. This grouped unit is the lateral equivalent of the Glenmary, Coalfield, and Burnt Mill formations, mapped where the Coalfield Sandstone is missing. (*GRI Source Map ID 68448*) ([Pilot Mountain Quadrangle](#)).

PNc - Coalfield Sandstone (Lower Pennsylvanian)

PNc - Coalfield Sandstone (Lower Pennsylvanian)

Sandstone, light-gray to medium light- and olive-gray, very fine- to medium-grained, thin- to medium-bedded, silty, shaly, typically poorly cemented; middle part typically shale, olive-gray to olive-black, sandy, with siltstone laminae and beds. (*GRI Source Map ID 76045*) ([Lancing Quadrangle](#)).

Pc - Coalfield Sandstone (Lower Pennsylvanian)

Sandstone, light-gray to brownish-yellow, fine- to medium-grained, thin-bedded, grades to siltstone. Mapped only in the northeastern part of the quadrangle. (*GRI Source Map ID 68448*) ([Pilot Mountain Quadrangle](#)).

PNb - Burnt Mill Shale (Lower Pennsylvanian)

PNb - Burnt Mill Shale (Lower Pennsylvanian)

Shale, dark-gray to olive-black, clayey to silty; siltstone. Olive-gray to olive-black; locally interbedded with laminae and thin beds of sandstone, light- to medium light-gray, very fine- to fine-grained with shale laminae; Hooper coal and associated seat earth, dark-gray to olive-gray, rooted, occurs locally near base of formation. (*GRI Source Map ID 76045*) ([Lancing Quadrangle](#)).

Pb - Burnt Mill Shale (Lower Pennsylvanian)

Shale, sandy, silty, micaceous, olive- to dark-gray; and sandstone, light olive- to olive-gray, very fine-grained, thin-bedded; grades to olive-gray siltstone. (*GRI Source Map ID 68448*) ([Pilot Mountain Quadrangle](#)).

PNcr - Crossville Sandstone (Lower Pennsylvanian)

PNcr - Crossville Sandstone (Lower Pennsylvanian)

Sandstone, light-gray, stained to various shades or reddish- yellow, weathers yellowish-gray, very fine- to fine-grained, very thin- to thick-bedded; upper third predominantly shale, sandy and silty, and thin-bedded sandstone. Lower third typically thin- to medium-bedded, cross-bedded; intervals throughout interbedded and flasered with shale, olive-gray to olive-black, silty; with thin interbeds of sandstone. Where faulted, sandstone microfractured into yellowish-gray, dense, jointed cataclasite. (*GRI Source Map ID 76047*) ([Fox Creek Quadrangle](#)).

PNcr - Crossville Sandstone (Lower Pennsylvanian)

Sandstone, light-gray, stained to various shades or reddish- yellow, weathers yellowish-gray, very fine- to fine-grained, very thin- to thick-bedded; upper third predominantly shale, sandy and silty, and thin-bedded sandstone. Lower third typically thin- to medium-bedded, cross-bedded; intervals throughout interbedded and flasered with shale, olive-gray to olive-black, silty; with thin interbeds of sandstone. Where faulted, sandstone microfractured into yellowish-gray, dense, jointed cataclasite. (*GRI Source Map ID 76046*) ([Hebbertsburg Quadrangle](#)).

Pcr - Crossville Sandstone (Lower Pennsylvanian)

Sandstone, yellowish-green and light- to reddish-brown, fine- to coarse-grained, medium-bedded, crossbedded in part, loosely cemented on outcrop. Maximum preserved thickness about 20 feet. (*GRI Source Map ID 67760*) ([Jones Knob Quadrangle](#)).

PNcr - Crossville Sandstone (Lower Pennsylvanian)

Sandstone, light-gray, stained to various shades or reddish- yellow, weathers yellowish-gray, very fine- to fine-grained, very thin- to thick-bedded; upper third predominantly shale, sandy and silty, and thin-bedded sandstone. Lower third typically thin- to medium-bedded, cross-bedded; intervals throughout interbedded and flasered with shale, olive-gray to olive-black, silty; with thin interbeds of sandstone. Where faulted, sandstone microfractured into yellowish-gray, dense, jointed cataclasite. (*GRI Source Map ID 76045*) ([Lancing Quadrangle](#)).

Pcr - Crossville Sandstone (Lower Pennsylvanian)

Sandstone, quartzose, light- to yellowish-brown, light olive-and olive-gray to reddish-brown, very fine-grained to fine-grained, thin-bedded, slightly micaceous; locally crossbedded, with a few zones of dark-gray to grayish-black shale. Thin coal seam near top of formation. (*GRI Source Map ID 68448*) ([Pilot Mountain Quadrangle](#)).

Pcr - Crossville Sandstone (Lower Pennsylvanian)

Sandstone, yellowish-green and light- to reddish-brown, fine- to coarse-grained, medium-bedded, crossbedded in part, loosely cemented on outcrop. Maximum preserved thickness 100 feet. (*GRI Source Map ID 68526*) ([Twin Bridges Quadrangle](#)).

PNd - Dorton Shale (Lower Pennsylvanian)

PNd - Dorton Shale (Lower Pennsylvanian)

Shale, silty to sandy and with a few layers of ironstone, medium dark- to dark-gray and olive-gray; siltstone, olive- gray to olive-black; with laminae and beds of sandstone, light gray, very fine-grained, flasered and burrowed; Potters Falls coal near top and Rex coal near bottom, both underlain by seat earths. (*GRI Source Map ID 76047*) ([Fox Creek Quadrangle](#)).

PNd - Dorton Shale (Lower Pennsylvanian)

Shale, silty to sandy and with a few layers of ironstone, medium dark- to dark-gray and olive-gray;

siltstone, olive- gray to olive-black; with laminae and beds of sandstone, light gray, very fine-grained, flasered and burrowed; Potters Falls coal near top and Rex coal near bottom, both underlain by seat earths. (GRI Source Map ID 76046) ([Hebbertsburg Quadrangle](#)).

Pd - Dorton Shale (Lower Pennsylvanian)

Shale, silty, greenish-yellow and reddish-brown to brownish-gray, with minor siltstone in places; grades downward into underlying Rockcastle Sandstone through a short interval of siltstone and fine-grained, thinly laminated sandstone. Thickness about 95 feet. (GRI Source Map ID 67760) ([Jones Knob Quadrangle](#)).

PNd - Dorton Shale (Lower Pennsylvanian)

Shale, silty to sandy and with a few layers of ironstone, medium dark- to dark-gray and olive-gray; siltstone, olive- gray to olive-black; with laminae and beds of sandstone, light gray, very fine-grained, flasered and burrowed; Potters Falls coal near top and Rex coal near bottom, both underlain by seat earths. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Pd - Dorton Shale (Lower Pennsylvanian)

Shale, sandy, silty, and slightly micaceous, medium- to dark-gray, with some yellowish-gray; and sandstone, very pale yellowish- to yellowish-gray, very fine-grained, thin-bedded; grades to olive-gray siltstone. Coal seam at base. (GRI Source Map ID 68448) ([Pilot Mountain Quadrangle](#)).

Pd - Dorton Shale (Lower Pennsylvanian)

Shale, silty, greenish-yellow and reddish-brown to brownish-gray, with minor siltstone in places; grades downward into underlying Rockcastle Sandstone through a short interval of siltstone and fine-grained, thinly laminated sandstone. Thickness 50 to 120 feet. (GRI Source Map ID 68526) ([Twin Bridges Quadrangle](#)).

PNr - Rockcastle Conglomerate (Lower Pennsylvanian)

PNr - Rockcastle Sandstone (Lower Pennsylvanian)

Sandstone, light-gray, fine- to coarse-grained, medium- to very thick-bedded, generally cross-bedded, small scattered quartz pebbles common, predominates in the lower part. Unit locally interbedded with partings and thin beds of medium dark-gray shale. Upper part silty, dark-gray shale and siltstone interbedded with sandstone, medium light-gray, very fine- to fine-grained. Top of formation marked by persistent thin bed of sandstone usually seen only in well logs. Persistent Nemo coal and seat earth near base of upper shale unit. Where faulted, sandstone microfractured into yellowish-gray, dense jointed cataclasite. (GRI Source Map ID 76047) ([Fox Creek Quadrangle](#)).

PNr - Rockcastle Sandstone (Lower Pennsylvanian)

Sandstone, light-gray, fine- to coarse-grained, medium- to very thick-bedded, generally cross-bedded, small scattered quartz pebbles common, predominates in the lower part. Unit locally interbedded with partings and thin beds of medium dark-gray shale. Upper part silty, dark-gray shale and siltstone interbedded with sandstone, medium light-gray, very fine- to fine-grained. Top of formation marked by persistent thin bed of sandstone usually seen only in well logs. Persistent Nemo coal and seat earth near base of upper shale unit. Where faulted, sandstone microfractured into yellowish-gray, dense jointed cataclasite. (GRI Source Map ID 76046) ([Hebbertsburg Quadrangle](#)).

Pr - Rockcastle Sandstone (Lower Pennsylvanian)

Sandstone, fine-grained, thin-bedded; grades downward into conglomeratic sandstone, coarse-grained, medium- to very thick-bedded, crossbedded in part; all yellowish- or light brownish-gray. Locally present near middle of formation is as much as 30 feet of shale containing Nemo coal. Thickness 100 to 190

feet. (GRI Source Map ID 67760) ([Jones Knob Quadrangle](#)).

PNr - Rockcastle Sandstone (Lower Pennsylvanian)

Sandstone, light-gray, fine- to coarse-grained, medium- to very thick-bedded, generally cross-bedded, small scattered quartz pebbles common, predominates in the lower part. Unit locally interbedded with partings and thin beds of medium dark-gray shale. Upper part silty, dark-gray shale and siltstone interbedded with sandstone, medium light-gray, very fine- to fine-grained. Top of formation marked by persistent thin bed of sandstone usually seen only in well logs. Persistent Nemo coal and seat earth near base of upper shale unit. Where faulted, sandstone microfractured into yellowish-gray, dense jointed cataclasite. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Pr - Rockcastle Sandstone (Lower Pennsylvanian)

Sandstone, quartzose, white, light olive- to olive-gray, fine- to coarse-grained, crossbedded, silty and micaceous; locally conglomeratic with rounded to subrounded quartz pebbles as much as 1/4 inch (6mm) long. there are two shale zones in the formation, each as much as 10 feet (3m) thick. These shale are commonly medium- to dark-gray, silty, discontinuous lenses that are present throughout the quadrangle, and are usually identifiable only in well cuttings or on geophysical logs. (GRI Source Map ID 68448) ([Pilot Mountain Quadrangle](#)).

Pr - Rockcastle Sandstone (Lower Pennsylvanian)

Sandstone, fine-grained, thin-bedded; grades downward into conglomeratic sandstone, coarse-grained, medium- to very thick-bedded, crossbedded in part; all yellowish- or light brownish-gray. Locally present, near middle of formation is as much as 30 feet of shale which may contain Nemo coal. Thickness 130 to 190 feet. (GRI Source Map ID 68526) ([Twin Bridges Quadrangle](#)).

PNv - Vandever Formation (Lower Pennsylvanian)

PNv - Vandever Formation (Lower Pennsylvanian)

Shale and siltstone, silty, medium dark-gray to olive-gray, persistent at top, middle, and base of formation; inter- laminated with sandstone, very fine- to fine-grained, light gray, rippled, flasered, and burrowed; sandstone, very fine- to fine-grained, light-gray, flasered with irregular partings of medium dark-gray shale, persistent just above and below middle. Divided into upper and lower units about middle sandstone member in southwest portion of quad. (GRI Source Map ID 76047) ([Fox Creek Quadrangle](#)).

PNv - Vandever Formation (Lower Pennsylvanian)

Shale and siltstone, silty, medium dark-gray to olive-gray, persistent at top, middle, and base of formation; inter- laminated with sandstone, very fine- to fine-grained, light gray, rippled, flasered, and burrowed; sandstone, very fine- to fine-grained, light-gray, flasered with irregular partings of medium dark-gray shale, persistent just above and below middle. Divided into upper and lower units about middle sandstone member in southwest portion of quad. (GRI Source Map ID 76046) ([Hebbertsburg Quadrangle](#)).

PNv - Vandever Formation (Lower Pennsylvanian)

Shale and siltstone, silty, medium dark-gray to olive-gray, persistent at top, middle, and base of formation; inter- laminated with sandstone, very fine- to fine-grained, light gray, rippled, flasered, and burrowed; sandstone, very fine- to fine-grained, light-gray, flasered with irregular partings of medium dark-gray shale, persistent just above and below middle. Divided into upper and lower units about middle sandstone member in southwest portion of quad. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Note: The Vandever Formation is mapped as three separate units (PNv, PNvu (upper member), and PNvl (lower member)) on the Lancing Quadrangle, however, all three units share the same

lithologic description as shown above.

PNvu - Vandever Formation, upper unit (Lower Pennsylvanian)

Shale and siltstone, silty, medium dark-gray to olive-gray, persistent at top, middle, and base of formation; inter-laminated with sandstone, very fine- to fine-grained, light gray, rippled, flasered, and burrowed; sandstone, very fine- to fine-grained, light-gray, flasered with irregular partings of medium dark-gray shale, persistent just above and below middle. Divided into upper and lower units about middle sandstone member in southwest portion of quad. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Note: The Vandever Formation is mapped as three separate units (PNv, PNvu (upper member), and PNvl (lower member)) on the Lancing Quadrangle, however, all three units share the same lithologic description as shown above.

PNvl - Vandever Formation, lower unit (Lower Pennsylvanian)

Shale and siltstone, silty, medium dark-gray to olive-gray, persistent at top, middle, and base of formation; inter-laminated with sandstone, very fine- to fine-grained, light gray, rippled, flasered, and burrowed; sandstone, very fine- to fine-grained, light-gray, flasered with irregular partings of medium dark-gray shale, persistent just above and below middle. Divided into upper and lower units about middle sandstone member in southwest portion of quad. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Note: The Vandever Formation is mapped as three separate units (PNv, PNvu (upper member), and PNvl (lower member)) on the Lancing Quadrangle, however, all three units share the same lithologic description as shown above.

PNvnw - Vandever Formation, Newton Sandstone, and Whitwell Shale, undifferentiated (Lower Pennsylvanian)

Pvnw - Vandever, Newton, and Whitwell Formations, undifferentiated (Lower Pennsylvanian)

Upper part is shale, silty and carbonaceous, light- to dark-gray; and lenses of sandstone, silty, micaceous, carbonaceous, gray, fine-grained, thin-bedded; contains Morgan Springs coal near top. Middle part is lenticular sandstone, silty, micaceous, carbonaceous, light-brown to light-gray, fine- to medium-grained, thin-bedded; 0 to 50 feet thick. Lower part is alternating shale and siltstone, carbonaceous and micaceous, medium- to dark-gray, thinly laminated to thin-bedded; contains an unnamed coal seam near middle. Total thickness about 120 to 180 feet. (GRI Source Map ID 67760) ([Jones Knob Quadrangle](#)).

Pvnw - Vandever, Newton, and Whitwell Formations, undifferentiated (Lower Pennsylvanian)

Upper part is shale, silty and carbonaceous, light- to dark-gray; and lenses of sandstone, silty, micaceous, carbonaceous, gray, fine-grained, thin-bedded. Morgan Springs coal may be present near top. Middle part is lenticular sandstone, silty, micaceous, carbonaceous, light-brown to light-gray. (GRI Source Map ID 68448) ([Pilot Mountain Quadrangle](#)).

Pvnw - Vandever, Newton, and Whitwell Formations, undifferentiated (Lower Pennsylvanian)

Upper part is shale, silty and carbonaceous, light- to dark-gray; and lenses of sandstone, silty, micaceous, carbonaceous, gray, fine-grained, thin-bedded; Morgan Springs coal may be present near top. Middle part is lenticular sandstone, silty, micaceous, carbonaceous, light-brown to light-gray, fine- to medium-grained, thin-bedded; 0 to 50 feet thick. Lower part is alternating shale and siltstone,

carbonaceous and micaceous, medium- to dark-gray, thinly laminated to thin-bedded; coal seam may be present near middle. Total thickness about 150 feet. (*GRI Source Map ID 68526*) ([Twin Bridges Quadrangle](#)).

PNn - Newton Sandstone (Lower Pennsylvanian)

PNn - Newton Sandstone (Lower Pennsylvanian)

Sandstone, pale-pink, very light-gray, or yellowish-brown, fine- to coarse-grained with quartz pebbles locally, thin- to thick-bedded, crossbedded in part, micaceous, well- cemented. (*GRI Source Map ID 76047*) ([Fox Creek Quadrangle](#)).

PNn - Newton Sandstone (Lower Pennsylvanian)

Sandstone, pale-pink, very light-gray, or yellowish-brown, fine- to coarse-grained with quartz pebbles locally, thin- to thick-bedded, crossbedded in part, micaceous, well- cemented. (*GRI Source Map ID 76046*) ([Hebbertsburg Quadrangle](#)).

PNn - Newton Sandstone (Lower Pennsylvanian)

Sandstone, pale-pink, very light-gray, or yellowish-brown, fine- to coarse-grained with quartz pebbles locally, thin- to thick-bedded, crossbedded in part, micaceous, well- cemented. (*GRI Source Map ID 76045*) ([Lancing Quadrangle](#)).

PNw - Whitwell Shale (Lower Pennsylvanian)

PNw - Whitwell Shale (Lower Pennsylvanian)

In cross section only, no description provided. (*GRI Source Map ID 76047*) ([Fox Creek Quadrangle](#)).

PNw - Whitwell Shale (Lower Pennsylvanian)

Shale, medium dark-gray to grayish-black and black, silty, with plant fossils and ironstone nodules scattered through- out, carbonaceous adjacent to coals; interlaminated with sandstone, very fine-grained, light-gray, flasered, and burrowed. Richland coal occurs at or near base and thin Sewanee coal occurs locally just above middle; both coals underlain by seat earth, rooted claystone, medium- to dark gray to olive-black. (*GRI Source Map ID 76046*) ([Hebbertsburg Quadrangle](#)).

PNw - Whitwell Shale (Lower Pennsylvanian)

Shale, medium dark-gray to grayish-black and black, silty, with plant fossils and ironstone nodules scattered through- out, carbonaceous adjacent to coals; interlaminated with sandstone, very fine-grained, light-gray, flasered, and burrowed. Richland coal occurs at or near base and thin Sewanee coal occurs locally just above middle; both coals underlain by seat earth, rooted claystone, medium- to dark gray to olive-black. (*GRI Source Map ID 76045*) ([Lancing Quadrangle](#)).

PNs - Sewanee Conglomerate (Lower Pennsylvanian)

PNs - Sewanee Conglomerate (Lower Pennsylvanian)

In cross section only, no description provided. (*GRI Source Map ID 76047*) ([Fox Creek Quadrangle](#)).

PNs - Sewanee Conglomerate (Lower Pennsylvanian)

In cross section only, no description provided. (*GRI Source Map ID 76046*) ([Hebbertsburg Quadrangle](#)).

Ps - Sewanee Conglomerate (Lower Pennsylvanian)

Sandstone, micaceous, somewhat carbonaceous, pinkish- to yellowish-gray, very fine-grained, thin-bedded, with few or no pebbles; grades downward into fine-to coarse-grained sandstone and conglomeratic sandstone, medium- to very thick-bedded, cross-bedded. Maximum exposed thickness about 130 feet. (GRI Source Map ID 67760) ([Jones Knob Quadrangle](#)).

Ps - Sewanee Conglomerate (Lower Pennsylvanian)

Sandstone, medium light- to medium-gray, fine- to coarse- grained, medium- to thick- and very thick-bedded, cross- bedded, sparsely to very conglomeratic. Numerous quartz pebbles as much as 1 inch in diameter. Commonly well-cemented but with friable zones. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Ps - Sewanee Conglomerate (Lower Pennsylvanian)

Sandstone, micaceous, somewhat carbonaceous, pinkish-to yellowish-gray, very fine-grained, thin-bedded, with few or no pebbles; grades downward into fine-to coarse-grained sandstone and conglomeratic sandstone, medium- to very thick-bedded, crossbedded. About 50 to 60 feet exposed along Clear Creek in southwest corner of quadrangle. (GRI Source Map ID 68526) ([Twin Bridges Quadrangle](#)).

PNg - Gizzard Group (Lower Pennsylvanian)

Png - Gizzard Group (Lower Pennsylvanian)

In cross section only, no description provided. (GRI Source Map ID 76047) ([Fox Creek Quadrangle](#)).

Png - Gizzard Group (Lower Pennsylvanian)

In cross section only, no description provided. (GRI Source Map ID 76046) ([Hebbertsburg Quadrangle](#)).

Png - Gizzard Group (Lower Pennsylvanian)

Shale and siltstone, medium- to very dark-gray, silty, with interbedded laminae of silty sandstone and ironstone nodules; sandstone, medium light-gray, very fine- to fine-grained, thin- to medium-bedded, shaly; siltstone, medium- gray, mottled and fissile; Bon Air coals locally in two to three thin seams; several shale and sandstone horizons sheared and shattered by Cumberland Plateau overthrust fault. Exposed only in limited areas in the west (near Hatfield Mountain) and southwest parts of the quad. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Mp - Pennington Formation (Middle Mississippian)

Mp - Pennington Formation (Middle Mississippian)

In cross section only, no description provided. (GRI Source Map ID 76047) ([Fox Creek Quadrangle](#)).

Mp - Pennington Formation (Middle Mississippian)

In cross section only, no description provided. (GRI Source Map ID 76046) ([Hebbertsburg Quadrangle](#)).

Mp - Pennington Formation (Middle Mississippian)

In cross section only, no description provided. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Mb-Mh - Bangor Limestone-Hartselle Sandstone (Middle Mississippian)

Mb-Mh - Bangor Limestone-Hartselle Sandstone (Middle Mississippian)

In cross section only, no description provided. (GRI Source Map ID 76047) ([Fox Creek Quadrangle](#)).

Mb-Mh - Bangor Limestone-Hartselle Sandstone (Middle Mississippian)

In cross section only, no description provided. (GRI Source Map ID 76046) ([Hebbertsburg Quadrangle](#)).

Mb-Mh - Bangor Limestone-Hartselle Sandstone (Middle Mississippian)

In cross section only, no description provided. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Mm - Monteagle Limestone (Middle Mississippian)**Mm - Monteagle Limestone (Middle Mississippian)**

In cross section only, no description provided. (GRI Source Map ID 76047) ([Fox Creek Quadrangle](#)).

Mm - Monteagle Limestone (Middle Mississippian)

In cross section only, no description provided. (GRI Source Map ID 76046) ([Hebbertsburg Quadrangle](#)).

Mm - Monteagle Limestone (Middle Mississippian)

In cross section only, no description provided. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Msl-Mw - Saint Louis Limestone-Warsaw Limestone (Middle Mississippian)**Msl-Mw - Saint Louis Limestone-Warsaw Limestone (Middle Mississippian)**

In cross section only, no description provided. (GRI Source Map ID 76047) ([Fox Creek Quadrangle](#)).

Msl-Mw - Saint Louis Limestone-Warsaw Limestone (Middle Mississippian)

In cross section only, no description provided. (GRI Source Map ID 76046) ([Hebbertsburg Quadrangle](#)).

Msl-Mw - Saint Louis Limestone-Warsaw Limestone (Middle Mississippian)

In cross section only, no description provided. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Mfp-MDc - Fort Payne Formation-Chattanooga Shale (Lower Mississippian and Upper Devonian)**Mfp-MDc - Fort Payne Formation-Chattanooga Shale (Lower Mississippian and Upper Devonian)**

In cross section only, no description provided. (GRI Source Map ID 76047) ([Fox Creek Quadrangle](#)).

Mfp-MDc - Fort Payne Formation-Chattanooga Shale (Lower Mississippian and Upper Devonian)

In cross section only, no description provided. (GRI Source Map ID 76046) ([Hebbertsburg Quadrangle](#)).

Mfp-MDc - Fort Payne Formation-Chattanooga Shale (Lower Mississippian and Upper Devonian)

In cross section only, no description provided. (GRI Source Map ID 76045) ([Lancing Quadrangle](#)).

Och - Chickamauga Group (Ordovician)**Och - Chickamauga Group (Ordovician)**

In cross section only, no description provided. (GRI Source Map ID 76047) ([Fox Creek Quadrangle](#)).

Och - Chickamauga Group (Ordovician)

In cross section only, no description provided. (*GRI Source Map ID 76046*) ([Hebbertsburg Quadrangle](#)).

Och - Chickamauga Group (Ordovician)

In cross section only, no description provided. (*GRI Source Map ID 76045*) ([Lancing Quadrangle](#)).

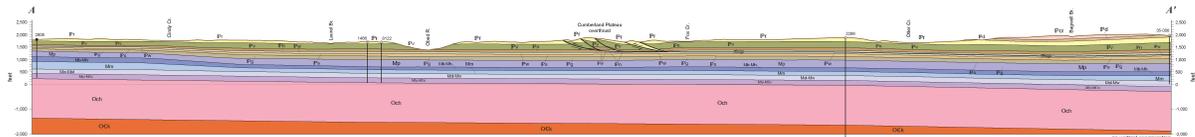
OCk - Knox Group (Ordovician and Cambrian)

In cross section only, no description provided. (*GRI Source Map ID 76047*) ([Fox Creek Quadrangle](#)).

Geologic Cross Sections

The geologic cross sections present in the GRI digital geologic-GIS data produced for Obed Wild & Scenic River, Tennessee (OBED) are presented below. Note that cross section abbreviations on the Lansing and Hebbertsburg maps have been changed from their source map abbreviation so that each cross section abbreviation is unique in the GRI digital geologic-GIS data (e.g., A-A' on the Lansing map has been changed to B-B' in the GRI digital geologic-GIS data). Cross section graphics were scanned at a high resolution and can be viewed in more detail by zooming in (if viewing the digital format of this document).

Cross Section A-A'

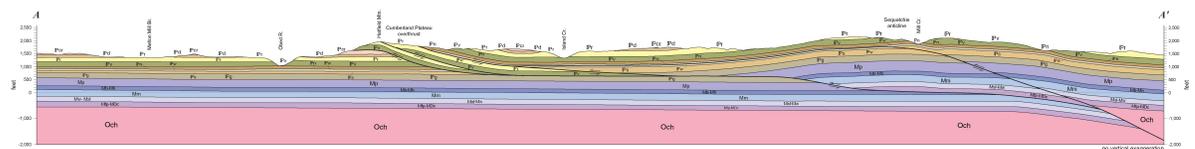


Legend of geologic units shown only in cross section

Lower Pennsylvanian	}	IPw	Whitwell Shale
		IPs	Sewanee Conglomerate
		IPg	Gizzard Group
Middle Mississippian	}	Mp	Pennington Formation
		Mb-Mh	Bangor Limestone-Hartselle Sandstone
		Mm	Monteagle Limestone
		Msl-Mw	Saint Louis Limestone-Warsaw Limestone
Lower Miss.–Upper Devonian	}	Mfp-MDc	Fort Payne Formation-Chattanooga Shale
Ordovician	}	Och	Chickamauga Group
Ordovician–Cambrian	}	Ock	Knox Group

Extracted from: ([Fox Creek Quadrangle](#)).

Cross Section B-B'

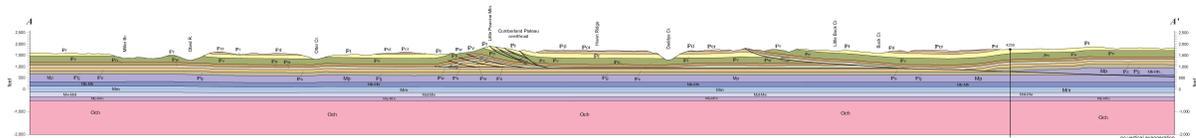


Legend of geologic units shown only in cross section

Middle Mississippian	{	Mp	Pennington Formation
		Mb-Mh	Bangor Limestone-Hartselle Sandstone
		Mm	Monteagle Limestone
		Msl-Mw	Saint Louis Limestone-Warsaw Limestone
Lower Miss.-Upper Devonian	{	Mfp-MDc	Fort Payne Formation-Chattanooga Shale
		Och	Chickamauga Group

Extracted from: ([lancing Quadrangle](#)). Note: This cross section was renamed to B-B' in the GRI digital geologic-GIS data.

Cross Section C-C'



Legend of geologic units shown only in cross section

Lower Pennsylvanian	{	IPs	Sewanee Conglomerate
		IPg	Gizzard Group
Middle Mississippian	{	Mp	Pennington Formation
		Mb-Mh	Bangor Limestone-Hartselle Sandstone
		Mm	Monteagle Limestone
		Msl-Mw	Saint Louis Limestone-Warsaw Limestone
Lower Miss.-Upper Devonian	{	Mfp-MDc	Fort Payne Formation-Chattanooga Shale
		Och	Chickamauga Group

Extracted from: ([Hebbertsburg Quadrangle](#)). Note: This cross section was renamed to C-C' in the GRI digital geologic-GIS data.

GRI Source Ancillary Map Information

Fox Creek Quadrangle

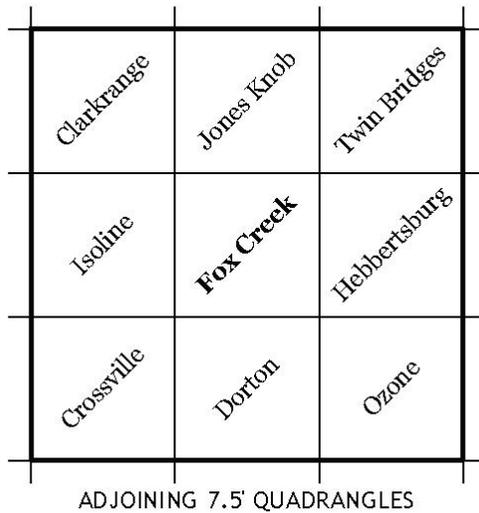
Scruggs, P. Levader, Rascoe, B., Stearns, Richard G., Hansen, Bryan R., Wunderlich, Andrew L. and Hatcher, Robert D. Jr., 2015, Geologic Map of the Fox Creek 7.5-Minute Quadrangle, Tennessee: University of Tennessee, 7.5-Minute Series Map, scale 1:24,000. (GRI Source Map ID 76047).

Correlation and Explanation of Mapped Units

SYSTEM AND SERIES	GROUP	FORMATION AND BED	LITHOLOGY	THICKNESS IN FEET	EXPLANATION	
PENNSYLVANIAN	Crooked Fork	Crossville Sandstone		40-240	<p>IPcr</p> <p>Crossville Sandstone</p> <p>Sandstone, light-gray, stained to various shades of reddish-yellow, weathers yellowish-gray, very fine- to fine-grained, very thin- to thick-bedded, upper third predominantly shale, sandy and silty, and thin-bedded sandstone. Lower third typically thin- to medium-bedded, cross-bedded, intervals throughout interbedded and flasered with shale, olive-gray to olive-black, silty, with thin interbeds of sandstone. Where faulted, sandstone microfractured into yellowish-gray, dense, jointed cataclasisite.</p>	
		Potters Falls Coal		0-26	<p>IPd</p> <p>Dorton Shale</p> <p>Shale, silty to sandy and with a few layers of ironstone, medium dark- to dark-gray and olive-gray; siltstone, olive-gray to olive-black; with laminae and beds of sandstone, light gray, very fine-grained, flasered and burrowed; Potters Falls coal near top and Rex coal near bottom, both underlain by seat earths.</p>	
		Dorton Shale		40-140		
			Rex Coal		0-32	<p>IPr</p> <p>Rockcastle Conglomerate</p> <p>Sandstone, light-gray, fine- to coarse-grained, medium- to very thick-bedded, generally cross-bedded, small scattered quartz pebbles common, predominates in the lower part. Unit locally interbedded with partings and thin beds of medium dark-gray shale. Upper part silty, dark-gray shale and siltstone interbedded with sandstone, medium light-gray, very fine- to fine-grained. Top of formation marked by persistent thin bed of sandstone usually seen only in well logs. Persistent Nemo coal and seat earth near base of upper shale unit. Where faulted, sandstone microfractured into yellowish-gray, dense jointed cataclasisite.</p>
			Nemo Coal		0-33	
			Rockcastle Conglomerate		90-210	
	Crab Orchard Mountains	Vandever Shale		140-280	<p>IPv</p> <p>Vandever Formation</p> <p>Shale and siltstone, silty, medium dark-gray to olive-gray, persistent at top, middle, and base of formation, inter-laminated with sandstone, very fine- to fine-grained, light gray, tipped, flasered, and burrowed; sandstone, very fine- to fine-grained, light-gray, flasered with irregular partings of medium dark-gray shale, persistent just above and below middle. Divided into upper and lower units about middle sandstone member in southwest portion of quad.</p>	
		Newton Sandstone		90-305	<p>IPn</p> <p>Newton Sandstone</p> <p>Sandstone, pale-pink, very light-gray, or yellowish-brown, fine- to coarse-grained with quartz pebbles locally, thin- to thick-bedded, crossbedded in part, micaceous, well-cemented.</p>	

Extracted from: [\(Fox Creek Quadrangle\)](#).

Quadrangle Location



Extracted from: ([Fox Creek Quadrangle](#)).

Map Legend

Geologic structures

- ⊕ Horizontal bedding
- ↘₁₂ Strike and dip of inclined bedding
- × Strike of vertical bedding
- ↗¹² Trend and plunge of small, inclined fold hinge
- ↖¹² Trend and plunge of mineral lineation

Mining and natural resources

- ⁴²⁵⁶ Ⓞ Oil/gas well showing TN permit number
- ⊗ Abandoned quarry

Fault contacts

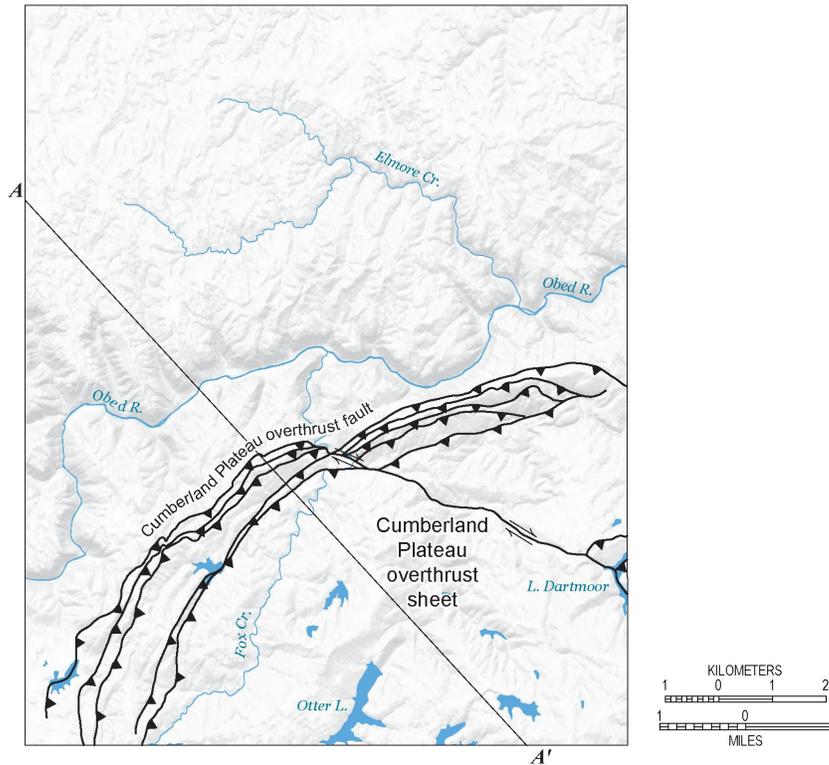
- Strike-slip fault, arrows indicate movement sense
(solid where certain, long dashes where approximate, dotted where concealed)
- Thrust fault, teeth on hanging wall
(solid where certain, long dashes where approximate, dotted where concealed)

Stratigraphic contacts

- (solid where certain, long dashes where approximate, dotted where concealed)

Extracted from: ([Fox Creek Quadrangle](#)).

Tectonic Map



Extracted from: ([Fox Creek Quadrangle](#)).

Hebbertsburg Quadrangle

Scruggs, P. Levader, Stearns, Richard G., Hansen, Bryan R., Wunderlich, Andrew L. and Hatcher, Robert D. Jr., 2015, Geologic Map of the Hebbertsburg 7.5-Minute Quadrangle, Tennessee: University of Tennessee, 7.5-Minute Series Map, scale 1:24,000. (GRI Source Map ID 76046).

Correlation and Explanation of Mapped Units

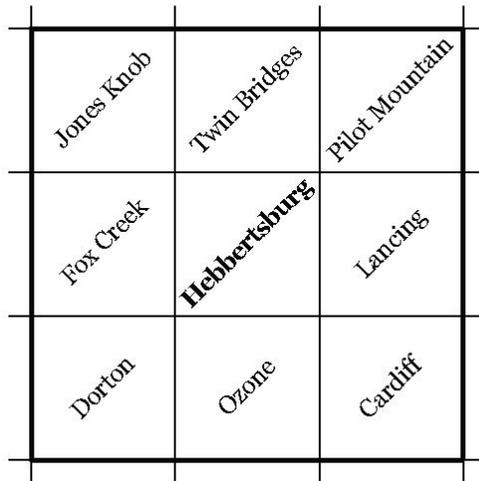
SYSTEM AND SERIES	GROUP	FORMATION AND BED	LITHOLOGY	THICKNESS IN FEET	EXPLANATION			
PENNSYLVANIAN	Lower Pennsylvanian	Crooked Fork	Crossville Sandstone		40-240	<p>Pcr</p> <p>Crossville Sandstone</p> <p>Sandstone, light-gray, stained to various shades or reddish-yellow, weathers yellowish-gray, very fine- to fine-grained, very thin- to thick-bedded; upper third predominantly shale, sandy and silty, and thin-bedded sandstone. Lower third typically thin- to medium-bedded, cross-bedded; intervals throughout interbedded and flasered with shale, olive-gray to olive-black, silty, with thin interbeds of sandstone. Where faulted, sandstone microfractured into yellowish-gray, dense, jointed cataclastite.</p>		
			Potters Falls Coal		0-28	<p>Pd</p> <p>Dorton Shale</p> <p>Shale, silty to sandy and with a few layers of ironstone, medium dark- to dark-gray and olive-gray; siltstone, olive-gray to olive-black; with laminae and beds of sandstone, light gray, very fine-grained, flasered and burrowed; Potters Falls coal near top and Rex coal near bottom, both underlain by seat earths.</p>		
			Dorton Shale		40-140			
				Rex Coal		0-32	<p>Ppr</p> <p>Rockcastle Conglomerate</p> <p>Sandstone, light-gray, fine- to coarse-grained, medium- to very thick-bedded, generally cross-bedded, small scattered quartz pebbles common, predominates in the lower part. Unit locally interbedded with partings and thin beds of medium dark-gray shale. Upper part silty, dark-gray shale and siltstone interbedded with sandstone, medium light-gray, very fine- to fine-grained. Top of formation marked by persistent thin bed of sandstone usually seen only in well logs. Persistent Nemo coal and seat earth near base of upper shale unit. Where faulted, sandstone microfractured into yellowish-gray, dense jointed cataclastite.</p>	
				Nemo Coal		0-33		
				Rockcastle Conglomerate		90-210		
		Crab Orchard Mountains		Vandever Shale		140-280	<p>Pv</p> <p>Vandever Formation</p> <p>Shale and siltstone, silty, medium dark-gray to olive-gray, persistent at top, middle, and base of formation; inter-laminated with sandstone, very fine- to fine-grained, light gray, rippled, flasered, and burrowed; sandstone, very fine- to fine-grained, light-gray, flasered with irregular partings of medium dark-gray shale, persistent just above and below middle. Divided into upper and lower units about middle sandstone member in southwest portion of quad.</p>	
				Newton Sandstone		90-205	<p>Pn</p> <p>Newton Sandstone</p> <p>Sandstone, pale-pink, very light-gray, or yellowish-brown, fine- to coarse-grained with quartz pebbles locally, thin- to thick-bedded, crossbedded in part, micaceous, well-cemented.</p>	
					Whitwell Shale		15-90	<p>Pw</p> <p>Whitwell Shale</p> <p>Shale, medium dark-gray to grayish-black and black, silty, with plant fossils and ironstone nodules scattered throughout, carbonaceous adjacent to coals, interlaminated with sandstone, very fine-grained, light-gray, flasered and burrowed. Richland coal occurs at or near base and thin Sewanee coal occurs locally just above middle; both coals underlain by seat earth, rooted claystone, medium- to dark gray to olive-black.</p>
					Sewanee Coal			
					Richland Coal			

Extracted from: ([Hebbertsburg Quadrangle](#)).

Quadrangle Location



QUADRANGLE LOCATION



ADJOINING 7.5' QUADRANGLES

Extracted from: ([Hebbertsburg Quadrangle](#)).

Map Legend

Geologic structures

- ⊕ Horizontal bedding
- \swarrow_{12} Strike and dip of inclined bedding
- \times Strike of vertical bedding
- \nearrow^{12} Trend and plunge of small, inclined fold hinge
- \nearrow^{12} Trend and plunge of mineral lineation

Mining and natural resources

- 4256 Ⓞ Oil/gas well showing TN permit number
- ⊗ Abandoned quarry

Fault contacts

Strike-slip fault, arrows indicate movement sense
(solid where certain, long dashes where approximate, dotted where concealed)

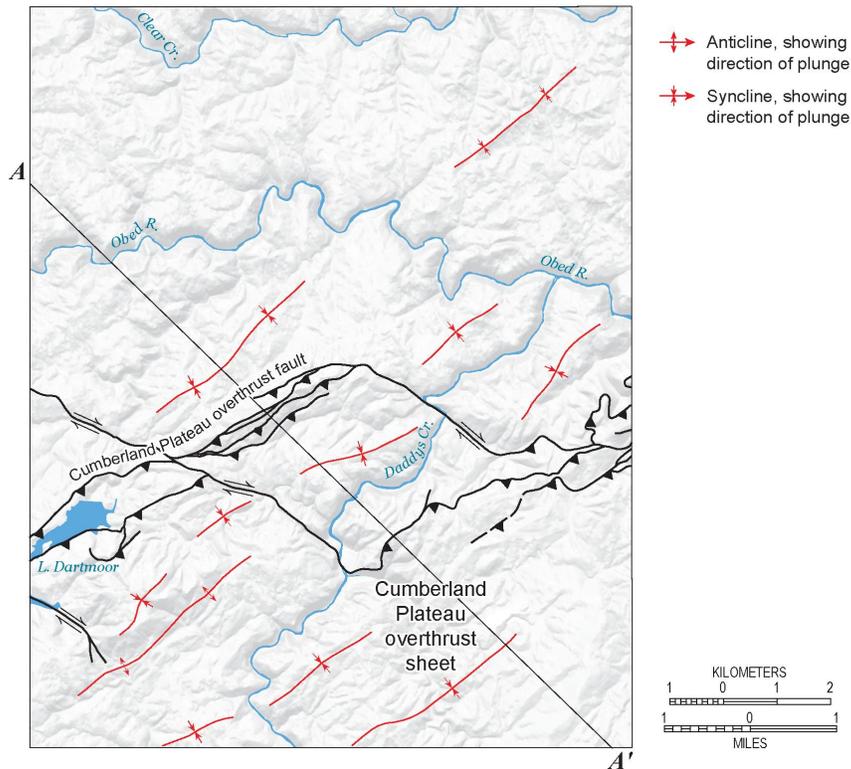
Thrust fault, teeth on hanging wall
(solid where certain, long dashes where approximate, dotted where concealed)

Stratigraphic contacts

(solid where certain, long dashes where approximate, dotted where concealed)

Extracted from: ([Hebbertsburg Quadrangle](#)).

Tectonic Map



Extracted from: ([Hebbertsburg Quadrangle](#)).

Jones Knob Quadrangle (GM 116-NW)

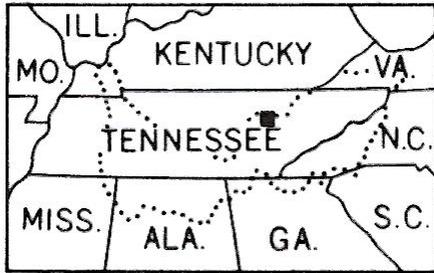
Coker, A.E., 1965, Geologic Map and Mineral Resources Summary of the Jones Knob Quadrangle, Tennessee: Tennessee Division of Geology, Geologic Map GM 116-NW, scale 1:24,000. (GRI Source Map ID 67760).

Correlation and Explanation of Mapped Units

<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">Pcr</div> <p style="text-align: center;">Crossville Sandstone</p> <p>Sandstone, yellowish-green and light- to reddish-brown, fine- to coarse-grained, medium-bedded, crossbedded in part, loosely cemented on outcrop. Maximum preserved thickness about 20 feet.</p>	PENNSYLVANIAN
<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">Pd</div> <p style="text-align: center;">Dorton Shale</p> <p>Shale, silty, greenish-yellow and reddish-brown to brownish-gray, with minor siltstone in places; grades downward into underlying Rockcastle Sandstone through a short interval of siltstone and fine-grained, thinly laminated sandstone. Thickness about 95 feet.</p>	
<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">Pr</div> <p style="text-align: center;">Rockcastle Sandstone</p> <p>Sandstone, fine-grained, thin-bedded; grades downward into conglomeratic sandstone, coarse-grained, medium- to very thick-bedded, crossbedded in part; all yellowish- or light brownish-gray. Locally present near middle of formation is as much as 30 feet of shale containing Nemo coal. Thickness 100 to 190 feet.</p>	
<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">Pvnw</div> <p style="text-align: center;">Vandever, Newton, and Whitwell Formations, Undifferentiated</p> <p>Upper part is shale, silty and carbonaceous, light- to dark-gray; and lenses of sandstone, silty, micaceous, carbonaceous, gray, fine-grained, thin-bedded; contains Morgan Springs coal near top. Middle part is lenticular sandstone, silty, micaceous, carbonaceous, light-brown to light-gray, fine- to medium-grained, thin-bedded; 0 to 50 feet thick. Lower part is alternating shale and siltstone, carbonaceous and micaceous, medium- to dark-gray, thinly laminated to thin-bedded; contains an unnamed coal seam near middle. Total thickness about 120 to 180 feet.</p>	
<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">Ps</div> <p style="text-align: center;">Sewanee Conglomerate</p> <p>Sandstone, micaceous, somewhat carbonaceous, pinkish- to yellowish-gray, very fine-grained, thin-bedded, with few or no pebbles; grades downward into fine- to coarse-grained sandstone and conglomeratic sandstone, medium- to very thick-bedded, crossbedded. Maximum exposed thickness about 130 feet.</p>	

Extracted from: ([Jones Knob Quadrangle](#)).

Quadrangle Location



Extracted from: ([Jones Knob Quadrangle](#)).

Map Legend

	Contact, dashed where approximate		
	Strike and dip of beds		
	Horizontal		
	Dip less than 5°		
	Active mine	c	Coal
	Abandoned mine	ss	Sandstone
	Prospect		
	Coal cropline (Nemo coal), dashed where approximate		
	Coal cropline (Morgan Springs coal), dashed where approximate		
	Coal cropline (unnamed coal), dashed where approximate		
2	Map numbers refer to descriptions in Mineral Resources Summary		

Extracted from: *Extracted from:* ([Jones Knob Quadrangle](#)).

Mineral Resource Summary

Mineral Resources Summary of the Jones Knob Quadrangle, Tennessee

by Alfred Coker

All mineral resources map numbers presented below correspond to a locality in the GRI digital geologic-GIS data, in the Mine Point Features (obedmin) feature class/data layer, with the same map number.

Report Text

Introduction

This summary accompanies the geologic map of the Jones Knob quadrangle, which is bounded by 36° 07'30" and 36°15' N. Latitude and by 84°52'30" and 85°00' W. Longitude, an area surrounding the junction of Fentress, Morgan, and Cumberland Counties. The mineral resources that have been mined in this quadrangle are coal and sandstone (dimension). Potential resources are sand (for construction

purposes) and shale (for lightweight aggregate and ceramic uses). Mines and prospects have been located with reference to the Tennessee Coordinate System. The base point for this system (at the intersection of 86°00' W. Longitude and 34°40' N. Latitude near Scottsboro, Alabama) is assigned the values 2,000,000 feet east and 100,000 feet north. The coordinate location (in feet) of any point in Tennessee may be expressed with reference to its distance east-west and north of this base point. This system is shown in gray on the quadrangle map as a grid of 10,000-foot rectangles. All locations on this map may be measured from the reference coordinates shown along the margins of the quadrangle. Distances given in geographic descriptions of the locations of individual mining operations represent direct linear measurements and not road mileages.

Coal

Seven abandoned mines or prospects have been opened in the Morgan Springs, Nemo, and other unnamed seams. Most of the mines were small underground operations that employed only a few men. Available data permit a reliable estimate of production for only the Nemo seam, from which about 6,000 tons of coal was mined.

Geology of the Coal Seams

The coal-bearing rocks of the Jones Knob quadrangle are of Pennsylvanian age (lower Pottsville Series) and underlie all of this quadrangle. Coal seams that have been mined or prospected are interbedded with shales, siltstones, and sandstones of the Crab Orchard Mountains Group. In general, the coals are within shales and siltstones, but in places coal is in contact with thick sandstone beds. Underclays are almost everywhere associated with the seams.

Unnamed Coal

An unnamed coal is found in bituminous shale and siltstone (PN_nw on the map) approximately 120 feet below the base of the Rockcastle Sandstone and 40 feet above the top of the Sewanee Conglomerate. It is underlain by clay and shale and is overlain by shale and fine-grained sandstone. This seam is approximately 7 inches thick and has been opened in the Jones Knob quadrangle area in two places on Myatt Creek (Map Numbers-1 and 2).

Morgan Springs Coal

This seam occurs in bituminous shale just beneath the base of the Rockcastle Sandstone (near the top of PN_nw on the map). It is underlain by 3 to 8 feet of underclay and as much as 40 feet of shale; it is overlain by 4 to 15 feet of shale, which in turn is overlain by the Rockcastle Sandstone. The seam has been worked at one locality (Map Number-3), between Pine Creek and Myatt Creek.

Nemo Coal

At some localities a shaly unit that locally contains the Nemo coal occurs in the middle of the Rockcastle Sandstone (PN_r on the map). This seam has been opened at four localities (Map Numbers-4, 5, 6, and 7) near Beatty School (Luther, 1959, p. 177). It is underlain by 4 to 20 feet of underclay and shale; it is overlain by 5 to 10 feet of bituminous shale, which in turn is overlain by the Rockcastle Sandstone. The outcrop is not persistent over a wide area, and throughout much of the quadrangle the coal may be lenticular or absent.

Reserves

Estimated reserves of recoverable coal in this quadrangle are 515,000 tons, all in the Nemo seam. Measured reserves are those within 500 feet of a mine opening, facing, or other information point, indicated reserves are within 1,000 feet, and inferred reserves are within 2,000 feet, where geologic information indicates that the coal beds are continuous and uniform (or predictably variable) in thickness. The above diameters were used for computing reserves instead of the conventional 1/4, 1/2, and 1 mile diameters because of the wide range of coal thickness within short distances. Recoverable reserves are

considered to include coal more than 28 inches thick (because beds thinner than this at the present time cannot be mined underground economically) and are calculated as 50 percent of the total estimated to be in the ground.

TABLE 2. SUMMARY OF ESTIMATED RECOVERABLE COAL RESERVES IN THE JONES KNOB QUADRANGLE.

(in short tons)

<i>Seam</i>	<i>Measured reserves</i>	<i>Indicated reserves</i>	<i>Inferred reserves</i>	<i>Total</i>
Nemo	85,000	123,000	307,000	515,000
			Total	515,000

Selected Reference

Luther, E. T. (1959) The Coal Reserves of Tennessee: Tenn. Div. Geology Bull. 63.

Sandstone (Dimension)

Dimension sandstone suitable for quarrying is present throughout much of the Cumberland Plateau. All the rock quarried has certain general characteristics. It is fine- to medium-grained quartzose sandstone with silica cement. Individual beds are generally 2 to 5 inches thick and are separated by well-defined bedding planes that are continuous for several yards. Where relatively fresh, the stone is uniform light gray. Weathered stone is generally brown but commonly is pastel shades of tan, buff, yellow to bluegray, and pink. Diffusion bands of iron oxides are common in many layers; for some uses these strata are preferred to those of more uniform color. An active quarry (Map Number-8) in the Rockcastle Sandstone on the east side of Peter Branch, a tributary to Clear Creek (Tennessee Coordinates 648,800N., 2,300,000E.), is operated by the Sunbright Stone Company of Sunbright, Tennessee. The quarry dimensions are approximately 300 feet by 1,500 feet and the average face height is about 20 feet. Thickness of individual beds being mined ranges from 2 inches to 2 feet.

Selected Reference

Webb, G. W. (1958) The Sandstone Industry of the Crossville-Crab Orchard District, Tennessee: Tenn. Acad. Sci. Jour., v. 33, no. 1.

Sand and Shale

Sand for construction purposes is available from the Rockcastle Sandstone (PNr on the map) where it is weathered soft and friable, and also may be obtained by crushing fresh rock. Shale for lightweight aggregate or ceramic uses may be found in the Whitwell, Vandever, and Dorton formations.

Selected Reference

Conley, J. E., Wilson, Hewitt, Klinefelter, T. A., AND Others (1948) Production of Lightweight Concrete Aggregates from Clays, Shales, Slates, and Other Materials: U. S. Bur. Mines Rept. Inv. 4401.

Extracted from: *Extracted from: ([Jones Knob Quadrangle](#)).*

Map Numbers 1-7 (Table 1)

<i>Map number</i>	<i>Description</i>	<i>Coal thickness (inches)</i>	<i>Tennessee Coordinates</i>
UNNAMED COAL			
1	Prospect pit 4 feet wide, 5 feet long, 4 feet deep	6 to 8	640,100N., 2,305,400E.
2	Prospect pit, covered with talus	640,050N., 2,305,650E.
MORGAN SPRINGS COAL			
3	Inactive mine, name unknown. Adit caved.	641,650N., 2,310,700E.
NEMO COAL			
4	Inactive mine, name un- known. Adit 4 feet high, 7 feet across; extends NE for unknown distance	45	671,700N., 2,322,000E.
5	Inactive mine, name un- known. Adit 4 feet high, 7 feet across; extends N for unknown distance	45	671,700N., 2,322,150E.
6	Prospect pit 4 feet wide, 5 feet long, 3 feet deep	671,700N., 2,322,250E.
7	Inactive mine, name un- known. Adit 4 feet high, 7 feet across; extends N for unknown distance	40	671,150N., 2,323,450E.

Extracted from: *Extracted from:* ([Jones Knob Quadrangle](#)).

Lancing Quadrangle

Scruggs, P. Levader, Moore, James L., Gilmore, Donald F., Hansen, Bryan R., Wunderlich, Andrew L., Rehrer, Justin R. and Hatcher, Robert D. Jr., 2015, Geologic Map of the Lancing 7.5-Minute Quadrangle, Tennessee: University of Tennessee, 7.5-Minute Series Map, scale 1:24,000. (*GRI Source Map ID 76045*).

Surficial Deposits

Mine Fill

Unconsolidated rock, mud, and mine tailings. Most prominent near abandoned strip mines between Rock Creek and Camp Branch. 0 to 60 feet thick. (*GRI Source Map ID 76045*) ([Lancing Quadrangle](#)).

Debris Flow

Boulders, cobbles, pebbles, angular to rounded. (*GRI Source Map ID 76045*) ([Lancing Quadrangle](#)).

Correlation and Explanation of Mapped Units

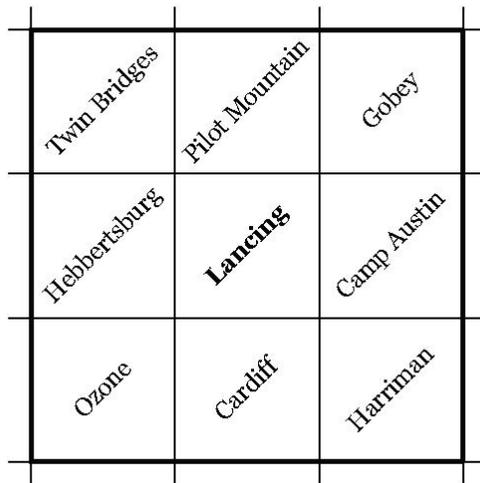
SYSTEM AND SERIES	GROUP	FORMATION AND BED	LITHOLOGY	THICKNESS IN FEET	EXPLANATION
QUATERNARY	Pleistocene & Holocene	Surficial Deposits			
		Mine fill		0-60	 <p>Surficial Deposits</p> <p>Mine fill – Unconsolidated rock, mud, and mine tailings. Most prominent near abandoned strip mines between Rock Creek and Camp Branch. 0 to 60 feet thick.</p>
PENNSYLVANIAN	Lower Pennsylvanian	Debris flow			 <p>Debris flow – Boulders, cobbles, pebbles, angular to rounded.</p>
		Wartburg Sandstone		15-70	 <p>Wartburg Sandstone (lower member)</p> <p>Sandstone, light- to medium-gray, fine- to medium-grained, thin- to thick-bedded, typically very cross-bedded. Only lower member present in northeastern part of quad.</p>
		Glenmary Shale		120-160	 <p>Glenmary Shale</p> <p>Shale, olive-gray to olive-black and medium-gray, silty to sandy; siltstone, olive-gray to olive-black; and sandstone, medium light-gray, fine- to medium-grained, thin-bedded, typically interbedded with shales and siltstones.</p>
		Coalfield Sandstone		30-80	 <p>Coalfield Sandstone</p> <p>Sandstone, light-gray to medium light- and olive-gray, very fine- to medium-grained, thin- to medium-bedded, silty, shaly, typically poorly cemented; middle part typically shale, olive-gray to olive-black, sandy, with siltstone laminae and beds.</p>
		Burnt Mill Shale		40-120	 <p>Burnt Mill Shale</p> <p>Shale, dark-gray to olive-black, clayey to silty; siltstone, olive-gray to olive-black; locally interbedded with laminae and thin beds of sandstone, light- to medium light-gray, very fine- to fine-grained with shale laminae; Hooper coal and associated seat earth, dark-gray to olive-gray, rooted, occurs locally near base of formation.</p>
		Hooper Coal		0-15	 <p>Burnt Mill Shale</p> <p>Sandstone, light-gray, stained to various shades of reddish-yellow, weathers yellowish-gray, very fine- to fine-grained, very thin- to thick-bedded; upper third predominantly shale, sandy and silty, and thin-bedded sandstone. Lower third typically thin- to medium-bedded, cross-bedded; intervals throughout interbedded and flasered with shale, olive-gray to olive-black, silty, with thin interbeds of sandstone. Where faulted, sandstone microfractured into yellowish-gray, dense, jointed cataclasis.</p>
		Crossville Sandstone		40-240	 <p>Dorton Shale</p> <p>Shale, silty to sandy and with a few layers of ironstone, medium dark- to dark-gray and olive-gray; siltstone, olive-gray to olive-black; with laminae and beds of sandstone, light gray, very fine-grained, flasered and burrowed; Potters Falls coal near top and Rex coal near bottom, both underlain by seat earths.</p>
		Potters Falls Coal		0-28	 <p>Rockcastle Conglomerate</p> <p>Sandstone, light-gray, fine- to coarse-grained, medium- to very thick-bedded, generally cross-bedded, small scattered quartz pebbles common, predominates in the lower part. Unit locally interbedded with partings and thin beds of medium dark-gray shale. Upper part silty, dark-gray shale and siltstone interbedded with sandstone, medium light-gray, very fine- to fine-grained. Top of formation marked by persistent thin bed of sandstone usually seen only in well logs. Persistent Nemo coal and seat earth near base of upper shale unit. Where faulted, sandstone microfractured into yellowish-gray, dense jointed cataclasis.</p>
		Dorton Shale		40-140	 <p>Vandever Formation</p> <p>Shale and siltstone, silty, medium dark-gray to olive-gray, persistent at top, middle, and base of formation; inter-laminated with sandstone, very fine- to fine-grained, light gray, rippled, flasered, and burrowed; sandstone, very fine- to fine-grained, light-gray, flasered with irregular partings of medium dark-gray shale, persistent just above and below middle. Divided into upper and lower units about middle sandstone member in southwest portion of quad.</p>
		Rex Coal		0-32	 <p>Newton Sandstone</p> <p>Sandstone, pale-pink, very light-gray, or yellowish-brown, fine- to coarse-grained with quartz pebbles locally, thin- to thick-bedded, crossbedded in part, micaceous, well-cemented.</p>
		Rockcastle Conglomerate		90-210	 <p>Whitwell Shale</p> <p>Shale, medium dark-gray to grayish-black and black, silty, with plant fossils and ironstone nodules scattered throughout, carbonaceous adjacent to coals; interlaminated with sandstone, very fine-grained, light-gray, flasered, and burrowed. Richland coal occurs at or near base and thin Sewanee coal occurs locally just above middle; both coals underlain by seat earth, rooted claystone, medium- to dark gray to olive-black.</p>
		Nemo Coal		0-33	 <p>Whitwell</p> <p></p>
		Vandever Shale		140-380	
		Newton Sandstone		90-205	
		Sewanee Coal			
		Whitwell		90	

Extracted from: ([lancing Quadrangle](#)).

Quadrangle Location



QUADRANGLE LOCATION



ADJOINING 7.5' QUADRANGLES

Extracted from: ([lancing Quadrangle](#)).

Map Legend

Geologic structures

- ⊕ Horizontal bedding
- $\frac{\diagup}{12}$ Strike and dip of inclined bedding
- ⌘ Strike of vertical bedding
- \nearrow^{12} Trend and plunge of small, inclined fold hinge
- \nearrow^{12} Trend and plunge of mineral lineation

Mining and mineral resources

- ⊗ Open pit or quarry
- ⊗ Abandoned quarry
- ⌘ Location of coal outcrop (historical)
- ⌘ Mine prospect (historical)
- ⌘ Adit or tunnel entrance (historical)
- Strip mine, dashed where inferred (historical)

Fault contacts

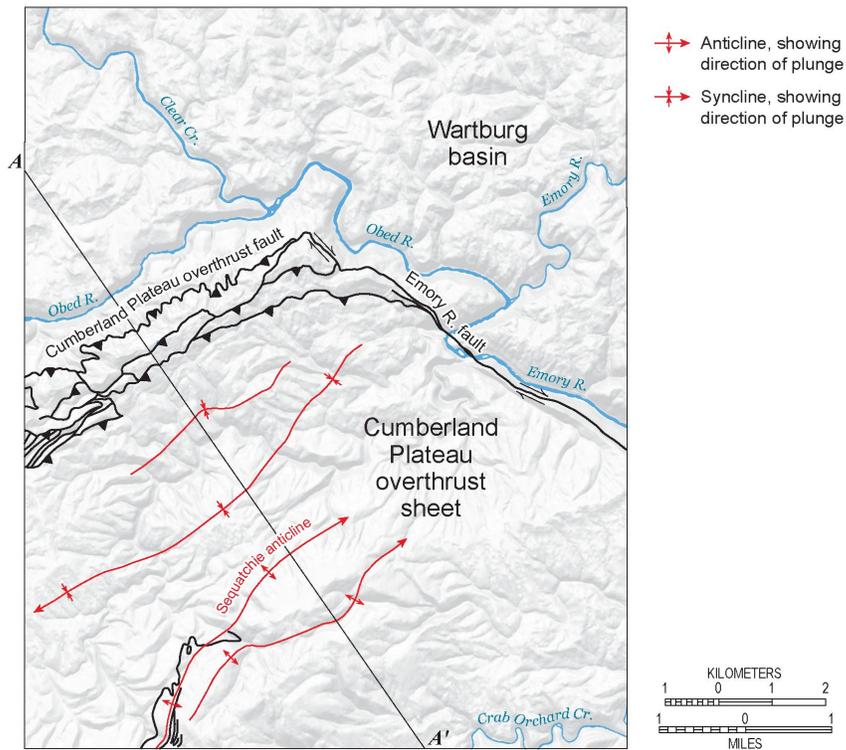
- Strike-slip fault, arrows indicate movement sense
(solid where certain, long dashes where approximate, dotted where concealed)

- Thrust fault, teeth on hanging wall
(solid where certain, long dashes where approximate, dotted where concealed)

- Stratigraphic contacts
(solid where certain, long dashes where approximate, dotted where concealed)

Extracted from: ([lancing Quadrangle](#)).

Tectonic Map



Extracted from: ([Lancing Quadrangle](#)).

Pilot Mountain Quadrangle (GM 122-NW)

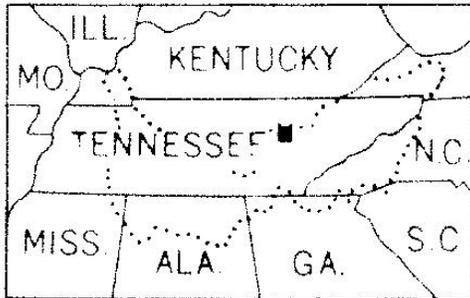
Finlayson, C.P., Powell, R.L., Kronman, G.E., and Moore, J.L., 1985, Geologic Map and Mineral Resources Summary of the Pilot Mountain Quadrangle, Tennessee: Tennessee Division of Geology, Geologic Map GM 122-NW, scale 1:24,000. (*GRI Source Map ID 68448*).

Correlation and Explanation of Mapped Units

SYSTEM AND SERIES	GROUP, FORMATION, AND BED	LITHOLOGY	THICKNESS IN FEET	LEGEND		
PENNSYLVANIAN	Middle Pennsylvanian	Indian Bluff Formation		320+	<p>Pib</p> <p>Indian Bluff Formation Sandstone, yellowish-gray to yellowish-brown, fine- to medium-grained, thin- to thick-bedded, crossbedded in part, lenticular; and shale, clayey to sandy, light brown to dark-gray, with intercalated siltstone and sandstone; preserved only on Pilot Mountain; base of formation at top of Jellico coal.</p>	
		Jellico coal			<p>Psl</p> <p>Slatestone Formation Shale, clayey to sandy, olive-gray to grayish-black, with intercalated siltstone and sandstone and sandstone, yellowish-gray to yellowish-brown, fine- to medium-grained, thin- to thick-bedded, crossbedded in part. Preserved only on top of Pilot Mountain. Base of formation at top of Poplar Creek coal.</p>	
		Slatestone Formation		500,000	<p>Pwb</p> <p>Wartburg Sandstone Sandstone, quartzose, light olive-gray, olive-gray, brownish-yellow, buff to medium-dark-gray, very fine-grained to fine-grained, thin- to thick-bedded, slightly micaceous and silty; crossbedded, with a few carbonaceous streaks.</p>	
	Lower Pennsylvanian	Crooked Fork Group	Wartburg Sandstone		80,100	<p>Pg</p> <p>Glenmary Shale Shale, silty and slightly micaceous, light to medium-gray with some grayish-black siltstone, medium- to medium-dark-gray; some grayish-black carbonaceous specks; beds grade from shale to siltstone.</p> <p>Pgc PgcH Pgs</p> <p>Glenmary Shale, Coalfield Sandstone, and Burnt Mill Shale Undifferentiated Shale, silty, light- to dark-gray, interbedded with thin, yellowish, olive- to brownish-gray, fine-grained, thin- to thick-bedded, fine-grained sandstone. A thin coal is present near the middle of the formation. The Hooper coal occurs locally near the base of the formation. This grouped unit is the lateral equivalent of the Glenmary, Coalfield, and Burnt Mill formations, mapped where the Coalfield Sandstone is missing.</p>
			Glenmary Shale		60,120	
			Coalfield Sandstone		0-45	
		Crab Orchard Mountains Group	Burnt Mill Shale		60-85	<p>Pb</p> <p>Burnt Mill Shale Shale, sandy, silty, micaceous, olive- to dark-gray; and sandstone, light olive- to olive-gray, very fine-grained, thin-bedded; grades to olive-gray siltstone.</p>
			Hooper coal			<p>Pcr</p> <p>Crossville Sandstone Sandstone, quartzose, light- to yellowish-brown, light olive- and olive-gray to reddish-brown, very fine-grained to fine-grained, thin-bedded, slightly micaceous locally crossbedded, with a few zones of dark-gray to grayish-black shale. Thin coal seam near top of formation.</p>
			Crossville Sandstone		60,120	<p>Pd</p> <p>Dorton Shale Shale, sandy, silty, and slightly micaceous, medium- to dark-gray, with some yellowish-gray; and sandstone, very pale yellowish to yellowish-gray, very fine-grained, thin-bedded; grades to olive-gray siltstone. Coal seam at base.</p>
		Vanderburg, Newton, and Whitwell Formations	Rockcastle Conglomerate		up to 140	<p>Pr</p> <p>Rockcastle Sandstone Sandstone, quartzose, white, light olive- to olive-gray, fine- to coarse-grained, crossbedded, silty and micaceous, locally conglomeratic with rounded to subrounded quartz pebbles as much as 1/4 inch (6mm) long. There are two shale zones in the formation, each as much as 10 feet (3m) thick. These shales are commonly medium- to dark-gray, silty, discontinuous lenses that are present throughout the quadrangle, and are usually identifiable only in well cuttings or on geophysical logs.</p>
			Morgan Springs coal			<p>Pvw</p> <p>Vandever Formation, Newton Sandstone, and Whitwell Shale Undifferentiated Upper part is shale, silty and carbonaceous, light- to dark-gray, with lenses of sandstone, silty, micaceous, carbonaceous, gray, fine-grained, thin-bedded. Morgan Springs coal locally present near top. Middle part is lenticular sandstone, silty, micaceous, carbonaceous, light brown to light-gray.</p>
			Vandever Formation, Newton Sandstone, and Whitwell Shale Undifferentiated		180+	

Extracted from: ([Pilot Mountain Quadrangle](#)).

Quadrangle Location



Extracted from: ([Pilot Mountain Quadrangle](#)).

Map Legend

	Contact, dashed where approximate		
	Oil and gas well		Abandoned location
	Oil well		Dry hole (oil and gas show)
	Gas well		Dry hole (oil show)
	Oil well (gas show)		Dry hole (gas show)
	Gas well (oil show)		Dry hole
	Abandoned oil and gas well		Abandoned strip mine
	Abandoned oil well		Abandoned quarry
	Abandoned gas well	200	Map numbers refer to descriptions in Mineral Resources Summary.
	Abandoned oil well (gas show)	c	coal
		ss	sandstone

Extracted from: ([Pilot Mountain Quadrangle](#)).

Mineral Resources Summary

Mineral Resources Summary of the Pilot Mountain Quadrangle, Tennessee (MRS 122-NW)

by James L. Moore and Robert L. Powell

All mineral resources map numbers presented below correspond to a locality in the GRI digital geologic-GIS data, in the Mine Point Features (obedmin) feature class/data layer, with the same map number.

Report Text

Introduction

This summary accompanies the geologic map of the Pilot Mountain quadrangle, which is bounded by 36°07'30" and 36°15' N. Latitude and by 84°37'30" and 84°45' W. Longitude, an area in north central Morgan County. The major mineral resources in this quadrangle are oil and gas, and there are more than 278 wells at the present time. In the past, there has been some strip-mining of coal. Dimension sandstone quarries have been operated from time to time on a small scale. Shale is a potential resource. Field work on the mineral resources was completed in 1984. Oil and gas data are complete through May, 1984. Oil and gas tests, strip mines, and quarries have been located with reference to the Tennessee Coordinate System. The base point for this system (at the intersection of 86°00' W. Longitude and 34°40' N. Latitude near Scottsboro, Alabama) is assigned the values 2,000,000 feet east and 100,000 feet north. The coordinate location (in feet) of any point in Tennessee may be expressed with reference to its distance east-west and north of this base point. This system is shown in gray on the quadrangle map as a grid of 10,000-foot rectangles. All locations on this map may be measured from the reference coordinates shown along the margins of the quadrangle. Distances given in geographic descriptions represent direct linear measurements and not road mileages.

Oil and Gas

The first known oil and gas test in this quadrangle was drilled in 1917. Since then at least 277 additional wells have been drilled. Most of the drilling has been concentrated in the Sunbright, Coon Hollow, Little Clear Creek, Douglas Branch East, and Pilot Mountain fields. The principal producing oil wells are located northwest of Pilot Mountain where there are wells with as much as 150 BOPD (barrels of oil per day). Stratigraphic and statistical information for each of the wells is available at the Tennessee Division of Geology in Nashville.

Coal

The Hooper coal, near the base of the Burnt Mill Shale, is thin and discontinuous in this quadrangle, but was mined in two strip mines at [Map Numbers 279 and 280](#).

Dimension Sandstone

Five dimension sandstone quarries were found in this quadrangle. All are in the Crossville Sandstone, and all were abandoned when visited. These quarries are associated with [Map Numbers 281-285](#).

Selected References

Hollenbeck, R.P., and Tyrrell, M.E. (1968) *Shales for lightweight aggregate in Appalachian Region, Kentucky and Tennessee*: U.S. Bureau of Mines Report of Investigations 7129, 54 p.

Luther, E.T. (1959) *The coal reserves of Tennessee*: Tennessee Division of Geology Bulletin, no. 63, 294 p.

Milhous, H.C. (1959) *Well logs in Tennessee*: Tennessee Division of Geology Bulletin, no. 62.

Webb, G.W. (1958) *The sandstone industry of the Crossville-Crab Orchard District, Tennessee*: Tennessee Academy of Science Journal, v. 33, no. 1.

Map Numbers 1-4

MAP NUMBER-1

PERMIT NUMBER-3690

Keith Walker, HENRY, ET AL., No. 1

County: Morgan

Elevation: 1,398 feet

Carter Coordinates: 110 FNL, 1050 FEL, sec. 1, 4S-48E

Total Depth: 1,836 feet

Date: 1981

Tennessee Coordinates: 678,880N., 2,392,110E.

Production: Dry and abandoned

MAP NUMBER-2

PERMIT NUMBER-3562

R.B. Hamby, JONES ESTATE No. 1

County: Morgan

Elevation: 1,295 feet

Carter Coordinates: 1025 FNL, 1300 FEL, sec. 1, 4S-58E

Total Depth: 1,710 feet

Date: 1980

Tennessee Coordinates: 677,960N., 2,391,870E.

Production: Dry and abandoned

Remarks: Oil show.

MAP NUMBER-3

Young, et al., S.H. JONES No. 1

County: Morgan

Elevation: 1,370 feet

Carter Coordinates: 950 FNL, 450 FEL, sec. 1, 4S-58E

Total Depth: 1,725 feet

Date: 1917

Tennessee Coordinates: 678,050N., 2,392,720E.

Production: Gas (abandoned)

Remarks: Initial production of 150 MCF. Supplied Sunbright with some 10 to 30 MCF of gas per day for several years.

MAP NUMBER-4

PERMIT NUMBER-4464

Maynard Hamby, HARVIL DAVIS No. 1

County: Morgan

Elevation: 1,378 feet

Carter Coordinates: 1600 FNL, 2540 FEL, sec. 1, 4S-58E

Total Depth: 1,400 feet

Date: 1981

Tennessee Coordinates: 677,370N., 2,390,640E.

Production: Gas

Remarks: 39 MCF reported from 1,300-1,312 feet.

Map Numbers 5-8*MAP NUMBER-5*

PERMIT NUMBER-4806

Dick Hyde, D. FREELS, ET AL., No. 1

County: Morgan

Elevation: 1,357 feet

Carter Coordinates: 2940 FNL, 1990 FEL, sec. 1, 4S-58E

Total Depth: 1,505 feet

Date: 1982

Tennessee Coordinates: 676,040N., 2,391,200E.

Production: Gas

Remarks: 12.6 MCF reported from 1,300 to 1,315 feet. Electric log from surface to 1,505 feet.

MAP NUMBER-6

PERMIT NUMBER-5172

R.B. Hamby, METHODIST CHURCH, ET AL., No. 1

County: Morgan

Elevation: 1,365 feet

Carter Coordinates: 2900 FNL, 390 FEL, sec. 1, 4S-58E

Total Depth: 1,350 feet

Date: 1982

Tennessee Coordinates: 676,100N., 2,392,800E.

Production: Oil

Remarks: 2 BOPD reported from Monteagle from 1,270 to 1,300 feet. Electric log from 1,154 to 1,318 feet.

MAP NUMBER-7

Elton Botts, ART KENESKI No. 1

County: Morgan

Elevation: 1,465 feet

Carter Coordinates: 1825 FSL, 1850 FWL, sec. 1, 4S-58E

Total Depth: 1,500 feet

Date: 1966

Tennessee Coordinates: 674,720N., 2,390,150E.

Production: Dry and abandoned

Remarks: Gas as show at 1,156 feet. Sample Set No. 1508 (samples from 100-1,400)

'Available for study at Tennessee Division of Geology in Nashville.

MAP NUMBER-8

PERMIT NUMBER —3417

Bill Sebastian Soldner, HAROLD NITZSCHKE No. 1

County: Morgan

Elevation: 1,457 feet

Carter Coordinates: 1590 FSL, 2303 FWL, sec. 1, 4S-58E

Total Depth: 1,755 feet

Date: 1980

Tennessee Coordinates: 674,490N., 2,390,600E.

Production: Gas

Remarks: IP of 500 MCF from a 5-hour test,. Produces from the Monteagle from 1,452-1,470 feet.

Map Numbers 9-12*MAP NUMBER-9*

E.P. Jarvis, SUMMERS No. I

County: Morgan

Elevation: 1,350 feet

Carter Coordinates: 1150 FSL, 125 FWL, sec. 1, 4S-58E

Total Depth: 1,480 feet

Date: 1948

Tennessee Coordinates: 674,020N., 2,388,430E.

Production: Dry and abandoned

MAP NUMBER-10

PERMIT NUMBER-4895

Richard R. Rogers, HENRY HEIRS No. 2

County: Morgan

Elevation: 1,480 feet

Carter Coordinates: 100 FSL, 1950 FEL, sec. 1, 4S-58E

Total Depth: 1,868 feet

Date: 1982

Tennessee Coordinates: 673,010N., 2,391,290E.

Production: Gas

Remarks: 250 MCF reported on 24-hour test. Produces from the Monteagle from 1,400 . 1,420 feet. Electric log from 950-1,860 feet.

MAP NUMBER-11

PERMIT NUMBER-3842

Charlie Young, H.W.. JOE D., AND LARRY GALLOWAY No. I

County: Morgan

Elevation: 1,470 feet

Carter Coordinates: 2650 FNL, 1050 FWL, sec. 2, 4S-58E

Total Depth: 1,342 feet

Date: 1981

Tennessee Coordinates: 676,240N., 2,384,410E.

Production: Gas (Shut-in)

Remarks: IP of 8.3 MCF reported on 24-hour test. Produces from the Monteagle from 1,256-1,276 feet.. Electric log from surface to 1,342 feet.

MAP NUMBER-12

PERMIT NUMBER-3648

Clyde Fuller, JOE HAMBY-W.R . SUMMERS No. I

County: Morgan

Elevation: 1,435 feet

Carter Coordinates: 2900 FSL, 1150 FEL, sec. 2, 4S-58E

Total Depth: 1,755 feet

Date: 1980

Tennessee Coordinates: 675,760N., 2,387,130E.

Production: Gas (Shut-in)

Remarks: Electric log from 1,070-1,754 feet.

Map Numbers 13-16*MAP NUMBER-13*

Tenn.-Ohio Oil & Supply Co., H.K. JONES No. 1

County: Morgan

Elevation: 1,415 feet

Carter Coordinates: 2100 FSL, 2200 FWL, sec. 2, 4S-48E

Total Depth: 1,350 feet

Date: 1939

Tennessee Coordinates: 674,940N., 2,385,580E.

Production: Gas (Abandoned)

Remarks: Initial production estimated at 1,160 MCF. Sample Set No.

207 (samples from 280-1,350 feet).

Available for study from Tennessee Division of Geology in Nashville.

MAP NUMBER-14

Al Roskopf, et al., HUGH JONES No. 1

County: Morgan

Elevation: 1,500 feet

Carter Coordinates: 1800 FSL, 650 FWL, sec. 1, 4S-58E

Total Depth: 1,350 feet

Date: 1957

Tennessee Coordinates: 674,610N., 2,384,030E.

Production. Oil

Remarks: Oil pay at 1,276 ? feet. Oil show at 1,336 feet. Gas show at 1,137 and 1,194 feet. Sample Set No. 1060 (samples from 75-1,337 feet).

MAP NUMBER-15

PERMIT NUMBER-542

Ed Thomas, J.R. PERKINS No. 1

County: Morgan

Elevation: 1,466 feet

Carter Coordinates: 1600 FSL, 1600 FWL, sec. 2, 4S-58E

Total Depth: 1,318 feet

Date: 1973

Tennessee Coordinates: 674,430N., 2,384,990E.

Production: Oil (Abandoned)

Remarks: Produced 88 barrels of oil in Feb. 1975. Production interval 1,246-1,260 feet. Sample Set No. 2193 (samples from 186-1,238 feet).

MAP NUMBER-16

PERMIT NUMBER —445

James S. Collins, J.R. PERKINS No. 1

County: Morgan

Elevation: 1,466 feet

Carter Coordinates: 1500 FSL, 1625 FWL, sec. 2, 4S-58E

Total Depth: 1,304 feet

Date: 1972

Tennessee Coordinates: 674,330N., 2,385,010E.

Production. Dry and abandoned

Remarks: Gas show at 1,090 and 1,140 feet. Oil show at 1,240 feet. Sample Set No. 2195 (samples from 50-1,300 feet).

Map Numbers 17-20*MAP NUMBER-17*

White, et al., LUTHER TRIFFITH No. 1

County: Morgan

Elevation: 1,370 feet

Carter Coordinates: 1250 FSL, 650 FEL, sec. 2, 4S-58E

Total Depth: 2,400 feet

Date: 1925

Tennessee Coordinates: 674,110N., 2,387,660E.

Production: Gas (Abandoned)

Remarks: Gas pays at 1,000 and 1,231 feet. Oil shows at 1,152-1,156 feet.

MAP NUMBER-18

Russell Producing Co., MARKLEY HEIRS No. 1

County: Morgan

Elevation: 1,370 feet

Carter Coordinates: 1000 FSL, 1100 FEL, sec. 2, 4S-58E

Total Depth: 1,206 feet

Date: 1937

Tennessee Coordinates: 673,860N., 2,387,210E.

Production: Oil (Abandoned)

Remarks: Oil pay at 1,159-1,171 feet. Gas show at 1,018 feet. Sample Set No. 90 (samples from 518-1,209 feet).

MAP NUMBER-19

Ford & Lowery, JOHN R. LOWERY No. 1

County: Morgan

Elevation: 1,410 feet

Carter Coordinates: 125 FSL, 200 FEL, sec. 2, 4S-58E

Total Depth: 1,400 feet

Date: 1961?

Tennessee Coordinates: 672,990N., 2,388,120E.

Production: Dry and abandoned

Remarks: Gas show at 1,080 feet.

MAP NUMBER-20

Diverse Producing Co., RODDIE DAVIS No. 1

County: Morgan

Elevation: 1,440 feet

Carter Coordinates: 850 FNL, 1050 FWL, sec. 3, 4S-58E

Total Depth: 1,235 feet

Date: 1959

Tennessee Coordinates: 677,970N., 2,379,500E.

Production: Gas (Shut-in)

Remarks: Sample Set No. 1236 (samples from 30-1,235 feet).

Map Numbers 21-24*MAP NUMBER-21*

J.P. Yates, J.A. BRADFORD No. 1

County: Morgan

Elevation: 1,455 feet

Carter Coordinates: 1150 FNL, 2150 FWL, sec. 3, 4S-58E

Total Depth: 1.193 feet

Date: 1930

Tennessee Coordinates: 677,690N., 2,380,580E.

Production: Oil (Abandoned)

MAP NUMBER-22

PERMIT NUMBER-2486

Clyde Freels, CLYDE FREELS No. 2

County: Morgan

Elevation: 1,371 feet

Carter Coordinates: 1225 FNL, 425 FEL, sec. 3, 4S-58E

Total Depth: 1,583 feet

Date: 1979

Tennessee Coordinates: 677.640N., 2,382,920E.

Production: Oil and gas

Remarks.- Oil and gas pay at 1,244 . 1,260 feet in the Monteagle. Electric log from 910-1,578 feet.

MAP NUMBER-23

Stepp & Smith, McCORMICK No. 1

County: Morgan

Elevation. - 1,510 feet

Carter Coordinates: 1500 FNL, 1050 FWL, sec. 3, 4S-58E

Total Depth: 900+ feet

Date: 1930

Tennessee Coordinates: 677,320N., 2,379,480E.

Production: Dry and abandoned

MAP NUMBER-24

Rock Creek Oil Co., C.H. WELLS No. 1

County: Morgan

Elevation: 1,380 feet

Carter Coordinates: 1475 FNL, 1575 FEL, sec. 3, 4S-58E

Total Depth: 1,214 feet

Date: 1929

Tennessee Coordinates: 677,380N., 2,381,770E.

Production: Dry and abandoned

Remarks: Oil show at unrecorded depth.

Map Numbers 25-28*MAP NUMBER-25*

Rock Creek Oil Co., J.A. BRADFORD No. 1

County: Morgan

Elevation: 1,385 feet

Carter Coordinates: 1600 FNL, 2200 FEL, sec. 3, 4S-58E

Total Depth: 1,373 feet

Date: 1929

Tennessee Coordinates: 677,240N., 2,381,150E.

Production: Oil

Remarks: Initial production of 15-20 BOPD. Sample Set No. 24 (samples) from 955-1,285 feet). Sample description from 955 - 1,290 feet.

MAP NUMBER-26

Russell Producing Co., J.A. BRADFORD No. 1

County: Morgan

Elevation: 1,397 feet

Carter Coordinates: 1700 FNL, 1700 FEL, sec. 3, 4S-58E

Total Depth: 1,180 feet

Date: 1935

Tennessee Coordinates: 677,150N., 2,381,650E.

Production: Oil

Remarks: Initial production 10 BOPD. Reported to be still producing in 1966.

MAP NUMBER-27

Kashmier Oil Inc., BODDIE DAVIS No. 1

County: Morgan

Elevation: 1,450 feet

Carter Coordinates: 1800 FNL, 250 FEL, sec. 3, 4S-58E

Total Depth: 1,401 feet

Date: 1967

Tennessee Coordinates: 677,010N., 2,378,690E.

Production: Dry and abandoned

MAP NUMBER-28

Tenn.-Ohio Oil & Supply Co., W.H. GALLOWAY No. 1

County: Morgan

Elevation: 1,350 feet

Carter Coordinates: 2050 FNL, 100 FEL, sec. 3, 4S-58E

Total Depth: 1,537 feet

Date: 1940

Tennessee Coordinates: 676,820N., 2,383,250E.

Production: Dry and abandoned

Remarks: Sample Set No. 243 (samples from 975-1,538 feet). Small oil show at 1,100-1,123 feet. Gas show at 945 feet.

Map Numbers 29-32*MAP NUMBER-29*

Al Roskopf, et al., HUGH JONES No. 2

County: Morgan

Elevation: 1,520 feet

Carter Coordinates: 1100 FSL, 75 FEL, sec. 3, 4S-58E

Total Depth: 1,310 feet

Date: 1957

Tennessee Coordinates: 673,910N., 2,383,320E.

Production: Gas

Remarks: Gas pay at 1,175 feet. Sample Set No. 1077 (samples from 144-1,310 feet).

MAP NUMBER-30

Al Roskopf, HUGH JONES No. 3

County: Morgan

Elevation: 1,520 feet

Carter Coordinates: 250 FSL, 800 FEL, sec. 3, 4S-58E

Total Depth: 1,300 feet

Date: 1957

Tennessee Coordinates: 673,050N., 2,382,600E.

Production: Dry and abandoned

Remarks: Small oil show at 1,235-1,238 feet.

MAP NUMBER-31

PERMIT NUMBER-9767

Kimberly Oil & Gas Co., CHILCOAT & GYRD No. 1

County: Morgan

Elevation: 1,437 feet

Carter Coordinates: 125 FNL, 1925 FEL, sec. 4, 4S-58E

Total Depth: 1,491 feet

Date: 1981

Tennessee Coordinates: 678,660N., 2,376,490E.

Production: Gas (shut-in)

Remarks: Being used for domestic use. Electric log from surface to 1,485 feet.

MAP NUMBER-32

PERMIT NUMBER-9773

Kimberly Oil & Gas Co., MARTHA BYRD No. 1

County: Morgan

Elevation: 1,439 feet

Carter Coordinates: 180 FNL, 645 FEL, sec. 4, 4S -58E

Total Depth: 1,573 feet

Date: 1982

Tennessee Coordinates: 678,620N., 2,377,770E.

Production: Gas (Shut-in)

Remarks: Being used for domestic heating. Electric log from 946.1,569 feet.

Map Numbers 33-36*MAP NUMBER-33*

PERMIT NUMBER-6472

Dick Hyde, HAROLD SEXTON No. 1

County: Morgan*Elevation:* 1,440 feet*Carter Coordinates:* 830 FNL, 1340 FWL, sec. 4, 4S-58E*Total Depth:* 1,600 feet*Date:* 1983*Tennessee Coordinates:* 677,930N., 2,374,850E.*Production:* Dry and abandoned*Remarks:* Results not reported.*MAP NUMBER-34*

PERMIT NUMBER-6599

Dick Hyde, HAROLD SEXTON No. 2

County: Morgan*Elevation:* 1,398 feet*Carter Coordinates:* 1220 FNL, 2210 FWL, sec. 4, 4S-58E*Total Depth:* 1,700 feet*Date:* 1983*Tennessee Coordinates:* 677,550N., 2,375,720E.*Production:* Dry and abandoned*Remarks:* Results not reported.*MAP NUMBER-35*

PERMIT NUMBER —6290

Dick Hyde, ENGLAND-SEXTON, EI' AL., No. 1

County: Morgan*Elevation:* 1,401 feet*Carter Coordinates:* 1760 FNL, 1225 FWL, sec. 4, 4S-58E*Total Depth:* 1,255 feet*Date:* 1983*Tennessee Coordinates:* 677,000N., 2,374,750E.*Production:* Oil and gas*Remarks:* IP of 4 BOPD and 30 MCFGD. Oil and gas pays at 1,188-1,200 feet.*MAP NUMBER-36*

PERMIT NUMBER-3716

Kimberly Oil & Gas Co., BERTHA ENGLAND No. 1

County: Morgan*Elevation:* 1,371 feet*Carter Coordinates:* 2660 FNL, 1310 FWL, sec. 4, 4S-58E*Total Depth:* 1,260 feet*Date:* 1980*Tennessee Coordinates:* 676,100N., 2,374,890E.*Production:* Oil*Remarks:* IP of 1 BOPD. Completion interval of 1,210-1,215 feet.

Map Numbers 37-40*MAP NUMBER-37*

PERMIT NUMBER-4272

B W Oil Co., IVAJEAN HAROULAKIS NO. 1

County: Morgan*Elevation:* 1,384 feet*Carter Coordinates:* 2030 FSL, 2000 FWL, sec. 4, 4S-58E*Total Depth:* 1,550 feet*Date:* 1981*Tennessee Coordinates:* 674,730N., 2,375,550E.*Production:* Dry and abandoned*Remarks:* Sample study from 920-1,550 feet.*MAP NUMBER-38*

PERMIT NUMBER-1021

Tartan Oil Co., E.D. SIMPSON No. 1

County: Morgan*Elevation:* 1,458 feet*Carter Coordinates:* 900 FSL, 1200 FWL, sec. 4, 4S-58E*Total Depth:* 1,588 feet*Date:* 1975*Tennessee Coordinates:* 673,590N., 2,374,770E.*Production:* Dry and abandoned*Remarks:* Electric log from 100-1,587 feet.*MAP NUMBER-39*

PERMIT NUMBER —3699

Clyde Fuller, BROWN-DARNELL No. 1

County: Morgan*Elevation:* 1,584 feet*Carter Coordinates:* 275 FNL, 2275 FWL, sec. 5, 4S-58E*Total Depth:* 1,690 feet*Date:* 1980*Tennessee Coordinates:* 678,440N., 2,370,860E.*Production:* Gas (Shut-in)*Remarks:* Gas pay from 1,321-1,332 feet. Electric log from 1,000-1,684 feet.*MAP NUMBER-40*

PERMIT NUMBER —2707

Gaspro, Inc., G.C. PEMBERTON No. G-2

County: Morgan*Elevation:* 1,441 feet*Carter Coordinates:* 1600 FNL, 2290 FWL, sec. 5, 9S-58E*Total Depth:* 1,622 feet*Date:* 1980*Tennessee Coordinates:* 677,110N., 2,370,860E.*Production:* Dry and abandoned*Remarks:* Electric log from 870-1,620 feet.

Map Numbers 41-44*MAP NUMBER-41*

PERMIT NUMBER-791

Larry Portaro & Great Western Oil & Gas Co., OVERTON-OLMSTEAD No. 1

County: Morgan*Elevation:* 1,498 feet*Carter Coordinates:* 300 FSL, 330 FWL, sec. 5, 4S-58E*Total Depth:* 1,585 feet*Date:* 1974*Tennessee Coordinates:* 672,920N., 2,368,960E.*Production:* Dry and abandoned*Remarks:* Electric log from 750-1,577 feet.*MAP NUMBER-42*

Johnson-Messer Oil Co., LYNCH No. 1

County: Morgan*Elevation:* 1,412 feet*Carter Coordinates:* 550 FNL, 2250 FWL, sec- 6, 4S-58E*Total Depth:* ? feet*Date:* 1930*Tennessee Coordinates:* 672,090N., 2,370,920E *Production:*

Dry and abandoned

MAP NUMBER-43

PERMIT NUMBER-728

Strahan Oil & Gas Co., Inc., CHARLEY COOPER No. 1

County: Morgan*Elevation:* 1,625 feet*Carter Coordinates:* 900 FSL, 100 FEL, sec. 6. 4S-58E*Total Depth:* 1,414 feet*Date:* 1975*Tennessee Coordinates:* 667,450N., 2,368,830E.*Production:* Oil*Remarks:* IP of 20 BOPD (6 hour test). Changed operator to Cumberland Oil Producing Co. Inc. on 3/9/77 . Sample Set No. 2229 (samples from 1,030-1,400 feet).*MAP NUMBER-44*

Johnson-Messer Oil Co., H-W- SUMNERS No- 2

County: Morgan*Elevation:* 1,460 feet*Curter Coordinates:* 2000 FNL, 1100 FEL, sec. 7, 4S-58E*Total Depth:* ? feet*Date:* 1930*Tennessee Coordinates:* 670,730N., 2,377,420E.*Production:* Dry and abandoned

Map Numbers 45-48*MAP NUMBER-45*

Benedum-Trees Oil Co., H.R. STUMP No. 3

County: Morgan

Elevation: 1,520 feet

Carter Coordinates: 1375 FNL, 400 FEL, sec- 8, 4S-58E

Total Depth: 1,828 feet

Date: 1929

Tennessee Coordinates: 671,430N., 2,383.030E.

Production: Gas

Remarks: Reported production of 150 MCFMAP

NUMBER-46

Benedum-Trees Oil Co., H.R. STUMP No. 2

County: Morgan

Elevation: 1,540 feet

Carter Coordinates: 2275 FNL, 1475 FEL, sec. 8, 4S-58E

Total Depth: 1,673 feet

Date: 1929

Tennessee Coordinates: 670,510N., 2,381.960E.

Production: Gas

Remarks: Gas pays at 1,120-1,122, 1,285-1,287, and 1,315-1,318 feet. IP of 500 MCF reported.

MAP NUMBER-47

Benedum-Trees Oil Co., H-R. STUMP No. 1

County: Morgan

Elevation: 1,495 feet

Carter Coordinates: 2500 FNL, 500 FEL, sec- 8, 4S-58E

Total Depth: 1,317 feet

Date: 1929

Tennessee Coordinates: 670,300N., 2,382,940E

Production: Gas

Remarks: Gas pays at 1,085-1,088, 1,116.5, and 1,297 feet. IP of 150 MCF reported.

*MAP NUMBER-48**PERMIT NUMBER-727*

Cumberland Resources Corp., HARRIS & SPEER No. 1

County: Morgan

Elevation: 1,594 feet

Carter Coordinates: 2000 FSL, 600 FEL, sec- 8, 4S-58E

Total Depth: 1,500 feet

Date: 1974

Tennessee Coordinates: 668,730N., 2,382,860E.

Production: Dry and abandoned

Remarks: Sample Set No. 1935 (samples from 250-1,500 feet).

Map Numbers 49-52*MAP NUMBER-49*

PERMIT NUMBER-309

Ed Thomas, C-G. HARRIS No. 1

County: Morgan*Elevation:* 1,596 feet*Carter Coordinates:* 1040 FSL, 1010 FEL, sec. 8, 4S-58E*Total Depth:* 1,481 feet*Date:* 1972*Tennessee Coordinates:* 667,770N., 2,382,460E.*Production:* Dry and abandoned*Remarks:* Sample Set No. 1838 (samples from 590-1,470 feet).*MAP NUMBER-50*

Johnson-Messer Oil Co., H.W. SUMMERS No. 1

County: Morgan*Elevation:* 1,590 feet*Carter Coordinates:* 900 FSL, 1800 FEL, sec. 8, 4S-58E*Total Depth:* 1,786 feet*Date:* 1926*Tennessee Coordinates:* 667,620N., 2,381.680E.*Production:* Gas*Remarks:* IP of 3,400 MCF reported. Gas pays at 1,288-1,292 and 1,320-1,342. Gas show at 1,180. Oil show at 1,451-1,456 feet (1 BOPD)*MAP NUMBER-51*

Benedum-Trees Oil Co., HENDREN HEIRS No. 1

County: Morgan*Elevation:* 1,590 feet*Carter Coordinates:* 600 FSL, 475 FEL, sec. 8, 4S-58E*Total Depth:* 1,490 feet*Date:* 1931*Tennessee Coordinates:* 667,330N., 2,383,000E.*Production:* Gas*Remarks:* Gas pays at 1,169, 1,187, 1,373-1,378, and 1,464-1,465 feet.*MAP NUMBER-52* ([Well log for Map Number 52](#))

PERMIT NUMBER —1294

Universal Land & Mineral Leasing, WILLIAM SUMMER No. 2

County: Morgan*Elevation:* 1,384 feet*Carter Coordinates:* 50 FNL, 1300 FWL, sec. 9, 4S-58E*Total Depth:* 1,391 feet*Date:* 1976*Tennessee Coordinates:* 672,770N., 2,384,710E.*Production:* Gas (Shut-in)*Remarks:* IP of 1982 MCF reported. Sample Set No. 2190 (samples from 20-1,385 feet).

Map Numbers 53-56*MAP NUMBER-53*

PERMIT NUMBER-797

Patrick Petroleum Corp., WILLIAM J- SUMMERS No. 1

County: Morgan*Elevation:* 1,447 feet*Carter Coordinates:* 1100 FNL, 2300 FEL, sec. 9, 4S-58E*Total Depth:* 1,302 feet*Date:* 1975*Tennessee Coordinates:* 671,740N., 2,386,040E.*Production:* Gas*MAP NUMBER-54*

PERMIT NUMBER-4061

Sunbright Oil & Gas, Inc., BISHOP-PAYNE No. 1

County: Morgan*Elevation:* 1,426 feet*Carter Coordinates:* 1500 FNL, 12 FWL, sec- 9, 9S-58E*Total Depth:* 1,405 feet*Date:* 1981*Tennessee Coordinates:* 671,320N., 2,384,630E.*Production:* Gas (Shut-in)*Remarks:* Electric log from 800-1,398 feet.*MAP NUMBER-55*

PERMIT NUMBER-1292

Universal Land & Mineral Leasing, DAVID SUMMER No. 1

County: Morgan*Elevation:* 1,406 feet*Carter Coordinates:* 2650 FNL, 1450 FEL, sec. 9, 4S-58E*Total Depth:* 1,680 feet*Date:* 1976*Tennessee Coordinates:* 670,200N., 2,386,910E.*Production:* Gas (Shut-in)*Remarks:* Tested for 15 hours at 369 MCP. Sample Set No. 2071 (samples from 30-1,678 feet).*MAP NUMBER-56*

PERMIT NUMBER-1652

Universal Land & Mineral Leasing, DAVID SUMMER No- 2

County: Morgan*Elevation:* 1,961 feet*Carter Coordinates:* 3100 FNL, 2100 FWL, sec- 9, 4S-58E*Total Depth:* 1,610 feet*Date:* 1978*Tennessee Coordinates:* 669,730N., 2,385,550E.*Production:* Gas (Shut-in)*Remarks:* Gas pay at 1,230-1,255 feet.

Map Numbers 57-60*MAP NUMBER-57*

PERMIT NUMBER-1927

Universal Land & Mineral Leasing, DAVID SUMMER No. 3

County: Morgan

Elevation: 1,510 feet*Carter Coordinates:* 2350 FSL, 1000 FWL, sec. 9, 4S-58E*Total Depth:* 1,500 feet*Date:* 1978*Tennessee Coordinates:* 669,100N., 2,384,460E*Production:* Gas (Shut-in)*Remarks:* Gas pays at 1,250-1,254 and 1,402-1,420 feet. Electric log from 1,200-1,487 feet.*MAP NUMBER-58*

PERMIT NUMBER-1926

Universal Land & Mineral Leasing, REX ANDES, ET AL., No. 1

County: Morgan

Elevation 1,450 feet*Carter Coordinates:* 2250 FNL, 550 FEL, sec. 9, 4S-58E*Total Depth:* 1,690 feet*Date:* 1972*Tennessee Coordinates:* 669,050N., 2,387,820E.*Production:* Gas (Shut-in)*Remarks:* No production amounts reported.*MAP NUMBER-59*

PERMIT NUMBER-1924

Universal Land & Mineral Leasing, DAVID SUMMER No. I-A

County: Morgan

Elevation: 1,505 feet*Carter Coordinates:* 1300 FSL, 1750 FWL, sec. 9, 4S-58E*Total Depth:* ? feet*Date:* 1978*Tennessee Coordinates:* 668,060N., 2,385,220E.*Production:* Dry and abandoned*Remarks:* Results not reported.*MAP NUMBER-60*

PERMIT NUMBER-5802

Richard R. Rogers, HENDREN HEIRS No. 1

County: Morgan

Elevation: 1,599 feet*Carter Coordinates:* 590 FSL, 150 FWL, sec. 9, 4S-58E*Total Depth:* 1,720 feet*Date:* 1983*Tennessee Coordinates:* 667,330N., 2,383,630E.*Production:* Gas*Remarks:* IP of 260 MCF reported on 24-hour test. Gas pay at 1,470-1,490 feet. Electric log from 1,078-1,733 feet.

Map Numbers 61-64*MAP NUMBER-61*

PERMIT NUMBER-5897

Richard R. Rogers, KURT SCHAAR UNIT No. 1

County: Morgan*Elevation:* 1,538 feet*Carter Coordinates:* 400 FSL, 2010 FEL, sec. 19 4S-58E*Total Depth:* 1,825 feet*Date:* 1983*Tennessee Coordinates:* 667,180N., 2,386,390E.*Production:* Gas*Remarks:* Gas pay from 1,292-1,296 feet. Gas show from 1,725-1,750 feet.*MAP NUMBER-62*

PERMIT NUMBER -5978

Richard R. Rogers, Y.T. JOHNSON UNIT No. 1

County: Morgan*Elevation:* 1,560 feet*Carter Coordinates:* 900 FNL, 1615 FEL, sec. 10, 4S-58E*Total Depth:* 1,883 feet*Date:* 1983*Tennessee Coordinates:* 672,020N., 2,391,630E.*Production:* Gas*Remarks:* 48.7 MCF reported from Monteagle pay at 1,405-1,426 feet.

Electric log from 1,151-1,881 feet.

MAP NUMBER-63

PERMIT NUMBER-5946

Richard R. Rogers, BILLY G- GARRETT UNIT No. 1

County: Morgan*Elevation:* 1,461 feet*Carter Coordinates:* 1545 FNL, 1985 FWL, sec. 10, 4S-58E*Total Depth:* 1,840 feet*Date:* 1981*Tennessee Coordinates:* 671,350N., 2,390,330E.*Production:* Gas*Remarks:* IP of 220 MCF reported on 24-hour test from Monteagle at

1,365-1,390 feet. Electric log from 1,064-1,835 feet.

MAP NUMBER-64

PERMIT NUMBER-6098

Richard R. Rogers, REX ANDES No. 2

County: Morgan*Elevation:* 1,440 feet*Carter Coordinates:* 1925 FNL, 775 FWL, sec. 10, 4S-58E*Total Depth:* 1,480 feet*Date:* 1983*Tennessee Coordinates:* 670,960N., 2,389,120E.*Production:* Dry and abandoned*Remarks:* Electric log from 1,098-1,477 feet.

Map Numbers 65-68*MAP NUMBER-65*

PERMIT NUMBER —4654

Richard R. Rogers, BILLY G. GARRETT No. 3

County: Morgan*Elevation:* 1,426 feet*Carter Coordinates:* 1790 FNL, 1445 FEL, sec. 10, 4S-58E*Total Depth:* 1,885 feet*Date:* 1981*Tennessee Coordinates:* 671,130N., 2,391,820E.*Production:* Gas*Remarks:* IP of 78-6 reported on 24-hour test from Monteagle at 1,348-1,372 feet. Oil show at 1,350-1,360 feet. Electric log from 850-1,877 feet.*MAP NUMBER-66*

PERMIT NUMBER-5709

Richard IL Rogers, BILLY G. GARRETT, No. 4A

County: Morgan*Elevation:* 1,518 feet*Carter Coordinates:* 2750 FNL, 2200 FEL, sec. 10, 4S-58E*Total Depth:* 2,788 feet*Date:* 1982*Tennessee Coordinates:* 670,160N., 2,391,070E.*Production:* Gas*Remarks:* IP of 120 MCF reported from Monteagle at 1,380-1,410 feet. Electric log from 1,111-2,786 feet.*MAP NUMBER-67*

PERMIT NUMBER-5947

Richard R. Rogers, BILLY G. GARRETT No. 4

County: Morgan*Elevation:* 1,648 feet*Carter Coordinates:* 1300 FSL, 2050 FWL, sec. 10, 4S-58E*Total Depth:* 1,990 feet*Date:* 1983*Tennessee Coordinates:* 668,130N., 2,390,440E.*Production:* Gas*Remarks:* IP of 56.3 reported from Monteagle at 1,520-1,540 feet. Gas show at 1,880-1,890 feet. Electric log from 1,110-1,993 feet.*MAP NUMBER-68*

PERMIT NUMBER-3640

R.B. Hamby, BILLY GARRETT No. 2

County: Morgan*Elevation:* 1,557 feet*Carter Coordinates:* 380 FSL, 805 FWL, sec. 10, 4S-58E*Total Depth:* 2,757 feet*Date:* 1981*Tennessee Coordinates:* 667,200N., 2,389,200E.*Production:* Gas (Shut-in)*Remarks:* Electric log from 1,120-2,753 feet.

Map Numbers 69-72*MAP NUMBER-69*

PERMIT NUMBER —176

J-B. Stephens, Jr. & B.R- Cullen, HUGH D. FAUSE, JR. No. 1

County: Morgan*Elevation:* 1,557 feet*Carter Coordinates:* 2700 FSL, 2100 FEL, sec. 12, 4S-58E*Total Depth:* 1,916 feet*Date:* 1971*Tennessee Coordinates:* 663,910N., 2,386,350E.*Production:* Dry and abandoned*Remarks:* Oil show at 1,380-1,390 feet.*MAP NUMBER-70*

PERMIT NUMBER-2396

Tartan Oil Co., ROBERT D. PARTEN No. 1

County: Morgan*Elevation:* 1,440 feet*Carter Coordinates:* 400 FSL, 625 FWL, sec. 12, 4S-58E*Total Depth:* 1,670 feet*Date:* 1979*Tennessee Coordinates:* 661,080N., 2,384,190E.*Production:* Gas*Remarks:* IP of 150 MCF reported from the Monteagle at 1,250-1,252, 1,257-1,262, and 1,318-1,331 feet. Electric log from 700-1,670 feet.*MAP NUMBER-71*

Benedum-Trees Oil Co., E.W. SEDMAN No. 1

County: Morgan*Elevation:* 1,605 feet*Carter Coordinates:* 25 FNL, 2100 FEL, sec. 13, 4S-58E*Total Depth:* 1,502 feet*Date:* 1930*Tennessee Coordinates:* 666,690N., 2,381,390E.*Production:* Gas*Remarks:* IP of 540 MCF reported from pays at 1,185-1,188, 1,376-1,381, and 1,481-1,483 feet. Driller's log from 0-1,502 feet.*MAP NUMBER-72*

Johnson-Messer Oil Co., GILREATH No. 1

County: Morgan*Elevation:* 1,580 feet*Carter Coordinates:* 75 FNL, 1400 FEL, sec. 13, 4S-58E*Total Depth:* 2,800 feet*Date:* 1926*Tennessee Coordinates:* 666,650N., 2,382,090E.*Production:* Gas*Remarks:* IP of 3000 MCF reported from 1,472 feet. Sample Set No. 8 (samples from 165-2,680 feet). Driller's log from 0-2,800 feet.

Map Numbers 73-76*MAP NUMBER-73*

Benedum-Trees Oil Co-, E.W. SEDMAN No. 2

County: Morgan

Elevation: 1,495 feet

Carter Coordinates: 1075 FNL, 2300 FWL, sec. 13, 4S-58E

Total Depth: 1,717 feet

Date: 1930

Tennessee Coordinates: 665,630N., 2,380,890E.

Production: Dry and abandoned

Remarks: Oil and gas shows from 1,251-1,395 feet. Driller's log from 0-1,717 feet.

MAP NUMBER-74

PERMIT NUMBER-1083

Universal Land & Mineral Leasing Co., BARBARA & FRANKLIN
STRINGFIELD No. 1

County: Morgan

Elevation: 1,581 feet

Carter Coordinates: 1300 FNL, 1075 FWL, sec. 13, 4S-58E

Total Depth: 1,860 feet

Date: 1975

Tennessee Coordinates: 665,430N., 2,382,430E.

Production: Gas (Shut-in)

Remarks: IP of 80 MCF reported from Monteagle at 1,224-1,230, and 1,380-1,394 feet. Electric log from 800-1,840 feet.

MAP NUMBER-75

Benedum-Trees Oil Co., F.S. ANDERSON No. 1

County: Morgan

Elevation: 1,610 feet

Carter Coordinates: 2550 FNL, 1300 FEL, sec. 13, 4S-58E

Total Depth: 1,536 feet

Date: 1930

Tennessee Coordinates: 664.170N., 2,382,220E.

Production: Gas

Remarks: IP of 300 MCF reported from pays at 1,219-1,220 and 1,393-1,410 feet. Driller's log from 0-1,536 feet.

MAP NUMBER-76

PERMIT NUMBER —1721

Tartan Oil Co., S.A. ANDERSON No. 1

County: Morgan

Elevation: 1,575 feet

Carter Coordinates: 2000 FSL, 2300 FEL, sec. 13, 4S-58E

Total Depth: 1,785 feet

Date: 1978

Tennessee Coordinates: 662,640N., 2,381,240E.

Production: Gas (Shut-in)

Remarks: IP of 25 MCF reported from 48-hour test. Production from the Monteagle at 1,340-1,353 feet. Sample Set No. 2129 (samples from 100-1,780 feet).

Map Numbers 77-80*MAP NUMBER-77*

PERMIT NUMBER —1596

Tartan Oil Co., LANGFORD-HARTIN UNIT No. 1

County: Morgan

Elevation: 1,510 feet*Carter Coordinates:* 700 FSL, 800 FEL, sec. 13, 4S-58E*Total Depth:* 1,955 feet*Date:* 1978*Tennessee Coordinates:* 661,360N., 2,382,760E.*Production:* Gas (Shut-in)*Remarks:* IP of 400 MCF reported from 48-hour test from Monteagle at 1,318-1,340 and 1,384-1,400 feet. Sample Set No. 2097 (samples from 300-1,950 feet).*MAP NUMBER-78*

PERMIT NUMBER —4158

Tartan Oil Co., JAMES SILVEY No. 1-A

County: Morgan

Elevation: 1,500 feet*Carter Coordinates:* 575 FNL, 850 FEL, sec. 14, 4S-58E*Total Depth:* 1,663 feet*Date:* 1981*Tennessee Coordinates:* 666,090N., 2,377,730E.*Production:* Gas*Remarks:* IP of 25 MCF reported from 24-hour test from Monteagle at 1,256-1,266 feet. Electric log from 850-1,662 feet.*MAP NUMBER-79*

Benedum-Trees Oil Co., HALL & DAVIS No. 1

County: Morgan

Elevation: 1,535 feet*Carter Coordinates:* 2750 FNL, 500 FEL, sec. 14, 4S-58E*Total Depth:* 1,695 feet*Date:* 1930*Tennessee Coordinates:* 663,920N., 2,378,110E.*Production:* Gas*Remarks:* IP of 530 MCF reported from the Monteagle at 1,260 feet. Driller's log from 466-1,695 feet.*MAP NUMBER-80*

Mack Petroleum Co., W.A. WATSON No. 1

County: Morgan

Elevation: 1,520 feet*Carter Coordinates:* 2850 FSL, 550 FEL, sec. 14, 4S-58E*Total Depth:* 500 feet*Date:* 1964*Tennessee Coordinates:* 663,450N., 2,378,060E.*Production:* Dry and abandoned

Map Numbers 81-84

MAP NUMBER-81 ([Well log for Map Number 81](#))

PERMIT NUMBER-520

Tartan Oil Co., MRS. CLIFFORD JONES No. 1

County: Morgan

Elevation: 1,525 feet

Carter Coordinates: 2450 FSL, 2250 FWL, sec. 14, 4S-58E

Total Depth: 1,669 feet

Date: 1973

Tennessee Coordinates: 663,020N., 2,375,950E.

Production: Dry and abandoned

Remarks: Sample Set No. 1847 (samples from 0-1,669 feet). Electric log from 900-1,667 feet.

MAP NUMBER-82

PERMIT NUMBER-544

Tartan Oil Co., A.E. SEBBY No. 1

County: Morgan

Elevation: 1,544 feet

Carter Coordinates: 2300 FSL, 10 FWL, sec. 14, 4S-58E

Total Depth: 1,435 feet

Date: 1973

Tennessee Coordinates: 662,840N., 2,373,710E.

Production: Gas (Shut-in)

Remarks: IP of 133 MCF from Monteagle at 1,278-1,288 feet. Electric log from 950-1,434 feet.

MAP NUMBER-83

PERMIT NUMBER-1925

Universal Land & Mineral Leasing Co., W.E. MONDAY ESTATE No. 1

County: Morgan

Elevation: 1,536 feet

Carter Coordinates: 1950 FNL, 1700 FEL, sec. 15, 4S-58E

Total Depth: 1,700 feet

Date: 1978

Tennessee Coordinates: 664,640N., 2,371,980E.

Production: Gas (Shut-in)

Remarks: Show of oil and gas at 1,238-1,248 feet. Show of gas at 1,350-1,356 feet. Show of oil at 1,418-1,420 feet.

MAP NUMBER-84

PERMIT NUMBER-993

Ace Petroleum Co. Inc., BALES-SEBBY-BALES No. 1

County: Morgan

Elevation: 1,562 feet

Carter Coordinates: 1175 FSL, 1150 FEL, sec. 15, 4S-58E

Total Depth: 1,753 feet

Date: 1975

Tennessee Coordinates: 661,700N., 2,372,570E.

Production: Gas (Shut-in)

Remarks: IP of 91.6 MCF reported from a 24-hour test from 1,220-1,226 and 1,260-1,272 feet. Electric log from 750-1,752 feet.

Map Numbers 85-88*MAP NUMBER-85*

PERMIT NUMBER-1676

Deloy Miller, W. BRANSTETTER-C. BOWMAR No. 1

County: Morgan*Elevation:* 1,579 feet*Carter Coordinates:* 50 FSL, 1700 FWL, sec. 15, 4S-58E*Total Depth:* 1,676 feet*Date:* 1978*Tennessee Coordinates:* 660,550N., 2,370,520E.*Production:* Gas (Shut-in)*Remarks:* IP of 200 MCF from 24-hour test. Pay from the Monteagle at 1,384-1,392 feet. Electric log from 0-1,453 feet.*MAP NUMBER-86*

East Tenn. Oil & Gas Co., MILLER HEIRS No. 1

County: Morgan*Elevation:* 1,585 feet*Carter Coordinates:* 1350 FNL, 1850 FWL, sec. 16, 9S-58E*Total Depth:* ? feet*Date:* ?*Tennessee Coordinates:* 655,310N., 2,372,750E.*Production:* Dry and abandoned*MAP NUMBER-87*

PERMIT NUMBER-2220

Deloy Miller, HARNEY-SCOTT UNIT No. 1

County: Morgan*Elevation:* 1,582 feet*Carter Coordinates:* 2050 FNL, 1555 FEL, sec. 16, 4S-58E*Total Depth:* 2,728 feet*Date:* 1979*Tennessee Coordinates:* 656,510N., 2,372,240E.*Production:* Gas (Shut-in)*Remarks:* IP of 20 MCF estimated. Pay from the Monteagle at 1,336-1,350 feet. Sample Set No. 2189 (samples from 0-2,730 feet).*MAP NUMBER-88*

PERMIT NUMBER-3983

Leland Petroleum Products Inc., JAMES DEAN No. 1

County: Morgan*Elevation:* 1,565 feet*Carter Coordinates:* 110 FNL, 2306 FWL, sec. 17, 4S-58E*Total Depth:* 1,800 feet*Date:* 1981*Tennessee Coordinates:* 660,460N., 2,376,030E.*Production:* Gas (Shut-in)*Remarks:* IP of 150 MCF reported from 24-hour test. Electric log from 0-1,806 feet.

Map Numbers 89-92*MAP NUMBER-89*

PERMIT NUMBER-5623

Dick Hyde, MAE SCOTT. WINFIELD KELLEY, ET AL., No. 1

County: Morgan*Elevation:* 1,468 feet*Carter Coordinates:* 1800 FNL, 120 FWL, sec. 17, 4S-58E*Total Depth:* 1,670 feet*Date:* 1982*Tennessee Coordinates:* 658,750N., 2,373,880E.*Production:* Gas*Remarks:* IP of 55 MCF reported from 24-hour test. Pay from the Monteagle at 1,305-1,330 feet. Oil shows at 1,130-1,155 and 1,230-1,255 feet.*MAP NUMBER-90*

PERMIT NUMBER-3982

Leland Petroleum Products Inc., ELIZABETH DEAN No. 1

County: Morgan*Elevation:* 1,560 feet*Carter Coordinates:* 2300 DWI, 820 FEL, sec. 17, 4S-58E*Total Depth:* 1,823 feet*Date:* 1981*Tennessee Coordinates:* 658,300N., 2,377,860E.*Production:* Gas (Shut-in)*Remarks:* IP of 150 MCF reported from 24-hour test. Pay from the Monteagle at 1,320-1,338 feet. Electric log from 0-1,822 feet.*MAP NUMBER-91*

PERMIT NUMBER-1841

Tartan Oil Co., JOE UNDERWOOD, ET AL., UNIT No. 1

County: Morgan*Elevation:* 1,435 feet*Carter Coordinates:* 2550 FNL, 1950 FWL, sec. 18, 4S-58E*Tennessee Coordinates:* 658,080N., 2,380,630E.*Total Depth:* 1,782 feet*Date:* 1978*Production:* Gas (Shut-in)*Remarks:* IP of 25 MCF reported. Pay zones from the Monteagle at 1,260-1,272 and 1,342-1,352, and the St. Louis at 1,508-1,514 feet.*MAP NUMBER-92*

PERMIT NUMBER —1750

Tartan Oil Co., ROBERT D. PARTEN, ET AL., UNIT No. 1

County: Morgan*Elevation:* 1,330 feet*Carter Coordinates:* 2700 FNL, 1250 FEL, sec. 18, 4S-58E*Total Depth:* 1,660 feet*Date:* 1978*Tennessee Coordinates:* 667,960N., 2,382,350E.*Production:* Gas (Shut-in)*Remarks:* IP of 220 MCF from a 72-hour test. Sample Set No. 2141 (samples from 100-1,660 feet).

Map Numbers 93-96*MAP NUMBER-93*

PERMIT NUMBER-3082

Tartan Oil Co., CONWAY JOHNSON No. 3-C

County: Morgan

Elevation: 1,442 feet

Carter Coordinates: 500 FSL, 2390 FEL, sec. 18, 4S-58E

Total Depth: 1,475 feet

Date: 1980

Tennessee Coordinates: 655,070N., 2,381,250E.

Production: Gas

Remarks: IP of 125 MCF reported from a 4-hour test. Pay zones from the Monteagle at 1,336-1,343 and 1,464-1,469. Electric log from 0-1,472 feet.

MAP NUMBER-94

PERMIT NUMBER-672

C.G. Collins & Western Reserves Oil Co., GALBRAZTH No. 1

County: Morgan

Elevation: 1,519 feet

Carter Coordinates: 1200 FSL, 2000 FWL, sec. 19, 4S-58E

Total Depth: 1,890 feet

Date: 1974

Tennessee Coordinates: 655,830N., 2,385,630E.

Production: Dry and abandoned

Remarks: Electric log from 850-1,879 feet.

MAP NUMBER-95

PERMIT NUMBER-5359

Jon E. Jones, PLATEAU PROPERTIES No. C-1

County: Morgan

Elevation: 1,467 feet

Carter Coordinates: 2065 FSL, 1175 FEL, sec. 20, 4S-58E

Total Depth: 1,936 feet

Date: 1982

Tennessee Coordinates: 656,790N., 2,392,280E.

Production: Gas

Remarks: No initial production reported. Electric log from 1,214-1,934 feet.

MAP NUMBER-96

PERMIT NUMBER-4914

Shepherd Oil Co., PLATEAU PROPERTIES No. 1-A

County: Morgan

Elevation: 1,318 feet

Carter Coordinates: 770 FSL, 300 FEL, sec. 20, 4S-58E

Total Depth: 1,782 feet

Date: 1982

Tennessee Coordinates: 655,500N., 2,393,170E.

Production: Gas (Shut-in) and Oil

Remarks: No production reported.

Map Numbers 97-100*MAP NUMBER-97*

PERMIT NUMBER-3921

B-J, Inc., DAVID M. GALBRAITH E.G.I. No. 1

County: Morgan*Elevation:* 1,360 feet*Carter Coordinates:* 600 FSL, 500 FWL, sec. 20, 4S-58E*Total Depth:* 1,886 feet*Date:* 1981*Tennessee Coordinates:* 655.280N., 2,389,060E.*Production:* Gas*Remarks:* IP of 144 MCF reported from 24-hour test. Pay zone from the Monteagle at 1,455-1,466 feet. Sample Set No. 2321 (samples from 1,180-1,880 feet).*MAP NUMBER-98*

PERMIT NUMBER-4394

Tennessee Land & Exploration Co., PLATEAU PROPERTIES No. B-2

County: Morgan*Elevation:* 1,344 feet*Carter Coordinates:* 300 FNL, 100 FEL, sec. 21, 4S-58E*Total Depth:* 1,820 feet*Date:* 1981*Tennessee Coordinates:* 654,440N., 2,393,390E.*Production:* Dry and abandoned*Remarks:* Electric log from 0-1,812 feet.*MAP NUMBER-99*

PERMIT NUMBER-4520

B-J, Inc., DAVID M. GALBRAITH CA-1981-1 No. 1

County: Morgan*Elevation:* 1,380 feet*Carter Coordinates:* 2350 FNL, 1400 FWL, sec. 21, 4S-58E*Total Depth:* 1,914 feet*Date:* 1981*Tennessee Coordinates:* 652,340N., 2,390,000E.*Production:* Dry and abandoned*Remarks:* Electric log from 900-1,913 feet.*MAP NUMBER-100*

PERMIT NUMBER —2270

Gaspro, Inc., DAVID GILBRAITH No. 1

County: Morgan*Elevation:* 1,452 feet*Carter Coordinates:* 2600 FSL, 370 FWL, sec. 21, 4S-58E*Total Depth:* 1,928 feet*Date:* 1979*Tennessee Coordinates:* 651,210N., 2,388,980E.*Production:* Oil*Remarks:* Initial production of 1.5 BOPD. Pay zone in the Monteagle at 1,412-1,420. Electric log from 950-1,924 feet.

Map Numbers 101-104*MAP NUMBER-101*

PERMIT NUMBER-4613

Tartan Oil Co., LEE GRIFFITH No. 3

County: Morgan*Elevation:* 1,426 feet*Carter Coordinates:* 1600 FSL, 1900 FEL, sec. 21, 4S-58E*Total Depth:* 1,875 feet*Date:* 1981*Tennessee Coordinates:* 650,250N., 2,391,650E.*Production:* Gas*Remarks:* IP of 10 MCF reported from the Monteagle at 1,404-1,409 feet. Electric log from 950-1,871.*MAP NUMBER-102*

PERMIT NUMBER —4384

Tartan Oil Co., LEE GRIFFITH No. 2

County: Morgan*Elevation:* 1,380 feet*Carter Coordinates:* 680 FSL, 950 FEL, sec. 21, 4S-58E*Total Depth:* 1,900 feet*Date:* 1981*Tennessee Coordinates:* 649,340N., 2,392,610E.*Production:* Gas (Shut-in)*Remarks:* IP of 850 MCF reported from a 12-hour test from the Monteagle at 1,534-1,552 feet. Electric log from 1,200-1,895 feet.*MAP NUMBER-103*

PERMIT NUMBER-4691

Tennessee Land & Exploration Co., LEE GRIFFITH No. 1

County: Morgan*Elevation:* 1,445 feet*Carter Coordinates:* 300 FSL, 2200 FEL, sec. 21, 4S-58E*Total Depth:* ? feet*Date:* 1981*Tennessee Coordinates:* 648,940N., 2,391,360E.*Production:* Abandoned location*MAP NUMBER-104*

PERMIT NUMBER-2463

Gaspro, Inc., DAVID GILBRAITH No. 4

County: Morgan*Elevation:* 1,482 feet*Carter Coordinates:* 2640 FNL, 140 FEL, sec. 22, 4S-58E*Total Depth:* 1,950 feet*Date:* 1979*Tennessee Coordinates:* 652,030N., 2,388,460E.*Production:* Dry and abandoned*Remarks:* Initial oil production of 22 BOPD from the Monteagle at 1,520-1,524 feet. Gas show at the same depth. Oil production dropped radically and well was plugged.

Map Numbers 105-108*MAP NUMBER-105*

PERMIT NUMBER-2236

Tartan Oil Co., GRIFFITH-HOUSEHOLDER UNIT No. 1

County: Morgan*Elevation:* 1,452 feet*Carter Coordinates:* 2050 FSL, 1100 FWL, sec. 22, 4S-58E*Total Depth:* 1,783 feet*Date:* 1979*Tennessee Coordinates:* 650,600N., 2,384,810E.*Production:* Oil*Remarks:* Initial production of 6 BOPD from the Monteagle at 1,384-1,387 feet. Gas shows at 1,347-1,351, 1,354-1,360, and 1,433-1,441 feet.*MAP NUMBER-106*

PERMIT NUMBER-3270

Tartan Oil Co., LEE GRIFFITH No. 1

County: Morgan*Elevation:* 1,437 feet*Carter Coordinates:* 1770 FSL, 2000 FWL, sec. 22, 4S-58E*Total Depth:* 1,490 feet*Date:* 1980 *Tennessee Coordinates:* 650,340N., 2,385,710E.*Production:* Oil*Remarks:* Initial production of 3 BOPD reported from the Monteagle at 1,433-1,447 feet. Electric log from 1,000-1,484 feet.*MAP NUMBER-107*

PERMIT NUMBER —1571

Tartan Oil Co., EARL GOOCH No. 1

County: Morgan*Elevation:* 1,428 feet*Carter Coordinates:* 700 FSL, 1500 FWL, sec. 22, 4S-58E*Total Depth:* 1,860 feet*Date:* 1977*Tennessee Coordinates:* 649, 260N., 2,385,220E.*Production:* Oil*Remarks:* Initial production of 1 BOPD reported from the Monteagle at 1,350-1,400 feet. Electric log from 0-1,856 feet.*MAP NUMBER-108*

PERMIT NUMBER —6533

B & W Oil Co., G. TURNER HOWARD No. 1

County: Morgan*Elevation:* 1,278 feet*Carter Coordinates:* 780 FSL, 1140 FEL, sec. 22, 4S-58E*Total Depth:* 1,685 feet*Date:* 1983*Tennessee Coordinates:* 649,370N., 2,387,500E.*Production:* Dry and abandoned*Remarks:* Electric log from 1,012-1,683 feet.

Map Numbers 109-112

MAP NUMBER-105

PERMIT NUMBER -2236

Tartan Oil Co., GRIFFITH-HOUSEHOLDER UNIT No. 1

County: Morgan

Elevation: 1,452 feet

Carter Coordinates: 2050 FSL, 1100 FWL, sec. 22, 4S-58E

Total Depth: 1,783 feet

Date: 1979

Tennessee Coordinates: 650,600N., 2,384,810E.

Production: Oil

Remarks: Initial production of 6 BOPD from the Monteagle at 1,384-1,387 feet. Gas shows at 1,347-1,351, 1,354-1,360, and 1,433-1,441 feet.

MAP NUMBER-106

PERMIT NUMBER-3270

Tartan Oil Co., LEE GRIFFITH No. 1

County: Morgan

Elevation: 1,437 feet

Carter Coordinates: 1770 FSL, 2000 FWL, sec. 22, 4S-58E

Total Depth: 1,490 feet

Date: 1980

Tennessee Coordinates: 650,340N., 2,385,710E.

Production: Oil

Remarks: Initial production of 3 BOPD reported from the Monteagle at 1,433-1,447 feet. Electric log from 1,000-1,484 feet.

MAP NUMBER-107

PERMIT NUMBER -1571

Tartan Oil Co., EARL GOOCH No. 1

County: Morgan

Elevation: 1,428 feet

Carter Coordinates: 700 FSL, 1500 FWL, sec. 22, 4S-58E

Total Depth: 1,860 feet

Date: 1977

Tennessee Coordinates: 649, 260N., 2,385,220E.

Production: Oil

Remarks: Initial production of 1 BOPD reported from the Monteagle at 1,350-1,400 feet. Electric log from 0-1,856 feet.

MAP NUMBER-108

PERMIT NUMBER -6533

B & W Oil Co., G. TURNER HOWARD No. 1

County: Morgan

Elevation: 1,278 feet

Carter Coordinates: 780 FSL, 1140 FEL, sec. 22, 4S-58E

Total Depth: 1,685 feet

Date: 1983

Tennessee Coordinates: 649,370N., 2,387,500E.

Production: Dry and abandoned

Remarks: Electric log from 1,012-1,683 feet.

Map Numbers 113-116*MAP NUMBER-113*

S.D. Davis, LYNN HONEYCUTT No. 1

County: Morgan

Elevation: 1,486 feet

Carter Coordinates: 2950 FNL, 1150 FEL, sec. 24, 4S-58E

Total Depth: 1,393 feet

Date: 1950

Tennessee Coordinates: 651,580N., 2,377,620E.

Production: Dry and abandoned

Remarks: Sample Set No. 609 (samples from 332-1,393 feet).

MAP NUMBER-114

PERMIT NUMBER-3067

Mack Petroleum, Inc., LEM & BESSIE HONEYCUTT No. 2

County: Morgan

Elevation: 1,370 feet

Carter Coordinates: 1260 FSL, 1890 FWL, sec. 24, 4S-58E

Total Depth: 1,332 feet

Date: 1980

Tennessee Coordinates: 649,700N., 2,375,760E.

Production: Dry and abandoned

Remarks: Oil shows at 1,209-1,219 and 1,251-1,261. Electric log from 968-1,320 feet.

MAP NUMBER-115

Henderson, et al., LYNN HONEYCUTT No. 1

County: Morgan

Elevation: 1,340 feet

Carter Coordinates: 950 FSL, 2050 FEL, sec. 24, 4S-58E

Total Depth: 1,244 feet

Date: 1951

Tennessee Coordinates: 649,400N., 2,376,750E.

Production: Oil

Remarks: Initial production of 3-4 BOPD from the Monteagle at 1,233-1,240 feet. Sample Set No. 714 (samples from 50-1,244 feet).

MAP NUMBER-116

Tennessee-Texas Oil Co., GEORGE CALDWELL No. 1

County: Morgan

Elevation: 1,310 feet

Carter Coordinates: 900 FSL, 1100 FEL, sec. 24, 4S-58E

Total Depth: 960 feet

Date: 1947

Tennessee Coordinates: 649,360N., 2,377,700E.

Production: Dry and abandoned

Remarks: Sample Set No. 554 (samples from 710-960 feet).

Map Numbers 117-120*MAP NUMBER-117*

Tennessee-Texas Oil Co., GEORGE CALDWELL No. 3

County: Morgan

Elevation: 1,310 feet

Carter Coordinates: 850 FSL, 700 FEL, sec. 24, 4S-58E

Total Depth: 1,230 feet

Date: 1950

Tennessee Coordinates: 649,320N., 2,378,100E.

Production: Oil

Remarks: Initial production 27 BOPD from the Monteagle at 1,192-1,215 feet. Sample Set No. 649 (samples from 720-1,214 feet).

MAP NUMBER-118

S.D. Jarvis, G.E. HARRISON No. 1

County: Morgan

Elevation: 1,340 feet

Carter Coordinates: 700 FNL, 1400 FEL, sec. 24, 4S-58E

Total Depth: 1,430 feet

Date: 1950

Tennessee Coordinates: 649,160N., 2,377,400E.

Production: Dry and abandoned

Remarks: Gas show reported at 1,199-1,204 feet.

MAP NUMBER-119

U.S. Oil Co., G.E. HARRISON No. 1

County: Morgan

Elevation: 1,325 feet

Carter Coordinates: 500 FSL, 1100 FEL, sec. 24, 4S-58E

Total Depth: 1,227 feet

Date: 1950

Tennessee Coordinates: 648,960N., 2,377,700E.

Production: Oil (abandoned)

Remarks: Initial production of 7 BOPD reported from the Monteagle at 1,210-1,227 feet. Sample Set No. 640 (samples from 998-1,227 feet).

MAP NUMBER-120

Tennessee-Texas Oil Co., ANNA BECK No. 1

County: Morgan

Elevation: 1,350 feet

Carter Coordinates: 0 FSL, 1000 FEL, sec. 24, 4S-58E

Total Depth: 1,258 feet

Date: 1947

Tennessee Coordinates: 648,460N., 2,377,810E.

Production: Oil

Remarks: Initial production of 25 BOPD reported from the Monteagle at 1,240-1,250. Sample Set No. 725 (samples from 120-1,234 feet).

Map Numbers 121-124*MAP NUMBER-121*

Johnson-Messer Oil Co., BECK No. 1

County: Morgan

Elevation: 1,300 feet

Carter Coordinates: 0 FSL, 450 FEL, sec. 24, 4S-58E

Total Depth: 1,751 feet

Date: 1928

Tennessee Coordinates: 648,470N., 2,378,360E.

Production: Oil (abandoned)

Remarks: Initial production of 4-5 BOPD reported from the Monteagle at 1,191-1,215 feet. Sample Set No. 9 (samples from 710-1,751 feet).

MAP NUMBER-122

PERMIT NUMBER -1601

C.G. Collins & Western Reserves Oil Co., SAMUEL VARGA No. 1

County: Morgan

Elevation: 1,385 feet

Carter Coordinates: 900 FNL, 1290 FEL, sec. 25, 4S-58E

Total Depth: 1,567 feet

Date: 1977

Tennessee Coordinates: 653,560N., 2,372,530E.

Production: Oil

Remarks: Initial production of 6 BOPD reported from the Monteagle at 1,290-1,298 feet. Electric log from 0-1,566 feet.

MAP NUMBER-123

PERMIT NUMBER -2529

C.G. Collins & Western Reserves Oil Co., KENNETH DAVIS No. 1

County: Morgan

Elevation: 1,428 feet

Carter Coordinates: 1200 FNL, 1700 FWL, sec. 25, 4S-58E

Total Depth: 1,400 feet

Date: 1979

Tennessee Coordinates: 653,240N., 2,370,610E.

Production: Dry and abandoned

Remarks: Oil shows at 1,150-1,152 and 1,200-1,300 feet. Electric log from 0-1,396 feet.

MAP NUMBER-124

PERMIT NUMBER-2069

C.G. Collins & Western Reserves Oil Co., SAMUEL VARGA HEIRS No. 2

County: Morgan

Elevation: 1,377 feet

Carter Coordinates: 1910 FNL, 1090 FEL, sec. 25, 4S-58E

Total Depth: 1,450 feet

Date: 1979

Tennessee Coordinates: 652,550N., 2,372,750E.

Production: Gas

Remarks: IP estimated at 100 MCF. Pay zone in the Monteagle at 1,240-1,247. Oil shows at 1,240-1,247 and 1,425-1,430 feet. Electric log from 150-1,448 feet.

Map Numbers 125-128*MAP NUMBER-125*

PERMIT NUMBER -2726

Universal Land & Mineral Leasing, R.C. McWHORTER, ET AL., No. 2

County: Morgan*Elevation:* 1,480 feet*Carter Coordinates:* 500 FSL, 1400 FWL, sec. 25, 4S-58E*Total Depth:* ? feet*Date:* 1980*Tennessee Coordinates:* 648,870N., 2,370,370E.*Production:* Dry and abandoned*Remarks:* Results unreported.*MAP NUMBER-126*

PERMIT NUMBER-6066

Glen A. Wright, LINDSAY, ET AL., No. 1

County: Morgan*Elevation:* 1,540 feet*Carter Coordinates:* 735 FNL, 2020 FWL, sec. 3, 4S-59E*Total Depth:* 2,084 feet*Date:* 1983*Tennessee Coordinates:* 678,430N., 2,405,010E.*Production:* Gas (Shut-in)*Remarks:* No initial production reported. Pay zones from the Monteagle at 1,566-1,576 and 1,678-1,686 feet.*MAP NUMBER-127*

PERMIT NUMBER-3574

R.B. Hamby, CHANEY No. 1

County: Morgan*Elevation:* 1,000 feet*Carter Coordinates:* 1425 FNL, 400 FWL, sec. 3, 4S-59E*Total Depth:* 1,907 feet*Date:* 1980*Tennessee Coordinates:* 677,720N., 2,403,400E.*MAP NUMBER-128*

PERMIT NUMBER-6347

Glen A. Wright, SALENIA HAMBY UNIT No. 1

County: Morgan*Elevation:* 1,566 feet*Carter Coordinates:* 2560 FNL, 1780 FWL, sec. 3, 4S-59E*Total Depth:* 2,058 feet*Date:* 1983*Tennessee Coordinates:* 676,610N., 2,404,800E.*Production:* Gas (Shut-in)*Remarks:* No initial production reported. Pay zones from the Monteagle at 1,516-1,526 and 1,560-1,570 feet.

Map Numbers 129-132*MAP NUMBER-129*

PERMIT NUMBER-5663

SRI Drilling, TOMPKINS/WEAVER No. 1

County: Morgan

Elevation: 1,535 feet

Carter Coordinates: 510 FNL, 1290 FWL, sec. 4, 4S-59E

Total Depth: 1,732 feet

Date: 1982

Tennessee Coordinates: 678,580N., 2,399,370E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Pay zone from the Monteagle at 1,551-1,574 feet. Electric log from 1,354-1,728 feet.

MAP NUMBER-130

PERMIT NUMBER-2949

Thunderbird Oil & Gas, LOY TOMPKINS No. 1

County: Morgan

Elevation: 1,560 feet

Carter Coordinates: 740 FNL, 2300 FEL, sec. 4, 4S-59E

Total Depth: 2,050 feet

Date: 1980

Tennessee Coordinates: 678,370N., 2,400,690E.

Production: Dry and abandoned

Remarks: Gas shows at 1,550-1,560 and 1,675-1,685 feet. Electric log from 0-2,046 feet.

MAP NUMBER-131

PERMIT NUMBER-5976

Glen A. Wright, A. CHANEY-C. LINDSAY No. 1

County: Morgan

Elevation: 1,458 feet

Carter Coordinates: 1775 FNL, 2190 FEL, sec. 4, 4S-59E

Total Depth: 1,934 feet

Date: 1983

Tennessee Coordinates: 677,340N., 2,400,820E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Pay zones from the Monteagle at 1,444-1,456 and 1,573-1,576 and from the Fort Payne at 1,826-1,831 feet.

MAP NUMBER-132

PERMIT NUMBER -2899

Thunderbird Oil & Gas, HORACE C. WEAVER No. 1

County: Morgan

Elevation: 1,480 feet

Carter Coordinates: 1900 FNL, 1680 FWL, sec. 4, 4S-59E

Total Depth: 1,960 feet

Date: 1980

Tennessee Coordinates: 677,200N., 2,399,770E.

Production: Gas (Shut-in)

Remarks: IP of 227 MCF reported from a 24-hour test. Gas pay zone and show of oil at 1,580-1,600 feet.

Map Numbers 133-136*MAP NUMBER-133*

PERMIT NUMBER-6913

Glen A. Wright, WEAVER No. M-10

County: Morgan

Elevation: 1,390 feet

Carter Coordinates: 2490 FNL, 1020 FWL, sec. 4, 4S-59E

Total Depth: 1,532 feet

Date: 1984

Tennessee Coordinates: 676,600N., 2,399,120E.

Production: Gas (Shut-in)

Remarks: IP of 190 MCF reported from 24-hour test from the Monteagle at 1,485-1,491 and 1,503-1,509 feet. Oil show from same horizon.

MAP NUMBER-134

PERMIT NUMBER-3628

Hudson Resources, BEATRICE EDWARDS No. 1

County: Morgan

Elevation: 1,468 feet

Carter Coordinates: 2600 FNL, 1275 FEL, sec. 4, 4S-59E

Total Depth: 1,880 feet

Date: 1981

Tennessee Coordinates: 676,11 0N., 2,400,750E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Electric log from 1,200-1,882 feet.

MAP NUMBER-135

PERMIT NUMBER -4104

Hudson Resources, McKEETHAN No. 1

County: Morgan

Elevation: 1,314 feet

Carter Coordinates: 2500 FSL, 200 FWL, sec. 4, 4S-59E

Total Depth: 1,829 feet

Date: 1981

Tennessee Coordinates: 675,530N., 2,400,120E.

Production: Gas (Shut-in)

Remarks: IP of 45 MCF reported from the Monteagle at 1,405-1,410 feet. Electric log from 800-1,825 feet.

MAP NUMBER-136

PERMIT NUMBER -6952

Glen A. Wright, McKEETHAN Et AL., UNIT No. M-5

County: Morgan

Elevation: 1,340 feet

Carter Coordinates: 2160 FSL, 1140 FWL, sec. 4, 4S-59E

Total Depth: 1,480 feet

Date: 1984

Tennessee Coordinates: 675,180N., 2,399,260E.

Production: Oil

Remarks: Initial production of 10 BOPD from the Monteagle at 1,438-1,451 feet. Gas show at 1,280 feet. Electric log from 1,137-1,480 feet.

Map Numbers 137-140*MAP NUMBER-137*

PERMIT NUMBER -5321

T.H. Grasso Oil & Gas Development, Inc., I.J. WEBB No. 1

County: Morgan

Elevation: 1,339 feet

Carter Coordinates: 1890 FSL, 2330 FWL, sec. 4, 4S-59E

Total Depth: 1,810 feet

Date: 1982

Tennessee Coordinates: 674,930N., 2,400,430E.

Production: Gas (Shut-in)

Remarks: IP of 50 MCF reported from the Monteagle at 1,360-1,455 feet. Electric log from 500-1,816 feet.

MAP NUMBER-138

PERMIT NUMBER -5988

Glen A. Wright, GREGORY BAILEY, ET AL., No. 1

County: Morgan

Elevation: 1,324 feet

Carter Coordinates: 1870 FSL, 1010 FEL, sec. 4, 4S-59E

Total Depth: 1,830 feet

Date: 1983

Tennessee Coordinates: 678,110N., 2,400,800E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Pay zone from the Monteagle at 1,306-1,328 and 1,439-1,448 and from the Ft. Payne at 1,679-1,687 feet. Electric log from 1,069-1,828 feet.

MAP NUMBER-139

PERMIT NUMBER -6728

Glen A. Wright, WEBB-McKEETHAN UNIT No. 1

County: Morgan

Elevation: 1,415 feet

Carter Coordinates: 1235 FSL, 1515 FWL, sec. 4, 4S-59E

Total Depth: 1,909 feet

Date: 1984

Tennessee Coordinates: 674,260N., 2,399,650E.

Production: Gas (Shut-in)

Remarks: IP of 100 MCF reported from the Monteagle at 1,505-1,520 feet. Electric log from 1,209-1,906 feet.

MAP NUMBER-140

PERMIT NUMBER -6897

Glen A. Wright, HALL-BAILEY UNIT No. 1

County: Morgan

Elevation: 1,360 feet

Carter Coordinates: 1095 FSL, 540 FEL, sec. 4, 4S-59E

Total Depth: 1,551 feet

Date: 1984

Tennessee Coordinates: 674,160N., 2,402,510E.

Production: Gas (Shut-in)

Remarks: IP of 100 MCF reported from the Monteagle at 1,375-1,388, 1,406-1,412, 1,460-1,472, and 1,506-1,514 feet. Electric log from 0-1,633 feet.

Map Numbers 141-144*MAP NUMBER-141*

PERMIT NUMBER-4852

David M. Summer, SUSIE DAILY No. 1

County: Morgan

Elevation: 1,396 feet

Carter Coordinates: 980 FSL, 1530 FEL, sec. 4, 4S-59E

Total Depth: 1,925 feet

Date: 1980

Tennessee Coordinates: 674,030N., 2,401,520E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Pay zones from the Monteagle reported at 1,426-1,432 and 1,514-1,520 feet.

MAP NUMBER-142

PERMIT NUMBER-6721

Glen A. Wright, WEBB-BAILEY UNIT No. 1

County: Morgan

Elevation: 1,420 feet

Carter Coordinates: 740 FSL, 2350 FWL, sec. 4, 4S-59E

Total Depth: 1,970 feet

Date: 1984

Tennessee Coordinates: 673,780N., 2,400,490E.

Production: Gas (Shut-in)

Remarks: IP of 75 MCF reported from the Monteagle at 1,560-1,577 and 1,596-1,612 feet. Electric log from 1,254-1,971 feet.

MAP NUMBER-143

PERMIT NUMBER-6846

Glen A. Wright, WEBB-McKEETHAN-FREELS UNIT No. 1

County: Morgan

Elevation: 1,500 feet

Carter Coordinates: 280 FSL, 1510 FWL, sec. 4, 4S-59E

Total Depth: 2,007 feet

Date: 1984

Tennessee Coordinates: 673,310N., 2,399,660E.

Production: Gas (Shut-in)

Remarks: IP of 42 MCF reported from the Monteagle at 1,516-1,528 feet. Electric log from 1,282-2,004 feet.

MAP NUMBER-144

PERMIT NUMBER-6931

Glen A. Wright, BAILEY-WEBB UNIT No. M-6

County: Morgan

Elevation: 1,510 feet

Carter Coordinates: 100 FSL, 1825 FEL, sec. 4, 4S-59E

Total Depth: 1,630 feet

Date: 1984

Tennessee Coordinates: 673,150N., 2,401,240E.

Production: Gas (Shut-in)

Remarks: IP of 150 MCF reported from the Monteagle at 1,456-1,464, 1,476-1,488, 1,538-1,544, and 1,564-1,593 feet.

Map Numbers 145-148

MAP NUMBER-145

PERMIT NUMBER-6812

Glen A. Wright, HALL No. 1

County: Morgan

Elevation: 1,520 feet

Carter Coordinates: 160 FSL, 740 FWL, sec. 4, 4S-59E

Total Depth: 2,008 feet.

Date: 1984 Tennessee Coordinates: 673,220N., 2,402,330E.

Production: Gas (Shut-in)

Remarks: IP of 150 MCF reported from a 24-hour test from the Monteagle at 1,517-1,524, 1,580-1,592, and 1,614-1,618 feet. Electric log from 1,301-2,006 feet.

MAP NUMBER-146

PERMIT NUMBER-6365

Cardinal Petroleum, Inc., JOHN SALTS, ET AL., No. 1

County: Morgan

Elevation: 1,422 feet

Carter Coordinates: 260 FNL, 1990 FEL, sec. 5, 4S-59E

Total Depth: 1,558 feet

Date: 1983

Tennessee Coordinates: 678,790N., 2,396,080E.

Production: Dry and abandoned

Remarks: Gas show from the Monteagle at 1,355 feet. Electric log from 1,100-1,555 feet.

MAP NUMBER-147

PERMIT NUMBER-3529

Hudson Resources, FREELS No. 1

County: Morgan

Elevation: 1,310 feet

Carter Coordinates: 457 FNL, 350 FEL, sec. 5, 4S-59E

Total Depth: 1,750 feet

Date: 1981

Tennessee Coordinates: 678,540N., 2,393,510E.

Production: Oil

Remarks: Initial production of 12 BOPD on a 24-hour test from the Monteagle at 1,294-1,306 feet. Electric log from 966-1,758 feet.

MAP NUMBER-148

PERMIT NUMBER-3361

Tennessee Land & Exploration Co., ELGINWOOD PRODUCTS No. 1

County: Morgan

Elevation: 1,375 feet

Carter Coordinates: 750 FNL, 1300 FWL, sec. 5, 4S-59E

Total Depth: 1,825 feet

Date: 1980

Tennessee Coordinates: 678,270N., 2,394,460E.

Production: Oil

Remarks: Initial production of 5 BOPD on a 24-hour test from the Monteagle at 1,344-1,354 feet. Electric log from 900-1,825 feet.

Map Numbers 149-152

MAP NUMBER-149
PERMIT NUMBER-3798
Bobbitt Oil & Gas, WEBB-BYRD No. 1
County: Morgan
Elevation: 1,380 feet
Carter Coordinates: 525 FNL, 1150 FEL, sec. 5, 4S-59E
Total Depth: 1,755 feet
Date: 1981
Tennessee Coordinates: 678,530N., 2,396,930E.
Production: Dry and abandoned
Remarks: Gas show at 1,380-1,390 feet. Electric log from 850-1,751 feet.

MAP NUMBER-150
PERMIT NUMBER-2818
R.B. Hamby, WEBB-SALTS UNIT No. 1
County: Morgan
Elevation: 1,380 feet
Carter Coordinates: 1075 FNL, 2000 FEL, sec. 5, 4S-59E
Total Depth: 1,436 feet
Date: 1981
Tennessee Coordinates: 677,970N., 2,396,080E.
Production: Oil
Remarks: Initial production of 4 BOPD reported from the Monteagle at 1,380-1,400 feet. Electric log from 950-1,436 feet.

MAP NUMBER-151
PERMIT NUMBER-4168
R.B. Hamby, WILLIAM BUTTRAM, ET AL., No. 1
County: Morgan
Elevation: 1,376 feet
Carter Coordinates: 1510 FNL, 2110 FWL, sec. 5, 4S-59E
Total Depth: 1,425 feet
Date: 1981
Tennessee Coordinates: 677,520N., 2,395,290E.
Production: Oil
Remarks: Initial production of 1 BOPD reported from the Monteagle at 1,345-1,365 feet. Electric log from 975-1,408 feet.

MAP NUMBER-152
PERMIT NUMBER-3575
R.B. Hamby, LYNDIA WEBB-H. WEBB UNIT No. 1
County: Morgan
Elevation: 1,420 feet
Carter Coordinates: 1600 FNL, 1200 FEL, sec. 5, 4S-59E
Total Depth: 1,408 feet
Date: 1980
Tennessee Coordinates: 677,460N., 2,396,890E.
Production: Dry and abandoned
Remarks: Gas show at 1,125-1,130 feet. Electric log from 965-1,406 feet.

Map Numbers 153-156

MAP NUMBER-153

PERMIT NUMBER -4130

Sunbright Oil & Gas, Inc., WILLIAM MACK No. 1

County: Morgan

Elevation: 1,395 feet

Carter Coordinates: 2125 FNL, 80 FEL, sec. 5, 4S-59E

Total Depth: 1,575 feet

Date: 1981

Tennessee Coordinates: 676,950N., 2,398,020E.

Production: Gas (Shut-in)

Remarks: IP of 30 MCF on a 24-hour test from the Monteagle at 1,455 feet. Oil show at 1,358 feet.

MAP NUMBER-154

PERMIT NUMBER -4995

R.B. Hamby, ENGLAND, ET AL., No. 1

County: Morgan

Elevation: 1,326 feet

Carter Coordinates: 2350 FNL, 10 FWL, sec. 5, 4S-59E

Total Depth: 1,409 feet

Date: 1982

Tennessee Coordinates: 676,660N., 2,393,200E.

Production: Oil

Remarks: Initial production of 2 BOPD from the Monteagle at 1,270-1,290 feet. Electric log from 980-1,409 feet.

MAP NUMBER-155

PERMIT NUMBER-5325

Kenneth M. MacKenzie, Jr., LINDA WEBB, ET AL., No. 1

County: Morgan

Elevation: 1,311 feet

Carter Coordinates: 2250 FNL, 2280 FEL, sec. 5, 4S-59E

Total Depth: 1,430 feet

Date: 1982

Tennessee Coordinates: 676,790N., 2,395,820E.

Production: Oil

Remarks: Initial production of 50 BOPD from a 48-hour test from the Monteagle at 1,286-1,308 feet. Electric log from 800-1,430 feet.

MAP NUMBER-156

PERMIT NUMBER-4170

R.B. Hamby, WILLIAM BUTTRAM No. 1

County: Morgan

Elevation: 1,308 feet

Carter Coordinates: 2350 FNL, 1800 FWL, sec. 5, 4S-59E

Total Depth: 1,381 feet

Date: 1981

Tennessee Coordinates: 676,680N., 2,394,990E.

Production: Oil

Remarks: Initial production of 1 BOPD from the Monteagle at 1,280-1,300 feet. Electric log from 900-1,373 feet.

Map Numbers 157-160*MAP NUMBER-157*

PERMIT NUMBER-5314

Glen A. Wright, MRS. JACK ENGLAND No. 1

County: Morgan

Elevation: 1,305 feet

Carter Coordinates: 2750 FNL, 1800 FWL, sec. 5, 4S-59E

Total Depth: 1,755 feet

Date: 1982

Tennessee Coordinates: 676,300N., 2,396,310E.

Production: Dry and abandoned

Remarks: Electric log from 719-1,758 feet.

MAP NUMBER-158

PERMIT NUMBER-3797

Bobbitt Oil & Gas, JOE GOSNELL, ET AL., No. 1

County: Morgan

Elevation: 1,383 feet

Carter Coordinates: 2950 FNL, 710 FWL, sec. 5, 4S-59E

Total Depth: 1,750 feet

Date: 1981

Tennessee Coordinates: 676,070N., 2,393,900E.

Production: Oil

Remarks: Initial production of 3 BOPD on a 24-hour test from the Monteagle at 1,365-1,388 feet. Electric log from 750-1,742 feet.

MAP NUMBER-159

PERMIT NUMBER -3820

R.B. Hamby, McKEETHAN-ENGLAND No. 1

County: Morgan

Elevation: 1,315 feet

Carter Coordinates: 3000 FNL, 520 FEL, sec. 5, 4S-59E

Total Depth: 1,607 feet

Date: 1981

Tennessee Coordinates: 676,070N., 2,397,590E.

Production: Dry and abandoned

MAP NUMBER-160

PERMIT NUMBER -5412

Bobbitt Oil & Gas, Inc., GEORGIA WYMER UNIT No. 1

County: Morgan

Elevation: 1,335 feet

Carter Coordinates: 2750 FSL, 1950 FWL, sec. 5, 4S-59E

Total Depth: 1,430 feet

Date: 1982

Tennessee Coordinates: 675,710N., 2,395,150E.

Production: Oil

Remarks. Initial production of 50 BOPD on a 24-hour test from the Monteagle at 1,310-1,330 feet. Electric log from 1,007-1,430 feet.

Map Numbers 161-164*MAP NUMBER-161*

PERMIT NUMBER-4136

Bobbitt Oil & Gas, Inc., NORRIS No. 1

County: Morgan*Elevation:* 1,400 feet*Carter Coordinates:* 2310 FSL, 140 FWL, sec. 5, 4S-59E*Total Depth:* 1,451 feet*Date:* 1981*Tennessee Coordinates:* 675,250N., 2,393,350E.*Production:* Oil*Remarks:* Initial production of 1 BOPD on a 24-hour test from the Monteagle at 1,375-1,390 feet. Electric log from 1,050-1,451 feet.*MAP NUMBER-162*

PERMIT NUMBER-4896

Bobbitt Oil & Gas, Inc., RAYMOND SAUNDERS No. 1

County: Morgan*Elevation:* 1,395 feet*Carter Coordinates:* 2340 FSL, 1075 FWL, sec. 5, 4S-59E*Total Depth:* ? feet*Date:* 1982*Tennessee Coordinates:* 675,290N., 2,394,280E.*Production:* Dry and abandoned*Remarks:* No result reported.*MAP NUMBER-163*

PERMIT NUMBER -6180

Robert Pollock, DBA Pollock Oil & Gas Products, JAMES GOSNELL HEIRS UNIT No. 1

County: Morgan*Elevation:* 1,425 feet*Carter Coordinates:* 1920 FSL, 1820 FWL, sec. 5, 4S-59E*Total Depth:* 1,450 feet*Date:* 1983*Tennessee Coordinates:* 674,880N., 2,395,030E.*Production:* Oil*Remarks:* Initial production of 12 BOPD from the Monteagle at 1,354-1,380 feet. Electric log from 1,172-1,447 feet.*MAP NUMBER-164*

PERMIT NUMBER-6181

Robert Pollock, DBA Pollock Oil & Gas Products, JAMES GOSNELL HEIRS UNIT No. 2

County: Morgan*Elevation:* 1,440 feet*Carter Coordinates:* 1950 FSL, 2650 FWL, sec. 5, 4S-59E*Total Depth:* 1,508 feet*Date:* 1983*Tennessee Coordinates:* 674,920N., 2,395,860E.*Production:* Oil*Remarks:* Initial production of 2.5 BOPD from the Monteagle at 1,424-1,440 feet. Electric log from 1,200-1,500 feet.

Map Numbers 165-168*MAP NUMBER-165*

PERMIT NUMBER -6434

Robert Pollock, DBA Pollock Oil & Gas Products, JAMES GOSNELL HEIRS UNIT No. 3

County: Morgan*Elevation:* 1,380 feet*Carter Coordinates:* 1400 FSL, 1150 FWL, sec. 5, 4S-59E*Total Depth:* 1,427 feet*Date:* 1983*Tennessee Coordinates:* 674,350N., 2,394,370E,*Production:* Oil*Remarks:* Initial production of 12 BOPD from the Monteagle at 1,323-1,350 feet. Electric log from 1,215-1,425 feet.*MAP NUMBER-166*

PERMIT NUMBER -6775

Jon E. Jones, GOSNELL HEIRS-SMITH No. 4

County: Morgan *Elevation:* 1,480 feet*Carter Coordinates:* 1040 FSL, 2220 FWL,*Total Depth:* 1,530 feetsec. 5, 4S-59E *Date:* 1984*Tennessee Coordinates:* 674,010N., 2,395,440E.*Production:* Oil*Remarks:* Initial production of 20 BOPD on a 24-hour test from the Monteagle at 1,482-1,502 feet.*MAP NUMBER-167*

PERMIT NUMBER-3821

Dusa Drilling Co., HUGH BLANKEN No. 1

County: Morgan*Elevation:* 1,582 feet*Carter Coordinates:* 320 FNL, 1720 FWL, sec. 6, 4S-59E*Total Depth:* 1,682 feet*Date:* 1981*Tennessee Coordinates:* 672,640N., 2,394,960E.*Production:* Gas (Shut-in)*Remarks:* No initial production reported.*MAP NUMBER-168*

PERMIT NUMBER-4019

Bobbin Oil & Gas, PHIFER, ET AL., No. 1

County: Morgan*Elevation:* 1,600 feet*Carter Coordinates:* 1300 FSL, 1850 FWL, sec. 6, 4S-59E*Total Depth:* 2,000 feet*Date:* 1981*Tennessee Coordinates:* 668,200N., 2,395,150E.*Production:* Dry and abandoned*Remarks:* Gas show from the Monteagle at 1,540-1,560 feet. Electric log from 1,200-2,004 feet.

Map Numbers 169-172*MAP NUMBER-169*

PERMIT NUMBER-6781

Johnson Energy, Inc., H.M. FREELS No. 2

County: Morgan*Elevation:* 1,522 feet*Carter Coordinates:* 680 FNL, 2300 FWL, sec. 7, 4S-59E*Total Depth:* ? feet*Date:* 1984*Tennessee Coordinates:* 672,360N., 2,400,460E.*Production:* Dry and abandoned*Remarks:* Result unreported.*MAP NUMBER-170*

PERMIT NUMBER-5436

T.H. Grasso Oil & Gas Development, H.M. FREELS No. 1

County: Morgan*Elevation:* 1,428 feet*Carter Coordinates:* 1740 FNL, 350 FWL, sec. 7, 4S-59E*Total Depth:* 1,885 feet*Date:* 1982*Tennessee Coordinates:* 671,270N., 2,398,530E.*Production:* Dry and abandoned*Remarks:* Electric log from 1,150. 1,883 feet.*MAP NUMBER-171*

PERMIT NUMBER-1398

Dely Miller, FAUST No. 1

County: Morgan*Elevation:* 1,550 feet*Carter Coordinates:* 1680 FSL, 2220 FWL, sec. 7, 4S-59E*Total Depth:* 2,025 feet*Date:* 1977*Tennessee Coordinates:* 668,650N., 2,400,430E.*Production:* Dry and abandoned*Remarks:* Electric log from 600-2,018 feet.*MAP NUMBER-172*

PERMIT NUMBER-6729

Glen A. Wright, HALL No. 3

County: Morgan*Elevation:* 1,510 feet*Carter Coordinates:* 325 FNL, 75 FWL, sec. 8, 4S-59E*Total Depth:* 2,007 feet*Date:* 1984*Tennessee Coordinates:* 672,750N., 2,403,150E.*Production:* Oil and gas (Shut-in)*Remarks:* Initial production of 1/2 BOPD and 100 MCF reported from a 24-hour test from the Monteaule at 1,496-1,508 and 1,524-1,533 feet.

Map numbers 173-176*MAP NUMBER-173*

PERMIT NUMBER -4425

Sunbright Oil & Gas, Inc., FAUST-JEFFERS, ET AL., No. 1

County: Morgan*Elevation:* 1,291 feet*Carter Coordinates:* 700 FNL, 2250 FEL, sec. 16, 4S-59E*Total Depth:* 1,775 feet*Date:* 1981*Tennessee Coordinates:* 660,140N., 2,396,080E.*Production:* Dry and abandoned*Remarks:* Electric log from 1,094-1,769.*MAP NUMBER-174*

PERMIT NUMBER-4302

Sunbright Lumber Enterprises, Inc., PEMBERTON, ET AL., No. 1

County: Morgan*Elevation:* 1,269 feet*Carter Coordinates:* 1660 FNL, 2200 FEL, sec. 16, 4S-59E*Total Depth:* 1,700 feet*Date:* 1981*Tennessee Coordinates:* 659,180N., 2,396,140E.*Remarks:* Initial production of 1/2 BOPD reported from the Monteagle at 1,290-1,300 feet. Electric log from 1,096-1,704 feet.*MAP NUMBER-175*

PERMIT NUMBER-3884

Dixie-Shamrock Oil & Gas, Inc., HUGH D. FAUST III No. 1

County: Morgan*Elevation:* 1,279 feet*Carter Coordinates:* 1630 FNL, 1200 FEL, sec. 16, 4S-59E*Total Depth:* 1,761 feet*Date:* 1981*Tennessee Coordinates:* 659,230N., 2,397,140E.*Production:* Gas*Remarks:* IP of 59.2 MCF reported from a 19.5-hour test from the Fort Payne at 1,630-1,636 feet. Electric log from 0-1,761 feet.*MAP NUMBER-176*

PERMIT NUMBER-3900

Tennessee Land & Exploration Co., HUGH D. FAUST III No. 3

County: Morgan*Elevation:* 1,284 feet*Carter Coordinates:* 1610 FNL, 310 FEL, sec. 16, 4S-59E*Total Depth:* 1,763 feet*Date:* 1981*Tennessee Coordinates:* 659,260N., 2,395,040E.*Production:* Oil*Remarks:* Initial production of 80 BOPD reported from a 20-hour test from the Monteagle at 1,346 and from the Fort Payne at 1,644-1,669 feet. Electric log from 0-1,759 feet.

Map Numbers 177-180*MAP NUMBER-177*

PERMIT NUMBER-9374

Tennessee Land & Exploration Co., JOHN B. ARMES, ET AL., No. 1

County: Morgan*Elevation:* 1,231 feet*Carter Coordinates:* 2300 FNL, 1820 FWL, sec. 16, 4S-59E*Total Depth:* 1,730 feet*Date:* 1981*Tennessee Coordinates:* 658,530N., 2,395,250E.*Production:* Oil*Remarks:* Initial production of 65 BOPD reported from a 10-hour test from the Monteagle at 1,269-1,283 and from the Fort Payne at 1,625-1,633, 1,640-1,648 and 1,653-1,659 ft. Electric log from 754-1,710 ft.*MAP NUMBER-178*

PERMIT NUMBER —3719

Tennessee Land & Exploration Co., HUGH D. FAUST III No. 2

County: Morgan*Elevation:* 1,378 feet*Carter Coordinates:* 2480 FNL, 1225 FEL, sec. 16, 4S-59E*Total Depth:* 2,107 feet*Date:* 1981*Tennessee Coordinates:* 658,380N., 2,397,130E.*Production:* Oil*Remarks:* Initial production of 50 BOPD from a 16-hour test from the Fort Payne at 1,774-1,780 and 1,788-1,794 feet. Electric log from 0-2,107 feet.*MAP NUMBER-179*

PERMIT NUMBER-3901

Dixie-Shamrock Oil and Gas, Inc., HUGH D. FAUST III No. 2

County: Morgan*Elevation:* 1,418 feet*Carter Coordinates:* 2550 FNL, 300 FEL, sec. 16, 4S-59E*Total Depth:* 2,954 feet*Date:* 1981*Tennessee Coordinates:* 658,320N., 2,398,060E.*Production:* Oil*Remarks:* Initial production of 15 BOPD from a 24-hour test from the Monteagle at 1,471-1,477 and from the Fort Payne at 1,837-1,843. Electric log from 0-2,954 feet.*MAP NUMBER-180*

PERMIT NUMBER-4206

Dixie-Shamrock Oil & Gas, Inc., PEMBERTON, ET AL., No. 1

County: Morgan*Elevation:* 1,303 feet*Carter Coordinates:* 2680 FNL, 2200 FEL, sec. 16, 4S-59E*Total Depth:* 1,793 feet*Date:* 1981*Tennessee Coordinates:* 658,160N., 2,396,160E.*Production:* Oil*Remarks:* Initial production of 67 BOPD from a 24-hour test from the Monteagle at 1,338-1,346 and from the Fort Payne at 1,694-1,700 feet. Electric log from 0-1,792 feet.

Map Numbers 181-184*MAP NUMBER-181*

PERMIT NUMBER-4213

Dixie-Shamrock Oil & Gas, Inc., SEXTON, ET AL., No. 1

County: Morgan

Elevation: 1,361 feet

Carter Coordinates: 2820 FSL, 1980 FWL, sec. 16, 9S-59E

Total Depth: 1,850 feet

Date: 1981

Tennessee Coordinates: 657,590N., 2,395,430E.

Production: Oil

Remarks: Initial production of 95 BOPD from a 24-hour test from the Monteagle at 1,402-1,410 and from the Fort Payne at 1,764-1,772 and 1,778-1,786 feet. Electric log from 0-1,846 feet.

MAP NUMBER-182

PERMIT NUMBER-4079

Dixie-Shamrock Oil & Gas, Inc., RICH, ET AL., No. 1

County: Morgan

Elevation: 1,332 feet

Carter Coordinates: 2590 FSL, 1280 FEL, sec. 16, 4S-59E

Total Depth: 1,830 feet

Date: 1981

Tennessee Coordinates: 657,380N., 2,397,090E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Pay zone in the Monteagle at 1,350-1,364 feet. Electric log from 0-1,827 feet.

MAP NUMBER-183

PERMIT NUMBER-4337

Tennessee Land & Exploration Co., HUGH D. FAUST III No. 7

County: Morgan

Elevation: 1,907 feet

Carter Coordinates: 2550 FSL, 2160 FEL, sec. 16, 4S-59E

Total Depth: 1,902 feet

Date: 1981

Tennessee Coordinates: 657,330N., 2,396,210E.

Production: Oil

Remarks: Initial production of 60 BOPD from a 24-hour test from the Monteagle at 1,449-1,457 and from the Fort Payne at 1,815-1,835 feet. Electric log from 0-1,897 feet.

MAP NUMBER-184

PERMIT NUMBER-4928

Oil Discoveries, Inc., DAVE ARMES, ET AL., No. 1

County: Morgan

Elevation: 1,250 feet

Carter Coordinates: 2250 FSL, 1150 FWL, sec. 16, 4S-59E

Total Depth: 1,755 feet

Date: 1982

Tennessee Coordinates: 657,000N., 2,394,600E.

Production: Oil

Remarks: Initial production of 70 BOPD from a 24-hour test from the Monteagle at 1,272-1,286 feet. Electric log from 700-1,755 feet.

Map Numbers 185-188*MAP NUMBER-185*

PERMIT NUMBER-4792

Tennessee Land & Exploration Co., HUGH D. FAUST III No. 9

County: Morgan

Elevation: 1,361 feet*Carter Coordinates:* 1880 FSL, 2080 FWL, sec. 16, 4S-59E*Total Depth:* 1,840 feet*Date:* 1982*Tennessee Coordinates:* 656,650N., 2,395,540E.*Production:* Oil*Remarks:* Initial production of 50 BOPD from a 9-hour test from the Monteagle at 1,393-1,403 feet. Electric log from 0-1,833 feet.*MAP NUMBER-186*

PERMIT NUMBER-4067

Tennessee Land & Exploration Co., PLATEAU PROPERTIES No. B-1

County: Morgan

Elevation: 1,350 feet*Carter Coordinates:* 1600 FSL, 50 FWL, sec. 16, 4S-59E*Total Depth:* 1,800 feet*Date:* 1981*Tennessee Coordinates:* 656,340N., 2,393,510E.*Production:* Oil*Remarks:* Initial production of 40 BOPD from a 24-hour test from the Fort Payne at 1,704-1,716 feet. Electric log from 0-1,800 feet.*MAP NUMBER-187*

PERMIT NUMBER-6910

Deloy Miller, DAVE ARMES UNIT No. 2

County: Morgan

Elevation: 1,222 feet*Carter Coordinates:* 1400 FSL, 1190 FWL, sec. 16, 4S-59E*Total Depth:* ? feet*Date:* 1984*Tennessee Coordinates:* 656,150N., 2,394,660E.*Production:* Dry and abandoned*Remarks:* Results unreported.*MAP NUMBER-188*

PERMIT NUMBER-5001

Oil Discoveries, Inc., BUXTON, ET AL., No. 1

County: Morgan

Elevation: 1,230 feet*Carter Coordinates:* 625 FSL, 750 FWL, sec. 16, 4S-59E*Total Depth:* 1,759 feet*Date:* 1982*Tennessee Coordinates:* 655,370N., 2,394,230E.*Production:* Gas (Shut-in)*Remarks:* Initial production not reported. Pay zones from the Monteagle at 1,328-1,332 and 1,341-1,344 feet. Electric log from 1,140-1,751 feet.

Map Numbers 189-192*MAP NUMBER-189*

PERMIT NUMBER-3555

Tennessee Land & Exploration Co., FAUST-KENNEDY No. 1

County: Morgan

Elevation: 1,483 feet

Carter Coordinates: 110 FSL, 1375 FEL, sec. 16, 4S-59E

Total Depth: 2,230 feet

Date: 1981

Tennessee Coordinates: 654,900N., 2,397,030E.

Production: Gas (Shut-in)

Remarks: IP of 3.92 MCF reported from a 24-hour test. Pay zone in the Silurian (?) at 2,040 feet. Electric log from 0-2,224 feet.

MAP NUMBER-190

PERMIT NUMBER -3980

Tennessee Land & Exploration Co., HUGH D. FAUST III No. 4

County: Morgan

Elevation: 1,365 feet

Carter Coordinates: 525 FNL, 520 FWL, sec. 17, 4S-59E

Total Depth: 1,847 feet

Date: 1981

Tennessee Coordinates: 660,360N., 2,398,850E.

Production: Oil

Remarks: Initial production of 24 BOPD from the Monteagle at 1,363-1,377 and 1,396-1,404 feet. Electric log from 950-1,847 feet.

MAP NUMBER-191

PERMIT NUMBER -3981

Dixie-Shamrock Oil & Gas. Inc., HUGH D. FAUST III No. 5

County: Morgan

Elevation: 1,328 feet

Carter Coordinates: 500 FNL, 1420 FWL, sec. 17, 4S-59E

Total Depth: 1,820 feet

Date: 1981

Tennessee Coordinates: 660,390N., 2,399,750E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Gas pay from the Monteagle at 1,456-1,462 feet. Electric log from 0-1,820 feet.

MAP NUMBER-192

PERMIT NUMBER -3954

Dixie-Shamrock Oil & Gas, Inc., HUGH D. FAUST III No. 3

County: Morgan

Elevation: 1,323 feet

Carter Coordinates: 1540 FNL, 440 FWL, sec. 17, 4S-59E

Total Depth: 1,863 feet

Date: 1981

Tennessee Coordinates: 659,340N., 2,398,780E.

Production: Oil

Remarks: Initial production of 20 BOPD from a 24-hour test from the Monteagle at 1,370-1,376 and from the Fort Payne at 1,720-1,728 feet. Electric log from 0-1,863 feet.

Map Numbers 193-196*MAP NUMBER-193*

PERMIT NUMBER-4278

Tennessee Land & Exploration Co., HUGH D. FAUST III No. 6

County: Morgan*Elevation:* 1,344 feet*Carter Coordinates:* 1480 FNL, 1280 FWL, sec. 17, 4S-59E*Total Depth:* 1,875 feet*Date:* 1981*Tennessee Coordinates:* 659,410N., 2,399,620E.*Production:* Gas (Shut-in)*Remarks:* No initial production reported. Gas pay from the Fort Payne at 1,755-1,768 feet. Electric log from 0-1,875 feet.*MAP NUMBER-194*

PERMIT NUMBER-4036

Dixie-Shamrock Oil & Gas Inc., HUGH D. FAUST III No. 7

County: Morgan*Elevation:* 1,534 feet*Carter Coordinates:* 1450 FNL, 2320 FWL, sec. 17, 4S-59E*Total Depth:* ? feet*Date:* 1981*Tennessee Coordinates:* 659,460N., 2,400,660E.*Production:* Abandoned location*MAP NUMBER-195*

PERMIT NUMBER-4345

Dixie-Shamrock Oil & Gas, Inc., HUGH D. FAUST III No. 7

County: Morgan*Elevation:* 1,439 feet*Carter Coordinates:* 1800 FM, 2080 FWL, sec. 17, 4S-59E*Total Depth:* 1,940 feet*Date:* 1981*Tennessee Coordinates:* 659,100N., 2,400,420E.*Production:* Oil*Remarks:* Initial production of 8 BOPD from a 24-hour test from the Fort Payne at 1,836-1,838 and 1,842-1,850 feet. Electric log from 0-1,930 feet.*MAP NUMBER-196*

PERMIT NUMBER -4531

Dixie-Shamrock Oil & Gas, Inc., HUGH D. FAUST III No. 11

County: Morgan*Elevation:* 1,628 feet*Carter Coordinates:* 1740 FNL, 1180 FEL, sec. 17, 4S-59E*Total Depth:* 2,098 feet*Date:* 1981*Tennessee coordinates:* 659,180N., 2,402,080E.*Production:* Gas (Shut-in)*Remarks:* No initial production reported. Gas pay from the Chattanooga at 2,076-2,095 feet. Electric log from 0-2,098 feet.

Map Numbers 197-200*MAP NUMBER-197*

PERMIT NUMBER -4217

Tennessee Land & Exploration Co., HUGH D. FAUST III No. 5

County: Morgan

Elevation: 1,378 feet

Carter Coordinates: 2480 FNL, 590 FWL, sec. 17, 4S-59E

Total Depth: 1,883 feet

Date: 1981

Tennessee Coordinates: 658,400N., 2,398,940E.

Production: Oil

Remarks: Initial production of 20 BOPD from the Monteagle at 1,386-1,401 and 1,424-1,430 and from the Fort Payne at 1,782-1,789 feet. Electric log from 0-1,874 feet.

MAP NUMBER-198

PERMIT NUMBER -4037

Dixie-Shamrock Oil and Gas, Inc., HUGH D. FAUST III No. 6

County: Morgan

Elevation: 1,327 feet

Carter Coordinates: 2380 FNL, 1500 FWL, sec. 17, 4S-59E

Total Depth: 1,825 feet

Date: 1980

Tennessee Coordinates: 658,510N., 2,399,850E.

Production: Oil

Remarks: Initial production of 16 BOPD from a 24-hour test from the Fort Payne at 1,693-1,740 feet. Electric log from 0-1,825 feet.

MAP NUMBER-199

PERMIT NUMBER-4439

Tennessee Land & Exploration Co., HUGH D. FAUST III No. 8

County: Morgan

Elevation: 1,502 feet

Carter Coordinates: 2600 FNL, 2380 FWL, sec. 17, 4S-59E

Total Depth: 1,973 feet

Date: 1981

Tennessee Coordinates: 658,310N., 2,400,740E.

Production: Dry and abandoned

Remarks: Electric log from 0-1,972 feet.

MAP NUMBER-200

PERMIT NUMBER-4383

Dixie-Shamrock Oil & Gas, Inc., HUGH D. FAUST III No. 9

County: Morgan

Elevation: 1,626 feet

Carter Coordinates: 2580 FNL, 1700 FEL, sec. 17, 4S-59E

Total Depth: 2,128 feet

Date: 1981

Tennessee Coordinates: 658,340N., 2,401,570E.

Production: Oil

Remarks: Initial production of 38 BOPD from a 24-hour test from the Fort Payne at 2,032-2,042 and 2,050-2,052 feet. Electric log from 0-2,117 feet.

Map Numbers 201-204*MAP NUMBER-201*

PERMIT NUMBER-4959

Tennessee Land & Exploration Co., HUGH D. FAUST III No. 12

County: Morgan*Elevation:* 1,641 feet*Carter Coordinates:* 2540 FNL, 850 FEL, sec. 17, 4S-59E*Total Depth:* 2,100 feet*Date:* 1982*Tennessee Coordinates:* 658,390N., 2,402,420E.*Production:* Oil*Remarks:* Initial production of 20 BOPD reported from the Fort Payne at 2,067-2,079 feet.*MAP NUMBER-202*

PERMIT NUMBER-4653

Dixie-Shamrock Oil & Gas, Inc., HUGH D. FAUST III No. 19

County: Morgan*Elevation:* 1,705 feet*Carter Coordinates:* 2550 FNL, 20 FEL, sec. 17, 4S-59E*Total Depth:* 2,189 feet*Date:* 1981*Tennessee Coordinates:* 658,390N., 2,403,250E.*Production:* Oil*Remarks:* Initial production of 7 BOPD from a 24-hour test from the Fort Payne at 2,038-2,101 feet.
Electric log from 0-2,189 feet.*MAP NUMBER-203*

PERMIT NUMBER-4465

Dixie-Shamrock Oil & Gas Inc., HUGH D. FAUST III No. 10

County: Morgan*Elevation:* 1,540 feet*Carter Coordinates:* 2750 FSL, 2100 FEL, sec. 17, 4S-59E*Total Depth:* 2,131 feet*Date:* 1981*Tennessee Coordinates:* 657,590N., 2,401,180E.*Production:* Oil*Remarks:* Initial production of 19 BOPD from a 24-hour test from the Fort Payne at 2,041-2,084 feet.
Electric log from 0-2,130 feet.*MAP NUMBER-204*

PERMIT NUMBER-4559

Dixie-Shamrock Oil & Gas, Inc., HUGH D. FAUST III No. 12

County: Morgan*Elevation:* 1,718 feet*Carter Coordinates:* 2800 FSL, 410 FEL, sec. 17, 4S-59E*Total Depth:* 2,232 feet*Date:* 1981*Tennessee Coordinates:* 657,670N., 2,402,870E.*Production:* Oil*Remarks:* Initial production of 52 BOPD from a 24-hour test from the Fort Payne at 2,120-2,174 feet.
Electric log from 0-2,232 feet.

Map Numbers 205-208*MAP NUMBER-205*

Tennessee Copper Co., FORD, FAUST, & CHEELEY No. 1

County: Morgan

Elevation: 1,655 feet

Carter Coordinates: 1700 FSL, 1450 FWL, sec. 17, 9S-59E

Total Depth: 2,302 feet

Date: 1956

Tennessee Coordinates: 656,530N., 2,399,830E.

Production: Dry and abandoned

Remarks: Gas shows at 803, 970-972, 1,778-1,779 (Est. 100 MCF), 2,149-2,188 feet. Sample Set No. 1043 (samples from 0-1,350 feet).

MAP NUMBER-206

PERMIT NUMBER-5385

Tennessee Land & Exploration Co., HUGH D. FAUST III No. 4

County: Morgan

Elevation: 1,697 feet

Carter Coordinates: 2360 FNL, 800 FWL, sec. 18, 4S-59E

Total Depth: 2,222 feet

Date: 1982

Tennessee Coordinates: 658,590N., 2,404,070E.

Production: Dry and abandoned

Remarks: Electric log from 1,514-2,210 feet.

MAP NUMBER-207 ([Well log for Map Number 207](#))

PERMIT NUMBER-4812

Dixie-Shamrock Oil and Gas, Inc., HUGH D. FAUST III No. 17

County: Morgan

Elevation: 2,018 feet

Carter Coordinates: 3000 FSL, 1230 FWL, sec. 18, 4S-59E

Total Depth: 2,603 feet

Date: 1982

Tennessee Coordinates: 657,890N., 2,404,510E.

Production: Oil

Remarks: Initial production of 5 BOPD from the Monteagle at 2,100-2,112 and 2,196-2,222 and from the Fort Payne at 2,480-2,496 feet.

MAP NUMBER-208

PERMIT NUMBER-4700

Tennessee Land & Exploration Co., HUGH D. FAUST III No. 11

County: Morgan

Elevation: 1,812 feet

Carter Coordinates: 2810 FSL, 430 FWL, sec. 18, 4S-59E

Total Depth: 2,270 feet

Date: 1982

Tennessee Coordinates: 657,690N., 2,403,710E.

Production: Oil

Remarks: Initial production of 150 BOPD from a 24-hour test from the Fort Payne at 2,216-2,226 feet.

Map Numbers 209-212*MAP NUMBER-209*

PERMIT NUMBER -4864

Dixie-Shamrock Oil & Gas, Inc., HUGH D. FAUST III No. 18

County: Morgan

Elevation: 2,176 feet

Carter Coordinates: 2330 FSL, 1710 FWL, sec. 18, 4S-59E

Total Depth: 2,793 feet

Date: 1982

Tennessee Coordinates: 657,230N., 2,405,000E.

Production: Oil

Remarks: Initial production of 20 BOPD from a 24-hour test from the Monteagle at 2,389-2,430 feet. Electric log from 0-2,789 feet.

MAP NUMBER-210

PERMIT NUMBER-4694

Dixie-Shamrock Oil & Gas, Inc., HUGH D. FAUST III No. 15

County: Morgan

Elevation: 1,943 feet

Carter Coordinates: 2070 FSL, 10 FWL, sec. 18, 4S-59E

Total Depth: 2,488 feet

Date: 1982

Tennessee Coordinates: 656,940N., 2,403,300E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Gas pay from the Chattanooga at 2,466-2,485 feet. Electric log from 0-2,488 feet.

MAP NUMBER-211

PERMIT NUMBER -4911

Dixie-Shamrock Oil & Gas, Inc., HUGH D. FAUST III No. 19

County: Morgan

Elevation: 2,182 feet

Carter Coordinates: 1320 FSL, 790 FWL, sec. 18, 4S-59E

Total Depth: 2,776 feet

Date: 1982

Tennessee Coordinates: 656,210N., 2,404,090E. Production: Dry and abandoned

Remarks: Electric log from 1-2,775 feet.

MAP NUMBER-212

PERMIT NUMBER-6705

Deloy Miller, HUGH D. FAUST III UNIT No. 1

County: Morgan

Elevation: 2,440 feet

Carter Coordinates: 1340 FSL, 1835 FWL, sec. 18, 4S-59E

Total Depth: ? feet

Date: 1984

Tennessee Coordinates: 656,240N., 2,405,140E.

Production: Dry and abandoned

Remarks: Results unreported.

Map Numbers 213-216*MAP NUMBER-213*

PERMIT NUMBER-2124

Dixie Oil Co., HUGH D. FAUST III No. 1

County: Morgan

Elevation: 1,390 feet

Carter Coordinates: 1500 FNL, 150 FWL, sec. 23, 4S-59E

Total Depth: 2,300 feet

Date: 1979

Tennessee Coordinates: 653,380N., 2,403,490E.

Production: Gas (Shut-in)

Remarks: IP of 27 MCF reported from a 24-hour test from the Monteagle at 1,640-1,648 and 1,652-1,658 and from the Chattanooga at 2,010- 2,056 feet. Electric log from 0-2,297 feet.

MAP NUMBER-214

PERMIT NUMBER-2843

Tennessee Land & Exploration C., HUGH D. FAUST III No. 1

County: Morgan

Elevation: 1,322 feet,

Carter Coordinates: 2300 FNL, 470 FWL, sec. 24, 4S-59E

Total Depth: 2,109 feet

Date: 1980

Tennessee Coordinates: 652,510N., 2,398,910E.

Production: Oil and gas

Remarks: Initial productions of 5 BOPD 72 MCF from a 24-hour test from the Monteagle at 1,300-1,325 and 1,434-1,940 feet. Electric log from 1,150-2,108 feet.

MAP NUMBER-215

PERMIT NUMBER-5111

County: Morgan

Elevation: 1,338 feet

Carter Coordinates: 1800 FNL, 1310 FWL, sec. 25, 4S-59E

Total Depth: ? feet

Date: 1982

Tennessee Coordinates: 652,960N., 2,394,920E.

Production: Gas

Remarks: No initial production reported from the pay zones in the Monteagle at 1,408-1,420 and 1,438-1,442 feet. Electric log from 0-1,836 feet.

MAP NUMBER-216

PERMIT NUMBER-4330

Tennessee Land & Exploration Co., GRIFFITH, ET AL., No. 1

County: Morgan

Elevation: 1,380 feet

Carter Coordinates: 810 FSL, 420 FWL, sec. 25, 4S-59E

Total Depth: 1,857 feet

Date: 1981

Tennessee Coordinates: 649,490N., 2,393,980E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Pay zone in the Monteagle from 1,449-1,452 feet. Electric log from 0-1,857 feet.

Map Numbers 217-220*MAP NUMBER-217*

PERMIT NUMBER - 3851

Tennessee Land & Exploration Co., GRIFFITH-HOWARD No. 1

County: Morgan

Elevation: 1,408 feet

Carter Coordinates: 650 FNL, 950 FEL, sec. 1, 5S-58E

Total Depth: 1,887 feet

Date: 1981

Tennessee Coordinates: 648,010N., 2,392,630E.

Production: Gas (Shut-in)

Remarks: IP of 950 MCF reported from the Monteagle at 1,514-1,524 feet. Electric log from 0-1,886 feet.

MAP NUMBER-218

PERMIT NUMBER-2473

Tennessee Land & Exploration Co., TURNER HOWARD No. 1

County: Morgan

Elevation: 1,385 feet

Carter Coordinates: 1900 FNL, 1975 FEL, sec. 1, 5S-58E

Total Depth: 1,879 feet

Date: 1979

Tennessee Coordinates: 646,750N., 2,391,620E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Gas pay zones in the Monteagle at 1,309-1,312, 1,508 in the St. Louis, and in the Chattanooga at 1,829 feet. Electric log from 0-1,879 feet.

MAP NUMBER-219

PERMIT NUMBER-3006

Tennessee Land & Exploration Co., HOWARD-ROBINETTE No. 1

County: Morgan

Elevation: 1,420 feet

Carter Coordinates: 2900 FSL, 810 FWL, sec. 1, 5S-58E

Total Depth: 1,825 feet

Date: 1980

Tennessee Coordinates: 645,450N., 2,389,500E.

Production: Gas (Shut-in)

Remarks: IP of 23 MCF reported from the Monteagle at 1,430-1,437 feet. Electric log from 0-1,817 feet.

MAP NUMBER-220

PERMIT NUMBER-1916

Tartan Oil Co., G. TURNER HOWARD No. 2

County: Morgan

Elevation: 1,380 feet

Carter Coordinates: 2725 FSL, 380 FEL, sec. 1, 5S-58E

Total Depth: 1,858 feet

Date: 1978

Tennessee Coordinates: 645,330N., 2,393,230E.

Production: Dry and abandoned

Remarks: Electric log from 0-1,855 feet.

Map Numbers 221-224*MAP NUMBER-221*

PERMIT NUMBER-1315

Tartan Oil Co., G. TURNER HOWARD No. 1

County: Morgan*Elevation:* 1,401 feet*Carter Coordinates:* 1380 FSL, 1140 FEL, sec. 1, 5S-58E*Total Depth:* 1,977 feet*Date:* 1977*Tennessee Coordinates:* 643,970N., 2,392,490E.*Production:* Gas (Shut-in)*Remarks:* IP of 100 MCF reported from 29-hour test. Pay zone in the Fort Payne at 1,760-1,800 feet. Electric log from 0-1,974 feet.*MAP NUMBER-222*

PERMIT NUMBER-653

Cumberland Resources Corp., DR. G. TURNER HOWARD No. 1

County: Morgan*Elevation:* 1,443 feet*Carter Coordinates:* 600 FSL, 350 FEL, sec. 1, 5S-58E*Total Depth:* 1,902 feet*Date:* 1974*Tennessee Coordinates:* 643,200N., 2,393,290E.*Production:* Dry and abandoned*Remarks:* Oil show at 1,840-1,890 feet. Sample Set No. 1907 (samples from 935-1,890 feet).*MAP NUMBER-223*

PERMIT NUMBER-2397

Tartan Oil Co., MAMIE HOUSTON, ET AL., No. 1

County: Morgan*Elevation:* 1,425 feet*Carter Coordinates:* 2150 FNL, 300 FWL, sec. 2, 5S-59E*Total Depth:* 1,784 feet*Date:* 1979*Tennessee Coordinates:* 646,390N., 2,384,060E.*Production:* Gas*Remarks:* IP of 25 MCF reported from 24-hour test. Pay zone in the Monteagle at 1,324-1,335 feet. Sample Set No. 2199 (samples from 100-1,780 feet).*MAP NUMBER-224*

PERMIT NUMBER-2937

Tartan Oil Co., HENRY G. PETREY, No. 1-A

County: Morgan*Elevation:* 1,339 feet*Carter Coordinates:* 60 FNL, 410 FWL, sec. 3, 5S-58E*Total Depth:* ? feet*Date:* 1980*Tennessee Coordinates:* 698,380N., 2,379,210E.*Production:* Oil*Remarks:* Initially drilled in 1951 by Ralph Mong. Well made 8-10 BOPD after acidizing. Pay zone in the Monteagle at 1,250-1,255 feet. Initial production in 1980 of 1/2 BOPD.

Map Numbers 225-228*MAP NUMBER-225*

PERMIT NUMBER -679

Alex A. Morgan, HENRY G. PETREY No. 2

County: Morgan

Elevation: 1,400 feet

Carter Coordinates: 500 FNL, 1300 FWL, sec. 3, 5S-58E

Total Depth: ? feet

Date: 1974

Tennessee Coordinates: 647,990N., 2,380,120E.

Production: Abandoned location

MAP NUMBER-226

East Tennessee Oil & Gas Co., ANGELINE RITTER No. 1

County: Morgan

Elevation: 1,450 feet

Carter Coordinates: 550 FNL, 1850 FWL, sec. 3, 5S-58E

Total Depth: 2,096 feet

Date: 1931

Tennessee Coordinates: 647,950N., 2,380,670E.

Production: Dry and abandoned

Remarks: Gas shows at 894-904 and 1,820-1,855 feet. Oil show at 1,370-1,380 feet.

MAP NUMBER-227

E-P. Jarvis, GEORGE COOPER No. 1

County: Morgan

Elevation: 1,356 feet

Carter Coordinates: 1300 FNL, 700 FWL, sec. 3, 5S-58E

Total Depth: 1,394 feet

Date: 1951

Tennessee Coordinates: 647,180N., 2,379,530E.

Production: Dry and abandoned

Remarks: Sample Set No. 658 (samples from 17-1,394 feet).

MAP NUMBER-228

PERMIT NUMBER-3578

Clyde Fuller, ETHEL COOPER, ET AL., No. 2

County: Morgan

Elevation: 1,304 feet

Carter Coordinates: 2250 FNL, 1200 FWL, sec. 3, 5S-58E

Total Depth: ? feet

Date: 1981

Tennessee Coordinates: 646,240N., 2,380,040E.

Production: Dry and abandoned

Remarks: Results unreported.

Map Numbers 229-232*MAP NUMBER-229*

PERMIT NUMBER -5496

Sunbright Oil & Gas, Inc., LEE HOUSTON No. 1

County: Morgan

Elevation: 1,492 feet

Carter Coordinates: 2950 FSL, 625 FEL, sec. 3, 5S-58E

Total Depth: 1,860 feet

Date: 1982

Tennessee Coordinates: 645,410N., 2,383,150E.

Production: Dry and abandoned

Remarks: Electric log from 1,100-1,865 feet.

MAP NUMBER-230

PERMIT NUMBER-3579

Clyde Fuller, ETHEL COOPER No. 3

County: Morgan

Elevation: 1,315 feet

Carter Coordinates: 2475 FSL, 775 FWL, sec. 3, 5S-58E

Total Depth: ? feet

Date: 1981

Tennessee Coordinates: 644,890N., 2,379,630E.

Production: Dry and abandoned

Remarks: Results unreported.

MAP NUMBER-231

U.S. Oil Co., G.E. HARRISON No. 2

County: Morgan

Elevation: 1,392 feet

Carter Coordinates: 400 FNL, 1300 FEL, sec. 4, 5S-58E

Total Depth: 1,375 feet

Date: 1951

Tennessee Coordinates: 648,060N., 2,377,520E.

Production: Dry and abandoned

Remarks: Oil show at 1,259-1,272 feet. Sample Set No. 656 (samples from 0-1,325 feet).

MAP NUMBER-232

PERMIT NUMBER-1566

Tennessee Drilling Co., PLATEAU PROPERTIES No. 1

County: Morgan

Elevation: 1,462 feet

Carter Coordinates: 1200 FNL, 1800 FEL, sec. 4, 5S-58E

Total Depth: 1,810 feet

Date: 1978

Tennessee Coordinates: 647,250N., 2,377,030E.

Production: Gas (Shut-in)

Remarks: IP of 110 MCF reported from 29-hour test. Pay zone in the Monteagle at 1,353-1,365 feet.

Electric log from 0-1,809 feet.

Map Numbers 233-236*MAP NUMBER-233*

PERMIT NUMBER-3580

Clyde Fuller, ETHEL COOPER, ET AL., No. 4

County: Morgan*Elevation:* 1,398 feet*Carter Coordinates:* 2600 FNL, 75 FEL, sec. 4, 5S-58E*Total Depth:* ? feet*Date:* 1981*Tennessee Coordinates:* 645,870N., 2,378,770E.*Production:* Dry and abandoned*Remarks:* Results unreported.*MAP NUMBER-234*

PERMIT NUMBER-6559

B & W Oil Co., ARTHUR DAVIDSON No. 1

County: Morgan*Elevation:* 1,360 feet*Carter Coordinates:* 2090 FSL, 340 FWL, sec. 4, 5S-58E*Total Depth:* 1,835 feet*Date:* 1983*Tennessee Coordinates:* 642,860N., 2,374,800E.*Production:* Oil*Remarks:* Initial production of 2 BOPD reported from the Monteagle at 1,355-1,368 feet. Electric log from 1,108-1,832 feet.*MAP NUMBER-235*

PERMIT NUMBER-1017

Tengo Oil Co., PLATEAU PROPERTIES, INC. No. 1

County: Morgan*Elevation:* 1,511 feet*Carter Coordinates:* 2050 FNL, 700 FEL, sec. 5, 5S-58E*Total Depth:* ? feet*Date:* 1975*Tennessee Coordinates:* 646,350N., 2,373,220E.*Production:* Dry and abandoned*Remarks:* Results unreported.*MAP NUMBER-236*

PERMIT NUMBER-2442

Smoky Exploration Co., Inc., PLATEAU PROPERTIES No. 1

County: Morgan*Elevation:* 1,480 feet*Carter Coordinates:* 3200 FSL, 1900 FWL, sec. 5, 5S-58E*Total Depth:* 2,700 feet*Date:* 1979*Tennessee Coordinates:* 645,500N., 2,370,910E.*Production:* Gas*Remarks:* IP of 188 MCF reported from a 4-hour test from the Bangor, Monteagle, Fort Payne, Chattanooga, and the Trenton from 1,067- 2,700 feet. Electric log from 100-2,700 feet.

Map Numbers 237-240*MAP NUMBER-237*

George Messer, et al., R.V. DAVIDSON No. 1

County: Morgan

Elevation: 1,505 feet

Carter Coordinates: 2750 FNL, 1600 FEL, sec. 5, 5S-58E

Total Depth: 1,720 feet

Date: 1937

Tennessee Coordinates: 645,640N., 2,372,330E.

Production: Dry and abandoned

Remarks: Gas shows at 1,335 and 1,353 feet. Sample Set No. 352 (samples from 750-1,064 feet).

MAP NUMBER-238

PERMIT NUMBER -5029

B & W Oil Co., ALBINA S. PLOCH No. 1

County: Morgan

Elevation: 1,490 feet

Carter Coordinates: 90 FNL, 190 FWL, sec. 6, 5S-58E

Total Depth: 1,782 feet

Date: 1982

Tennessee Coordinates: 642,190N., 2,369,240E.

Production: Gas

Remarks: IP of 50 MCF reported from the Monteagle at 1,232 feet. Electric log from 1,000-1,782 feet.

MAP NUMBER-239

PERMIT NUMBER-4919

Dusa Drilling Co., J.L. BILLINGS No. 1

County: Morgan

Elevation: 1,518 feet

Carter Coordinates: 50 FNL, 2400 FWL, sec. 6, 5S-58E

Total Depth: 2,685 feet

Date: 1982

Tennessee Coordinates: 642,260N., 2,371,450E.

Production: Dry and abandoned

Remarks: Oil show in the Monteagle at 1,380-1,420 feet. Electric log from 1,146-2,685 feet.

MAP NUMBER-240

PERMIT NUMBER -3325

Tennessee Land & Exploration Co., DAVIDSON-McCARTT No. 1

County: Morgan

Elevation: 1,405 feet

Carter Coordinates: 100 FNL, 1400 FEL, sec. 6, 5S-58E

Total Depth: 1,730 feet

Date: 1980

Tennessee Coordinates: 642,230N., 2,372,570E.

Production: Gas

Remarks: Initial production of 3.92 MCF reported from a 27-hour test from the Chattanooga at 1,723 feet. Electric log from 0-1,721 feet.

Map Numbers 241-244*MAP NUMBER-241*

PERMIT NUMBER -1889

Jack W. Holtz, ARTHUR DAVIDSON No. 1

County: Morgan*Elevation:* 1,470 feet*Carter Coordinates:* 250 FNL, 300 FEL, sec. 6, 5S-58E*Total Depth:* 1,811 feet*Date:* 1978*Tennessee Coordinates:* 640,270N., 2,372,450E.*Production:* Dry and abandoned*Remarks:* Oil and gas show at 1,320-1,336 feet. Electric log from 0-1,809 feet.*MAP NUMBER-242*

PERMIT NUMBER-2291

Jack W. Holtz, Sr., McCARTT, ET AL., UNIT No. 1

County: Morgan*Elevation:* 1,410 feet*Carter Coordinates:* 1000 FNL, 1500 FEL, sec. 6, 5S-58E*Total Depth:* 2,658 feet*Date:* 1979*Tennessee Coordinates:* 641.330N., 2,372,480E.*Production:* Oil and gas*Remarks:* No initial production reported. Gas pay zones at 1,326-1,336 and 1,620-1,650 feet. Electric log from 0-2,675 feet.*MAP NUMBER-243*

PERMIT NUMBER-3807

Tennessee Land & Exploration Co., WILLIAMS, ET AL., No. 1

County: Morgan*Elevation:* 1,358 feet*Carter Coordinates:* 1250 FNL, 400 FEL, sec. 6, 5S-58E*Total Depth:* 1,677 feet*Date:* 1981*Tennessee Coordinates:* 641,090N., 2,373,590E.*Production:* Oil*Remarks:* Initial production of 20 BOPD from a 30-hour test from the Fort Payne at 1,582-1,590 and 1,596-1,604 feet. Electric log from 0-1,677 feet.*MAP NUMBER-244*

PERMIT NUMBER-2319

Jack W. Holtz, Sr., McCARTT UNIT No. 2

County: Morgan*Elevation:* 1,418 feet*Carter Coordinates:* 1700 FNL, 1600 FWL, sec. 5, 5S-58E*Total Depth:* 2,625 feet*Date:* 1979*Tennessee Coordinates:* 640,600N., 2,370,670E.*Production:* Gas (Shut-in)*Remarks:* Initial production not tested. Gas pay zones in the Monteagle at 1,245-1,255 and in the Cannon at 2,475-2,490 feet. Electric log from 0-2,624 feet.

Map Numbers 245-248*MAP NUMBER-245*

PERMIT NUMBER-1624

Earl Pyle, C.L. & C. FARM No. 1

County: Morgan*Elevation:* 1,412 feet*Carter Coordinates:* 2300 FNL, 370 FWL, sec. 6, 5S-58E*Total Depth:* 1,729 feet*Date:* 1978*Tennessee Coordinates:* 639,990N., 2,369,450E.*Production:* Gas (Domestic)*Remarks:* Gas pay at 1,390 feet. Electric log from 590-1,728 feet.*MAP NUMBER-246*

PERMIT NUMBER-2338

Jack W. Holtz, Sr., McCARTT, ET AL., UNIT No. 3

County: Morgan*Elevation:* 1,416 feet*Carter Coordinates:* 2800 FNL, 2300 FEL, sec. 6, 5S-58E*Total Depth:* 2,657 feet*Date:* 1979*Tennessee Coordinates:* 639,519N., 2,371,719E.*Production:* Gas (Shut-in)*Remarks:* No initial production reported. Gas pay zones in the Monteagle at 1,225-1,240 and 1,335-1,345 feet. Oil show in the Trenton at 2,635-2,640 feet. Electric log from 0-2,655 feet.*MAP NUMBER-247*

PERMIT NUMBER-1818

B.L. Chain & R.N. Simms, ROSS H. WILLIAM No. 1

County: Morgan*Elevation:* 1,397 feet*Carter Coordinates:* 2825 FNL, 10 FEL, sec. 6, 5S-58E*Total Depth:* 1,752 feet*Date:* 1978*Tennessee Coordinates:* 639,520N., 2,374,000E.*Production:* Dry and abandoned*Remarks:* Gas shows at 1,284-1,296 and 1,340-1,350 feet. Electric log from 0-1,750 feet.*MAP NUMBER-248*

PERMIT NUMBER-3606

Joe E. Thompson, C.L. & C. FARMS No. 1

County: Morgan*Elevation:* 1,460 feet*Carter Coordinates:* 2500 FSL, 0 FWL, sec. 6, 5S-58E*Total Depth:* 1,781 feet*Date:* 1980*Tennessee Coordinates:* 638,710N., 2,369,090E.*Production:* Dry and abandoned*Remarks:* Gas show in the Monteagle at 1,360 feet. Electric log from 750-1,781 feet.

Map Numbers 249-252*MAP NUMBER-249*

PERMIT NUMBER-2319

Tennessee Land & Exploration Co., LONG, ET AL., UNIT No. 1

County: Morgan*Elevation:* 1,375 feet*Carter Coordinates:* 1800 FSL, 1600 FEL, sec. 6, 5S-58E*Total Depth:* 1,745 feet*Date:* 1979*Tennessee Coordinates:* 638,060N., 2,372,420E.*Production:* Gas (Shut-in)*Remarks:* IP of 10 MCF reported from a 24-hour test from the Chattanooga at 1,700-1,745 feet. Gas show in the Warsaw at 1,450-1,480 feet. Electric log from 0-1,708 feet.*MAP NUMBER-250*

PERMIT NUMBER-5890

B & W Oil Co., C.L. & C. FARMS No. 1

County: Morgan*Elevation:* 1,421 feet*Carter Coordinates:* 1180 FSL, 1320 FWL, sec. 6, 5S-58E*Total Depth:* 1,755 feet*Date:* 1983 *Tennessee Coordinates:* 637,410N., 2,370,430E.*Production:* Oil*Remarks:* Initial production of 1.5 BOPD from the Monteagle at 1,299-1,312 feet. Electric log from 1,050-1,755 feet.*MAP NUMBER-251*

PERMIT NUMBER-6923

Deep Ventures Oil & Gas., GREEN ACRES EXPLORATION, INC., No. 7

County: Morgan*Elevation:* 1,399 feet*Carter Coordinates:* 20 FSL, 20 FWL, sec. 6, 5S-58E*Total Depth:* ? feet*Date:* 1984*Tennessee Coordinates:* 636,230N., 2,369,150E.*Production:* Dry and abandoned*Remarks:* Results unreported.*MAP NUMBER-252*

PERMIT NUMBER-691

Cleo R. Ludwig, ARTHUR J. DAVIDSON No. 1

County: Morgan*Elevation:* 1,490 feet*Carter Coordinates:* 300 FNL, 1850 FWL, sec. 7, 5S-58E*Total Depth:* 1,638 feet*Date:* 1974*Tennessee Coordinates:* 642,070N., 2,375,820E.*Production:* Dry and abandoned*Remarks:* Gas zone in the Bangor at 1,169-1,175 feet estimated at 100 MCF. Gas was used by landowner for domestic use. Electric log from 650-1,201 feet.

Map Numbers 253-256*MAP NUMBER-253*

PERMIT NUMBER-4107

Dixie-Shamrock Oil & Gas, Inc., ROSS H. WILLIAMS No. 2

County: Morgan

Elevation: 1,312 feet

Carter Coordinates: 1900 FNL, 150 FWL, sec. 7, 5S-58E

Total Depth: 1,675 feet

Date: 1981

Tennessee Coordinates: 640,450N., 2,374,140E.

Production: Gas (Shut-in)

Remarks: Initial production not reported. Gas pay in the Monteagle at 1,258-1,268 feet. Electric log from 0-1,673 feet.

MAP NUMBER-254

PERMIT NUMBER-3105

Tennessee Land & Exploration Co., WILLIAMS-WILLIAMS No. 1

County: Morgan

Elevation: 1,330 feet

Carter Coordinates: 2000 FNL, 2400 FWL, sec. 7, 5S-58E

Total Depth: 1,780 feet

Date: 1980

Tennessee Coordinates: 640,380N., 2,376,390E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Gas pay in the Monteagle at 1,107 feet. Electric log from 0-1,773 feet.

MAP NUMBER-255

PERMIT NUMBER-4214

Dixie-Shamrock Oil & Gas, Inc., WILLIAMS-DAVIDSON No. 1

County: Morgan

Elevation: 1,284 feet

Carter Coordinates: 2320 FSL, 2350 FEL, sec. 7, 5S-58E

Total Depth: 1,729 feet

Date: 1981

Tennessee Coordinates: 638,630., 2,376,590E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Gas pay in the Monteagle at 1,244-1,254 feet. Electric log from 0-1,729 feet.

MAP NUMBER-256

PERMIT NUMBER-1659

Deloy Miller, WILLIAMS-WILLIAMS UNIT No. 1

County: Morgan

Elevation: 1,300 feet

Carter Coordinates: 1400 FSL, 1420 FWL, sec. 7, 5S-58E

Total Depth: 1,700 feet

Date: 1978

Tennessee Coordinates: 637,700N., 2,375,450E.

Production: Dry and abandoned

Remarks: Electric log from 0-1,698 feet.

Map Numbers 257-260*MAP NUMBER-257*

Wilson & Son, ROSS WILLIAMS No. 1

County: Morgan

Elevation: 1,320 feet

Carter Coordinates: 800 FSL, 1100 FWL, sec. 7, 5S-58E

Total Depth: 1,299 feet

Date: 1968

Tennessee Coordinates: 637,090N., 2,375,140E.

Production: Dry and abandoned

MAP NUMBER-258

PERMIT NUMBER-4219

Dixie-Shamrock Oil & Gas, Inc., SCOTT, ET AL., No. 1

County: Morgan

Elevation: 1,336 feet

Carter Coordinates: 1020 FSL, 1220 FWL, sec. 8, 5S-58E

Total Depth: 1,775 feet

Date: 1983

Tennessee Coordinates: 637,380N., 2,380,180E.

Production: Gas (Shut-in)

Remarks: No initial production reported. Gas pay in the Chattanooga at 1,758-1,775 feet. Electric log from 0-1,775 feet.

MAP NUMBER-259

PERMIT NUMBER-1719

Blenda Miller & B'Jewco Drilling Co., WADDELL-WADDELL UNIT No. 1

County: Morgan

Elevation: 1,420 feet

Carter Coordinates: 2210 FNL, 1875 FWL, sec. 9, 5S-58E

Total Depth: 1,856 feet

Date: 1978

Tennessee Coordinates: 640,290N., 2,385,710E.

Production: Dry and abandoned

MAP NUMBER-260

H.P. David, et al., JOE COOPER No. 1

County: Morgan

Elevation: 1,386 feet

Carter Coordinates: 2350 FSL, 2050 FWL, sec. 9, 5S-58E

Total Depth: 850 feet

Date: 1957

Tennessee Coordinates: 638,780N., 2,385,910E.

Production: Dry and abandoned

Remarks: Sample Set No. 1044 (samples from 32-220 feet).

Map Numbers 261-264*MAP NUMBER-261*

PERMIT NUMBER-709

Deloy Miller, HERMAN DAVIS No. 1

County: Morgan*Elevation:* 1,392 feet*Carter Coordinates:* 1600 FSL, 2300 FWL, sec. 9, 5S-58E*Total Depth:* 1,840 feet*Date:* 1974*Tennessee Coordinates:* 638,040N., 2,386,170E.*Production:* Dry and abandoned*MAP NUMBER-262*

Yery, Sandy, Mong, et al., JOE COOPER No. 1

County: Morgan*Elevation:* 1,395 feet*Carter Coordinates:* 1400 FSL, 1050 FWL, sec. 9, 5S-58E*Total Depth:* 1,880 feet*Date:* 1952*Tennessee Coordinates:* 637,820N., 2,384,920E.*Production:* Dry and abandoned*Remarks:* Oil show reported at 1,530. Abandoned after initial production of 1 BOPD.*MAP NUMBER-263*

PERMIT NUMBER-1789

Petroscope, Inc., HERMAN DAVIS No. 1

County: Morgan*Elevation:* 1,395 feet*Carter Coordinates:* 1050 FSL, 450 FWL, sec. 9, 5S-58E*Total Depth:* 1,828 feet*Date:* 1978*Tennessee Coordinates:* 637,460N., 2,384,330E.*Production:* Dry and abandoned*Remarks:* Electric log from 0-1,826 feet.*MAP NUMBER-264*

PERMIT NUMBER-2620

James D. Burgin, WADDELL No. 2

County: Morgan*Elevation:* 1,320 feet*Carter Coordinates:* 1350 FNL, 840 FWL, sec. 10, 5S-58E*Total Depth:* ? feet*Date:* 1979*Tennessee Coordinates:* 637,830N., 2,389,630E.*Production:* Dry and abandoned*Remarks:* Results unreported.

Map Numbers 265-268*MAP NUMBER-265*

PERMIT NUMBER-2402

Gaspro, Inc., MARJORIE WADDELL No. 1

County: Morgan

Elevation: 1,215 feet*Carter Coordinates:* 1800 FNL, 1650 FWL, sec. 10, 5S-58E*Total Depth:* 1,758 feet*Date:* 1980*Tennessee Coordinates:* 640,760N., 2,390,400E.*Production:* Dry and abandoned*Remarks:* Gas show at 1,062-1,072 feet. Electric log from 900-1,756 feet.*MAP NUMBER-266*

PERMIT NUMBER-3485

Tennessee Land & Exploration Co., G. TURNER HOWARD No. 1

County: Morgan

Elevation: 1,248 feet*Carter Coordinates:* 2700 FNL, 300 FEL, sec. 10, 5S-58E*Total Depth:* 1,795 feet*Date:* 1980*Tennessee Coordinates:* 639,900N., 2,393,390E.*Production:* Gas*Remarks:* No initial production reported. Pay zone from a fracture in the Monteagle at 1,455 feet.*MAP NUMBER-267*

PERMIT NUMBER-6130

Glen A. Wright, TILDA MELTON No. 1

County: Morgan

Elevation: 1,347 feet*Carter Coordinates:* 2060 FNL, 2300 FWL, sec. 14, 5S-58E*Total Depth:* 1,758 feet*Date:* 1983*Tennessee Coordinates:* 634,250N., 2,376,370E.*Production:* Oil*Remarks:* Initial production of 10 BOPD from the Monteagle at 1,239, 1,256-1,282, 1,299-1,308, and 1,358-1,366 feet. Electric log from 900-1,758 feet.*MAP NUMBER-268*

PERMIT NUMBER-6264

Deep Ventures Oil & Gas Exploration, Inc., GREEN ACRES EXPLORATION No. 6

County: Morgan

Elevation: 1,392 feet*Carter Coordinates:* 20 FNL, 640 FWL, sec. 15, 5S-58E*Total Depth:* 1,460 feet*Date:* 1983*Tennessee Coordinates:* 636,200N., 2,369,770E.*Production:* Oil and gas (Shut-in)*Remarks:* Initial production of 5 BOPD from the St. Louis at 1,452-1,460 feet. Gas pays reported in the Monteagle.

Map Numbers 269-272*MAP NUMBER-269*

PERMIT NUMBER-5737

Deep Ventures Oil & Gas Exploration, Inc., GREEN ACRES EXPLORATION No. 2-A

County: Morgan*Elevation:* 1,358 feet*Carter Coordinates:* 75 FNL, 1010 FWL, sec. 15, 5S-58E*Total Depth:* 1,758 feet*Date:* 1983*Tennessee Coordinates:* 636,150N., 2,370,140E.*Production:* Oil and gas*Remarks:* Initial production of 1/4 BOPD and 40 MCF reported from a 24-hour test from the Monteagle at 1,246-1,268 feet. Electric log from 1,002-1,756 feet.*MAP NUMBER-270*

PERMIT NUMBER -6301

B & W Oil Co., YNGVE HAYLEY, ET AL, No. 1

County: Morgan*Elevation:* 1,363 feet*Carter Coordinates:* 190 FNL, 2250 FEL, sec. 15, 5S-58E*Total Depth:* 1,733 feet*Date:* 1983*Tennessee Coordinates:* 636,060N., 2,371,800E.*Production:* Oil*Remarks:* Initial production of 2 BOPD reported from a 24-hour test from the Monteagle at 1,290-1,295 feet. Electric log from 1,109-1,724 feet.*MAP NUMBER-271*

PERMIT NUMBER-1593

Cumberland Oil Prod., GREEN ACRES EXPLORATION No. 1

County: Morgan*Elevation:* 1,381 feet*Carter Coordinates:* 350 FNL, 150 FWL, sec. 15, 5S-58E*Total Depth:* ? feet*Date:* 1977*Tennessee Coordinates:* 635,870N., 2,369,280E.*Production:* Abandoned location*MAP NUMBER-272*

PERMIT NUMBER -5389

Deep Ventures Oil & Gas Exploration, Inc., GREEN ACRES EXPLORATION No. 1-A

County: Morgan*Elevation:* 1,361 feet*Carter Coordinates:* 700 FNL, 1650 FWL, sec. 15, 5S-58E*Total Depth:* 1,720 feet*Date:* 1982*Tennessee Coordinates:* 635,540N., 2,370,970E.*Production:* Oil and gas*Remarks:* Initial production of 50 BOPD and 64 MCF reported from a 24-hour test from the Monteagle at 1,226-1,246 feet. Electric log from 900-1,702 feet.

Map Numbers 273-276*MAP NUMBER-273*

PERMIT NUMBER -5390

Deep Ventures Oil & Gas Exploration, Inc., GREEN ACRES EXPLORATION No. 2

County: Morgan*Elevation:* 1,375 feet*Carter Coordinates:* 800 FNL, 350 FWL, sec. 15, 5S-58E*Total Depth:* 1,742 feet*Date:* 1982*Tennessee Coordinates:* 635,420N., 2,369,490E.*Production:* Oil and gas*Remarks:* Initial production of 5 BOPD and 54 MCF reported from a 24 hour test from the Monteagle at 1,215-1,234 and 1,294-1,304 feet. Electric log from 993-1,742 feet.*MAP NUMBER-274*

PERMIT NUMBER -5211

Stone Oil Well Completion, GREEN ACRES EXPLORATION No. 1

County: Morgan*Elevation:* 1,342 feet*Carter Coordinates:* 1580 FNL, 3490 FEL, sec. 15, 5S-58E*Total Depth:* 1,666 feet*Date:* 1982*Tennessee Coordinates:* 634,650N., 2,370,580E.*Production:* Oil and gas*Remarks:* Initial production of 50 BOPD reported from a 24-hour test from the Monteagle at 1,192-1,210 and 1,266-1,270 feet. No initial production of gas reported.*MAP NUMBER-275*

PERMIT NUMBER-4021

Hudson Resources, KENNEDY No. 1

County: Morgan*Elevation:* 1,342 feet*Carter Coordinates:* 1775 FNL, 1600 FEL, sec. 15, 5S-58E*Total Depth:* 1,407 feet*Date:* 1981*Tennessee Coordinates:* 634,480N., 2,372,470E.*Production:* Oil*Remarks:* Initial production of 12 BOPD reported from a 24-hour test from the Monteagle at 1,240-1,264 feet. Electric log from 850-1,406 feet.*MAP NUMBER-276*

PERMIT NUMBER-5914

Glen A. Wright, STANLEY BATES, ET AL., No. 3

County: Morgan*Elevation:* 1,356 feet*Carter Coordinates:* 2650 FNL, 1950 FEL, sec. 15, 5S-58E*Total Depth:* 1,266 feet*Date:* 1983*Tennessee Coordinates:* 633,600N., 2,372,130E.*Production:* Oil*Remarks:* Initial production of 4 BOPD from the Monteagle at 1,227-1,252 feet. Electric log from 966-1,264 feet.

Map Numbers 277-278

MAP NUMBER-277

PERMIT NUMBER-2699

Tennessee Land & Exploration Co., HUGH D. FAUST No. 1

County: Morgan

Elevation: 1,210 feet

Carter Coordinates: 1440 FNL, 600 FWL, sec. 5, 5S-59E

Total Depth: 1,924 feet

Date: 1980

Tennessee Coordinates: 647,240N., 2,394,190E.

Production: Gas

Remarks: IP of 6 MCF reported from a 24-hour test from the Monteagle at 1,296-1,302 and 1,328-1,338 feet. Electric log from 0-1,923 feet.

MAP NUMBER-278

PERMIT NUMBER-872

Cumberland Resources Corp., DR. G. TURNER HOWARD No. 2-B

County: Morgan

Elevation: 1,400 feet

Carter Coordinates: 625 FSL, 700 FWL, sec. 6, 5S-59E

Total Depth: 1,885 feet

Date: 1975

Tennessee Coordinates: 643,240N., 2,394,340E.

Production: Dry and abandoned

Remarks: Oil show at 1,808-1,822 feet in the Fort Payne. Gas show in the Monteagle at 1,416-1,428 feet. Electric log from 1,100-1,882 feet. Sample Set No. 1948 (samples from 500-1,885 feet).

Map Numbers 279-280

Map Number-279 Strip mine (Tennessee Coordinates 652,000N., 2,402,900E.). Coal was mined in 1978 by the A & W Auger Corporation. The mine is 4,700 feet (1,430m) SSW of the lookout tower on Pilot Mountain. It is 1,150 feet long, as much as 850 feet wide (350x260m), and 15 inches (38cm) of coal was reported to have been mined here.

Map Number-280 Strip mine (Tennessee Coordinates 642,000N., 2,387,100E.). About 6,000 feet (1,800m) north of Oak Grove Church; no permit can be found. It is about 2,000 feet long by as much as 200 feet wide, and it has a highwall 30 feet high (600x60x9m).

Map Numbers 281-285

The first three quarries described below are clustered about 2 miles (3.2k) WSW of the school in Sunbright.

Map Number-281. This quarry (Tennessee Coordinates 674,250N., 2,382,200E.) is about 600 feet (180m) long, as much as 100 feet (30m) wide, and has a face as much as 10 feet (3m) high.

Map Number-282. This quarry (Tennessee Coordinates 674,000N., 2,382,300E.) is 250 feet (76m) long, 200 feet (60m) wide, and has a face as much as 10 feet (3m) high.

Map Number-283. This quarry (Tennessee Coordinates 673,950N., 2,382,500E.) is 540 feet long. 80 feet

wide, and has a 15-foot face (165x24x5m).

Map Number-284. This small quarry (Tennessee Coordinates 651,350N., 2,379,700E.) is 2,300 feet (700m) NNW of Davis Cemetery. It has dimensions of 100 feet by 60 feet by 5 feet (30x18x1.5m).

Map Number-285. This quarry (Tennessee Coordinates 633,640N., 2,934,850E.) is 4,900 feet (1,500m) WSW of the pumping station on Rock Creek. Its dimensions are 120 by 50 by 5 feet (37x15x1.5m).

Extracted from: ([Pilot Mountain Quadrangle](#)).

Well Logs

Available well log data from the Pilot Mountain Quadrangle Mineral Resources Summary. Depths are in feet.

All well logs presented below correspond to a locality in the GRI digital geologic-GIS data, in the Mine Point Features (obedmin) feature class/data layer, with the same map number.

Map Number 52 Well Log

Well log associated with [Map Number 52](#) from the Pilot Mountain Mineral Resources Summary.

20-30 Shale, dark gray; some silty; traces of carbonaceous streaks.

30-50 Shale, grayish-black, some silty; traces of carbonaceous streaks.

50-70 Shale, same as above, except dark-gray color.

70-90 Shale, same as above, but slightly more silty.

90-110 Sandstone, light-olive to olive-gray, fine-grained; specks of reddish (iron) particles and black particles; some staining (approx. 70%); shale, color ranges from predominantly grayish-black to medium dark-gray; some darker carbonaceous streaks (approx.30%).

110-120 Sandstone, light olive-gray, fine-grained; some iron cementation and staining (approx.80%); shale, dark-gray to grayish-black; trace of carbonaceous streaks (approx.20%).

120-130 Sandstone, light olive-gray, predominantly fine-grained, subrounded; specks of dark shaly material; iron staining, w hite unreactive particles.

130-140 Sandstone, same as above; fine to medium-grained.

140-150 Sandstone, olive-gray, fine- to predominant medium grained, subangular to subrounded; greater percentage of dark particles and iron, possibly conglomeratic.

150-160 Sandstone, olive-gray, medium- to coarse-grained, subrounded to subangular; streaks of iron-staining; some trace light and dark particles; some large coal fragments present.

160-170 Shale, dark-gray, some silty; traces of carbonaceous particles; sandstone (60%), light olive-gray to olive-gray, medium-grained, subangular, w ell-cemented; trace of dark silty particles; iron cementation and staining; smaller amount of coal fragments present.

170-180 Sandstone, light olive-gray, fine- to medium-grained, subangular to angular, fairly uniform, w ell-cemented; some

large quartz fragments indicate conglomerate; shale, dark-gray, some silty with carbonaceous streaks; some siderite particles and coal fragments; some iron cementation and staining.

180-190 Sandstone, same as above, but no siderite or coal present-190-200 Sandstone, light olive-gray, fine- to medium-grained, subangular to subrounded, fairly well-cemented; possibly conglomeratic (approx.80%); shale, dark-gray, some slightly silty (20%); some iron cementation and staining.

200-220 Sandstone, light olive-gray, fine- to medium-grained, subrounded, fairly well-cemented; some dark-gray shale particles; trace of staining and cementation.

220-230 Sandstone, same as above, but greater percentage of sandstone present-230-240 Sandstone, light olive-gray, fine-grained, loosely consolidated, subangular to subrounded; small amount of dark, carbonaceous particles; iron-staining and cementation; trace of white particles; very indurated.

240-250 Sandstone, light olive-gray, fine- to medium-grained, subrounded, well-cemented; some dark-gray shale particles; trace of iron-staining, cementation, and pyrite-staining.

250-260 Shale, olive-gray to dark-gray; silty; trace of siderite particles interbedded in shale-260-265 Siltstone, olive-gray to dark greenish-gray; appears siliceous; some limonite or siderite present.

265-285 Sandstone, light olive-gray, very fine- to fine-grained, subangular to subrounded, well-cemented, well-sorted; specks of carbonaceous material associated with sandstone (90%); siltstone, dark greenish-gray; appears siliceous; some flakes of mica associated with siltstone (60%); traces of dark carbonaceous material; some iron staining.

285-295 Sandstone, same as above, with less percentage of siltstone.

295-320 Sandstone, same as above, with minor amounts of siltstone, siderite, coal fragments, iron-staining, and carbonaceous materials.

320-330 Sandstone, same as above; some trace of mica flakes associated with siltstone.

330-340 Sandstone, same as above, with less secondary material.

340-350 Siltstone to very fine sandstone, light olive-gray, very indurated, very well-cemented; traces of carbonaceous material (75%); shale, dark-gray, carbonaceous, interbedded lenses.

350-360 Sandstone, olive-gray, very fine-grained, subangular to subrounded, well-cemented; specks of carbonaceous material and iron-staining (approx.90%); siltstone (10%), dark-gray, trace carbonaceous.

360-370 Sandstone, same as above.

370-380 Shale, dark-gray, slightly silty (approx.90%); sandstone, light olive-gray to olive-gray, very fine-grained, slightly conglomeratic; some iron staining.

380-390 Sandstone, olive-gray, very fine- to fine-grained, subrounded, not very indurated (80%); shale, dark-gray, slightly silty; some siderite, iron-staining, and cementation.

390-400 Sandstone conglomerate, olive-gray, very fine- to fine grained, subangular, well-cemented, some dark accessory minerals (33%); shale, dark-gray to grayish-black; some iron-staining, cementation, siderite particles (67%).

400-410 Sandstone conglomerate, light olive-gray, fine- to medium-grained, subangular, fairly well cemented; some iron-staining and cementation (approx.90%); shale, dark-gray; some mica and carbonaceous accessory material.

410-450 Sandstone conglomerate, light olive-gray, medium- to coarse-grained, subangular, loosely consolidated; traces of dark-gray shale; siderite particles; iron cemented sand grains; feldspar fragments (white).

450-460 Sandstone, same as above, but does not appear conglomeratic and is more loosely cemented.

460-480 Sandstone conglomerate.

light olive-gray, fine- to medium- grained, subangular, fairly well-cemented; minor amounts of dark-gray shale; iron cementation and staining; carbonaceous material interbedded in sand grains; feldspar fragments.

480-500 Sandstone conglomerate, same as above, with coal fragments.

500-510 Sandstone conglomerate, same as above, but less conglomeratic; no real coal fragments.

510-520 Sandstone conglomerate, same as above, but less secondary material.

520-530 Sandstone conglomerate, same as above, but more dark carbonaceous material.

530-540 Sandstone conglomerate, same as above, but more solidly cemented.

540-550 Sandstone, slightly conglomeratic, olive-gray, fine- to medium-grained, subangular to subrounded, fairly well-cemented; some iron staining and cementation (approx- 60%); shale, dark-gray, slightly silty, with streaks of darker carbonaceous material (40%).

550-560 Sandstone, olive-gray, some moderate yellowish-brown, fine-grained, subangular; some fragments darker-gray, with mica flakes and carbonaceous material; some silty streaks, in olive-gray sandstone.

560-570 Sandstone, light olive-gray to olive-gray, fine-grained, subangular, well-cemented; some dark-gray shale interbedded with the sandstone; some bright shiny flakes in the shale; some iron-staining and cementation.

570-580 Sandstone, same as above, but less shale.

580-590 Sandstone, same as above but conglomeratic-appearing; some dark carbonaceous material interbedded with sandstone, some sideritic particles.

590-600 Sandstone, same as above; some dark-gray shale, not well cemented.

600-610 Sandstone conglomerate, same as above; no apparent interbedded carbonaceous material; loose grains.

610-620 Sandstone conglomerate, with some interbedded carbonaceous material.

620-630 Sandstone conglomerate, same as above, but coarse grained; some calcite crystals.

630-640 Sandstone conglomerate, same as above; limestone appears darker-gray; some dark, carbonaceous, shaly fragments.

640-650 Sandstone conglomerate, trace of calcite.

650-660 Sandstone conglomerate, light olive-gray, fine-grained; calcareous cement, subangular, well-cemented; small amount of dark-gray, silty shale; iron cementation and staining.

660-670 Sandstone conglomerate, light olive-gray, fine- to medium-grained, slightly, calcareous, subangular, loosely consolidated; small amount of dark-gray shale; iron cementation and staining.

670-680 Sandstone conglomerate, light olive-gray, medium- to coarse-grained; traces of slightly calcareous material. Subangular to subrounded, loosely consolidated; small amount of dark, silty shale; trace of iron-staining and cementation.

680-690 Sandstone conglomerate, same as above, but color altered due to oil-staining; some siliceous, silty material.

690-700 Shale, dark-gray, slightly silty, slightly oolitic; small amount of grayish-brown sideritic material; some staining.

700-720 Shale, dark-gray to grayish-black; grayish-black appears very carbonaceous; no appreciable accessory

fragments.

720-730 Limestone, brownish-gray, light olive-gray, brownish black, crystalline; some oolitic; some siltstone, dark greenish-gray, brownish-black; smaller amount of dark-gray shale and a few coal fragments.

730-740 Limestone, good mixture of grayish-black, olive-gray, some light olive-gray, and brownish-black; slightly oolitic; some appears more granular than crystalline.

740-750 Limestone, primarily olive-gray, some olive-black, smaller amount dark greenish-gray; crystalline, slightly oolitic.

750-760 Shale, primarily reddish-brown, some dark-gray, some olive-black, silty; chert, olive-gray, reddish-brown, dark greenish-gray, shaly.

760-770 Shale, reddish-brown, slightly dolomitic, slightly silty (45%); dolomite, greenish-gray, thin interbedded with reddish-brown shale (approx. 45%); some shale, very clay-like, slightly calcareous.

770-790 Siltstone, olive-gray, trace slightly calcareous (approx. 90%); shale, reddish-brown, slightly calcareous, silty; dolomitic shale, olive-gray; shale and dolomitic shale (approx. 10%).

790-810 Shale, dark greenish-gray (70%); reddish-brown, some slightly calcareous (25%); olive-gray, slightly calcareous (approx. 5%).

810-820 Shale, dark-gray, reddish-brown (approx. 50-50); smaller amount of dark greenish-gray dolomite.

820-830 Shale, dark-gray (70%), reddish-brown (approx. 20%); some dolomite, light olive-gray (approx. 10%).

830-850 Shale, same as above, with less amount of dolomite.

850-860 Shale, same as above, with less reddish-brown shale; some dark-gray limestone fragments.

860-870 Shale, dark greenish-gray (approx. 75%); reddish-brown (10%); limestone, dark-gray (approx. 15%); slightly crystalline.

870-880 Limestone, brownish-black; some very crystalline.

880-900 Shale, dark reddish-brown, slightly silty, very slightly calcareous (approx. 80%); dark-gray, slightly silty, calcareous (approx. 10%); limestone, brownish-gray, slightly crystalline, some oolitic (approx. 10%); small amount of sandstone, but not significant.

900-910 Shale, dark reddish-brown, some olive-gray, slightly silty, slightly calcareous (approx. 33%); limestone, olive gray, granular, fossiliferous, some lighter and more crystalline (approx. 67%); stalactitic-like marks on red shale.

910-920 Shale, dark reddish-brown and dark-gray, slightly silty, slightly calcareous; limestone, olive-gray to light olive gray, slightly crystalline, fossiliferous, oolitic.

920-930 Shale, olive-gray, calcareous (approx. 85%); reddish brown, slightly silty, calcareous (approx. 5%); limestone, olive-gray, slightly fossiliferous, crystalline (approx. 10%).

930-940 Shale, reddish-brown to dark-gray; dark-gray slightly silty and slightly calcareous (85%); limestone, olive gray, some with reddish streaks, finely crystalline (approx. 15%); small amount of very hard iron-cemented particles and particles of pyrite.

940-950 Shale, predominantly dark-gray, some reddish-brown, calcareous; siltstone, grayish-black, slightly calcareous (relatively small amount present).

950-960 Sample missing.

960-970 Shale, dark-gray to reddish-brown, but more dark-gray (approx. 50%); limestone, olive-gray to olive-black, slightly

crystalline, some fossiliferous.

Map Number 81 Well Log

Well log associated with [Map Number 81](#) from the Pilot Mountain Mineral Resources Summary.

0-10 Sandstone, white to yellow, very fine-grained, quartzose; traces of carbonaceous material, mica, and siderite.

10-20 Sandstone, white, fine-grained, traces of siderite and carbonaceous material.

20-30 Sandstone, white, fine-grained, subangular to subrounded, trace of siderite; some iron-staining and weathering; coal fragments with quartz partings.

30-40 Sandstone, white, fine-grained, quartzose, subangular to subrounded; trace of siderite, iron-staining, coal fragments present.

40-50 Sandstone, light-gray, fine-grained, subangular to subrounded; iron-stained; trace of dark-gray shale.

50-60 Shale, medium-gray, interbedded with light-gray siltstone containing carbonaceous particles.

60-70 Shale, medium-gray, same as above with some light-gray siltstone present.

70-90 Shale, medium-gray to light-gray; traces of mica and carbonaceous material; trace of sandstone, white, very fine-grained, iron-stained, 90-100 Shale, same as above, but less sandstone present.

100-110 Shale, same as above, but grading more silty.

110-120 Siltstone, light-gray, with very fine-grained sandstone, very siliceous, lesser amount of dark-gray shale; traces of coal fragments, some feldspar present.

120-130 Shale, medium-gray; lesser amount of light-gray siltstone; trace of organic material; iron-staining.

130-140 Sandstone, white to translucent, fine-grained; traces of dark-gray shale; some coal fragments present.

140-150 Sandstone, white to translucent, fine- to medium-grained, subangular to subrounded, iron-stained; some white feldspar weathered to clay.

150-160 Sandstone, white to translucent, medium-gray, subrounded to rounded; shale fragments, medium dark gray; traces of coal fragments; iron-staining and weathering.

160-170 Sandstone conglomerate, very light-gray to medium gray; grains more angular than above; some weathering; dark-gray siltstone present.

170-180 Sandstone conglomerate, same as above, but with a larger siltstone fragment interbedded with coal and mica.

180-190 Shale and siltstone, medium-gray; lesser amount of conglomeratic sandstone; some iron-staining and weathering.

190-200 Siltstone and shale, medium-gray to medium dark-gray; sandstone, very light-gray, very fine-grained.

200-210 Sandstone, very light-gray, fine- to medium-grained (70% of sample), very siliceous, subangular to subrounded, trace of iron-staining; dark-gray shale (30% of sample).

210-230 Sandstone, white, medium-grained, subrounded, iron staining; shale, dark gray, with some coal fragments.

230-240 Conglomeratic sandstone, white, medium- to coarse grained, quartzose, subangular, iron-stained; siltstone and shale, dark-gray; trace of coal associated with shale.

60-70 Shale, medium-gray, same as above with some light-gray siltstone present.

70-90 Shale, medium-gray to light-gray; traces of mica and carbonaceous material; trace of sandstone, white, very fine-grained, iron-stained.

90-100 Shale, same as above, but less sandstone present.

100-110 Shale, same as above, but grading more silty.

110-120 Siltstone, light-gray, with very fine-grained sandstone, very siliceous, lesser amount of dark-gray shale: traces of coal fragments, some feldspar present.

120-130 Shale, medium-gray; lesser amount of light-gray siltstone; trace of organic material; iron-staining.

130-140 Sandstone, white to translucent, fine-grained; traces of dark-gray shale; some coal fragments present.

140-150 Sandstone, white to translucent, fine- to medium-grained, subangular to subrounded, iron-stained; some white feldspar weathered to clay.

150-160 Sandstone, white to translucent, medium-gray, subrounded to rounded; shale fragments, medium dark gray: traces of coal fragments: iron-staining and weathering.

160-170 Sandstone conglomerate, very light-gray to medium gray; grains more angular than above; some weathering; dark-gray siltstone present.

170-180 Sandstone conglomerate, same as above, but with a larger siltstone fragment interbedded with coal and mica.

180-190 Shale and siltstone, medium-gray; lesser amount of conglomeratic sandstone; some iron-staining and weathering.

190-200 Siltstone and shale, medium-gray to medium dark-gray; sandstone, very light-gray, very fine-grained.

200-210 Sandstone, very light-gray, fine- to medium-grained (70% of sample), very siliceous, subangular to subrounded, trace of iron-staining; dark-gray shale (30% of sample).

210-230 Sandstone, white, medium-grained, subrounded, iron staining; shale, dark gray, with some coal fragments.

230-240 Conglomeratic sandstone, white, medium- to coarse grained, quartzose, subangular, iron-stained; siltstone and shale, dark-gray; trace of coal associated with shale.

240-250 Conglomeratic sandstone, white, two distinct grain sizes, fine- and medium-grained, subangular; trace of dark gray shale; iron cementation and staining.

250-270 Conglomeratic sandstone, white, medium- to coarse grained, subangular; iron-stained; siltstone and shale, dark-gray; trace of coal; some weathered feldspar fragments.

270-280 Conglomeratic sandstone, light yellowish-gray, medium to coarse-grained, quartzose; siltstone and shale, dark gray: some coal fragments and iron-staining.

280-310 Siltstone (75% of sample), medium dark-gray; trace of coal in upper part; sandstone (25% of sample), very light gray, very fine-grained, with some coarse-grained in lower part.

310-320 Siltstone, light-gray, quartzose, iron-stained, trace of carbonaceous material.

320-330 Siltstone and shale (50:50), dark-gray; trace of very dark gray shale, iron-stained.

330-380 Siltstone, light-gray; some iron cementation; dark-gray shale; traces of carbonaceous material and siderite particles;

siltstone grades toward bottom into very fine- to fine-grained, light-gray, quartzose sandstone.

380-400 Sandstone, light-gray, very fine-grained; lesser amount of medium dark-gray siltstone; trace of coal and shale, iron-stained and cemented; no coal in lower part.

400-420 Sandstone, white, fine-grained; equal amount of siltstone, medium-gray; some iron-staining and cementation.

420-430 Shale, medium-gray; equal amount of light-gray siltstone; lesser amount of sandstone, white, very fine-grained; light-gray calcite particles; some iron-staining.

430-440 Sandstone, white, fine-grained, micaceous; lesser amounts of shale, dark-gray; siltstone, light-gray, associated with coal.

440-450 Shale, dark-gray; lesser amount of siltstone, light-gray; trace of coal; calcite crystals, very indurated, hard, white particles; iron-staining.

450-470 Shale, medium-gray; less siltstone, medium-gray; trace of coal fragments and calcite crystals; iron-staining and cementation.

470-500 Sandstone, white, fine-grained (50%); shale, dark-gray; trace siltstone, calcite crystals, carbonaceous material; iron-staining; sandstone becoming predominant toward bottom.

500-570 Conglomeratic sandstone, white, medium to coarse-grained; traces of gray shale, siltstone, and some calcite crystals; iron-staining; sand becoming coarser toward bottom.

570-580 Conglomeratic sandstone, same as above but with shale, medium dark-gray; siltstone, medium-gray; trace of calcite.

580-600 Conglomeratic sandstone, white to light-gray, fine to medium-grained, subangular to subrounded; minor amounts of brownish-black shale.

600-630 Conglomeratic sandstone, light-gray, very fine to fine-grained; small amounts of brownish-black shale.

630-640 Conglomeratic sandstone, white, fine to medium-grained, subangular to subrounded; quartzose; very minor amount of carbonaceous and shaly particles.

640-650 Conglomeratic sandstone, very light-gray to light-gray, very fine to fine-grained; small amount of medium dark-gray siltstone.

650-660 Conglomeratic sandstone, white to light-gray, fine-grained, subangular; minor amounts of darker particles; some siltstone, medium dark-gray; some iron-staining and possible pyrite.

660-670 Conglomeratic sandstone, white to light-gray, fine to coarse-grained, subangular; dark-gray shale; some iron-staining; trace of pyrite.

670-680 Conglomeratic sandstone, white to light-gray, sub-angular, quartzose; medium dark-gray shale; some light-gray particles reactant to HCl; some iron-staining.

680-700 Records missing.

700-710 Shale, medium dark-gray; sandstone, possibly conglomeratic; some iron-staining and cementation.

710-730 Siltstone, medium dark-gray to medium light-gray; very fine-grained sandstone; iron-staining.

730-740 Siltstone, light to medium light-gray; some darker, soft carbonaceous material; iron-staining; pyrite or siderite.

740-750 Siltstone, light to medium light-gray; some thin, shaly to carbonaceous, dark-gray partings, possibly coal; some reddish-brown to dark-brown iron-staining.

750-760 Siltstone, medium light-gray; sandstone, light-gray, very fine-grained; some minor amounts of medium dark-gray shale; iron-staining.

760-770 Sandstone, very light to light-gray, very fine-grained; siltstone and dark-gray shale equal in amount with sandstone; traces of carbonaceous matter; iron-staining.

770-790 Limestone, medium to medium dark-gray, some light olive-gray, very finely crystalline; sandstone, light-gray, very fine to fine-grained; minor amount of brownish-black siltstone; some quartz crystals in lower part.

790-800 Sandstone, very light to light-gray, fine-grained, quartzose; shale, silty, dark-gray; some medium-gray limestone, finely crystalline; tan calcareous claystone; iron-staining.

800-810 Shale, maroon to brownish-gray, medium dark-gray; minor amount of chert, very light-gray to creamy; trace of calcite and carbonaceous material.

810-820 Dolomite, medium-gray to medium dark-gray, crystalline; minor amount of shale, brownish-gray to maroon; lesser amount of chert; iron-staining.

820-830 Dolomite, medium to medium light-gray, crystalline; limestone, medium-gray in minor quantity; very minor amount of brownish-gray to dark-maroon shale.

830-840 Sandstone, light-gray, very fine-grained; minor amount of siltstone, medium to medium light-gray, very minor amount of chert and maroon shale.

840-850 Sandstone, light-gray, very fine-grained; dolomite, medium dark-gray; shale, maroon; trace of light-gray chert.

850-860 Shale, medium dark- to brownish-gray; dolomite, light-gray; some calcitic, cemented, oxidized fragments.

860-870 Shale, medium-gray, medium bluish-gray and brownish-gray; dolomite, olive-gray and light-gray, crystalline.

870-880 Shale, dark to medium-gray, silty, trace of dark greenish-gray and brownish-gray to maroon; dolomite, medium dark-gray, crystalline.

880-890 Siltstone, medium dark-gray, calcareous; limestone, medium-gray, with greenish tint, crystalline; minor amount of dolomite, medium dark-gray; trace of maroon to brownish-gray shale.

890-900 Limestone, medium dark to brownish-gray, fine to medium-grained; some calcite; trace of maroon shale.

900-920 Shale, reddish-brown; minor amount of medium dark-gray shale; trace of calcite fragments cemented with reddish-brown argillaceous material.

920-930 Shale, reddish-brown to medium dark-gray.

930-940 Shale, reddish-brown to medium dark-gray; limestone, medium to dark-gray, fine-grained; pyrite associated with calcite cement.

940-950 Shale, reddish-brown (maroon) to medium dark-gray, silty; minor amount of dolomite, brownish to olive-gray, very fine-grained.

950-960 Siltstone, medium light-gray; shale, reddish-brown to medium dark-gray; dolomite, medium-gray, fine-grained; limestone, very light-gray, very fine-grained.

960-970 Limestone, light to medium light-gray, fine-grained, fossil-fragmental; shale, reddish-brown to medium dark-gray; trace of medium-gray siltstone.

970-980 Limestone, same as above, but with minor amount of dolomite and trace of pyrite.

- 980-990 Limestone, medium to medium dark-gray, very fine-grained, some light-gray; trace of maroon shale.
- 990-1000 Shale, light medium-gray, trace of reddish-brown.
- 1000-1010 Dolomite, medium to brownish-gray; some pyrite; minor amount of dark-gray shale.
- 1010-1020 Limestone, medium dark-gray, very fine-grained to fine-grained; trace of reddish-brown to dark-gray silty shale.
- 1020-1030 Limestone, medium dark-gray, fine to medium-grained, fossil-fragmental, crystalline.
- 1030-1040 Limestone, medium dark-gray, some fine to medium-grained, some crystalline; shale, dark-gray, fossiliferous, dolomitic.
- 1040-1070 Limestone, very light to medium dark-gray, fine to medium-grained, fossil-fragmental; shale, medium dark-gray to reddish-brown in smaller amounts.
- 1070-1090 Limestone, medium-gray, fine to medium-grained, more fossiliferous than above; trace of medium dark-gray shale; iron-staining.
- 1090-1100 Limestone, buff to medium-gray, fine to medium-grained; some coarsely crystalline with prominent cleavage faces; some oolites tightly cemented; trace of reddish-brown, fossil-fragmental shale.
- 1100-1110 Limestone, medium light to medium dark-gray, very fine-grained to finely crystalline; a lesser amount is coarser.
- 1110-1120 Limestone, very light to medium light-gray, fine to medium-grained; some crystalline calcite, fossil-fragmental; trace of medium dark-gray calcareous shale.
- 1120-1130 Limestone, very light to medium dark-gray (70:30); crystalline and fossil-fragmental; minor amount of dark-gray, slightly calcareous, silty shale.
- 1130-1140 Limestone, very light to medium dark-gray (50:50); minor amount of silty shale, and very minor amount of maroon shale.
- 1140-1150 Limestone, light to medium dark-gray (40:60); some silty, calcareous shale; trace of maroon shale; finely crystalline calcite; minor amount of fossils.
- 1150-1160 Limestone, very light to medium-gray (10:90), finely crystalline; minor amount of dark-gray, silty, calcareous shale.
- 1160-1180 Limestone, very light to medium dark-gray (10:90), finely crystalline; minor amount chalky, calcareous, cemented fragments; traces of dark and reddish-brown shale.
- 1180-1190 Limestone, very light to medium dark-gray (40:60), fine to medium-grained; oolitic, fossil-fragmental, more coarsely grained than interval above.
- 1190-1210 Limestone, very light to medium dark-gray (40:60); oolitic, fossil-fragmental, finely crystalline; minor amount of darker calcite cemented with light calcite cement; trace of dark-gray shale; oxidation.
- 1210-1230 Limestone, very light to medium dark-gray (50:50), finely crystalline to crystalline; some calcite-cemented white chalk; traces of dark-gray and reddish-brown shale.
- 1230-1240 Limestone, medium dark to olive-gray; finely crystalline; uniform.
- 1240-1250 Limestone, light-gray with minor amount of dark-gray; oolitic, fossil-fragmental, finely crystalline; trace dark-gray shale.
- 1250-1270 Limestone, very light to medium brownish-gray (10:90), finely crystalline and fragmental, tightly cemented; traces

of dark-gray shale.

1270-1277 Limestone, very light to light-gray; finely crystalline, oolitic, tightly cemented; trace of brownish-black to translucent chert fragments; trace of dark-gray and reddish-brown shale.

Map Number 207 Well Log

Well log associated with [Map Number 207](#) from the Pilot Mountain Mineral Resources Summary.

Logged wet

0-10 Samples missing.

10-20 Siltstone, dark-gray, fairly uniform; specks and streaks of black carbonaceous material; trace of sandstone, yellowish-brown, fine-grained.

20-30 Siltstone, three shades: dark-gray silty shale (75%), medium dark-gray with brown specks (15%), grayish-black (10%); sandstone, lesser amount (25% of total sample), brownish-yellow and fine-grained; trace of dark, carbonaceous material.

30-40 Sandstone, light-gray, light-yellow, yellowish-brown to reddish-brown, very fine-grained, streaks of iron-cemented material, some specks of dark, carbonaceous material (85%); siltstone, medium-gray, very loosely consolidated (10%), medium light-gray clay, trace very light-gray; some iron-staining.

40-50 Sandstone, same as above, but sandstone predominantly yellowish-brown.

50-60 Siltstone, dark-gray (predominantly), lesser amount olive-gray, trace medium-gray; sandstone, brownish-gray, olive-gray to dark reddish-brown (40%), very fine-grained; trace of carbonaceous material, staining.

60-70 Samples missing.

70-120 Shale, silty, dark-gray, specks of carbonaceous material; sandstone, trace of medium to brownish-gray, very fine-grained.

120-140 Shale, about 50:50 medium dark to dark-gray.

140-220 Shale, same as above, but almost entirely medium dark-gray.

220-230 Shale, silty, medium dark-gray (fairly uniform); some carbonaceous specks.

230-240 Shale, same as above; trace of light-gray silty shale.

240-250 Shale, silty, medium dark-gray (50%), dark-gray (50%) approximately; traces of carbonaceous and micaceous flakes associated with the dark-gray; trace of iron cementation.

250-260 Shale, same as above, but more medium dark-gray (90%).

260-270 Shale, grayish-black (75%), medium dark-gray (25%); trace of cementation; carbonaceous specks.

270-280 Shale, dark-gray (50%), medium dark-gray (50%); trace of carbonaceous flakes.

280-400 Shale, with dark-gray specks of carbonaceous material; trace of staining.

400-410 Siltstone, grayish-black, darker carbonaceous specks (75%), dark-gray (15%); sandstone, medium dark-gray, very fine-grained, trace of dark specks (10%); trace of iron-staining and cementation.

410-420 Siltstone, olive-black with darker carbonaceous specks (60%); shale, olive-gray, olive-black, and grayish-black (25%); sandstone, brownish-yellow, very fine-grained to fine-grained, subrounded; some iron cementation and staining (15%); trace of medium-gray sandstone.

420-430 Sandstone, medium dark-gray, fine-grained, brownish-yellow, subrounded, very fine-grained (60%); shale, dark-gray, grayish-black, dark greenish-gray (40%); trace of iron-staining and cementation; some pyrite crystals- 430-440 Sandstone, medium dark-gray, very fine-grained to fine-grained, subangular to subrounded; dark carbonaceous particles; small amount of brownish-yellow sandstone, fine-grained; some iron-staining and cementation; shale, dark-gray in trace amounts; trace yellowish chert particles.

440-450 Sandstone, medium dark-gray, fine- to medium-grained; less amount dark-gray shale; some coal fragments; trace mica flakes.

450-460 Sandstone, same as above; dark-gray and grayish-black shale.

460-470 Sandstone, olive-gray, fine-grained, subrounded, very loosely consolidated; trace of coal fragments and iron-staining; particles fairly uniform.

470-490 Sandstone, same as above; some larger dark-gray shale particles.

490-520 Shale, silty, dark-gray, fairly uniform (trace of brownish-gray shale); sandstone, small amount olive-gray; trace of carbonaceous material.

520-530 Shale, same as above; some light-gray shale with iron cementation.

530-540 Shale, same as above, but with sand turning silty.

540-560 Shale, grayish-black (predominantly), lesser amount of medium-gray to light-gray; siltstone, medium dark-gray, with dark carbonaceous specks.

560-570 Shale, grayish-black (same as above); some small, rounded shale fragments interbedded in light-gray silty matrix; greater amount of light-gray shale than in intervals above.

570-580 Shale, same as above; light-gray siltstone (about 25%).

580-590 Shale, same as above; sandstone, light-gray, yellowish-brown (15-20%); staining.

590-630 Shale, dark-gray; lesser amount light-gray siltstone and sandstone visible; shale to siltstone ratio 95:5.

630-640 Shale, dark-gray (60%); sandstone, light- gray to medium light-gray, subangular; some iron-staining.

640-650 Shale, grayish-black (70%); sandstone, olive-gray, very fine to fine-grained, subangular, (25%); siltstone, dark-gray; trace of mica flakes (5%).

650-660 Sandstone, light-gray, fine to medium-grained, subangular to subrounded (60%); shale, dark-gray and medium dark-gray (40%); some iron-staining and cementation.

660-670 Sandstone, same as above; trace of darker reddish-brown sandstone.

670-680 Shale (50%) and sandstone (50%), same as above.

680-700 Shale, silty, grayish-black to black, some dark-gray (75%); silty sand, olive-gray (25%); trace of iron-staining.

700-710 Shale, dark-gray, light flakes associated with it (50%); siltstone medium-gray to olive-gray (50%).

710-730 Shale, predominantly grayish-black; some dark-gray (80%); siltstone, fine to very fine silty sand, olive-gray (20%);

some iron-staining and cementation.

730-740 Shale, grayish-black, uniform; trace of lighter-gray siltstone.

740-750 Shale, grayish-black (50%), dark-gray (25%), silty sand-stone, light olive-gray, very fine-grained (15%); siltstone, olive-gray (10%).

750-760 Sandstone, olive-gray, very fine to fine-grained, subrounded (90%); shale, dark-gray to grayish-black (10%); some iron-staining and cementation.

760-790 Sandstone, light olive-gray, very fine-grained, subrounded; trace of grayish-black specks of shale; trace of iron-staining.

790-800 Shale, dark-gray to grayish-black (60%); sandstone, olive-gray, fine-grained, subrounded to rounded (40%); trace of very white, soft particles, possibly gypsum or anhydrite.

800-810 Shale, grayish-black (50%); sandstone, light olive-gray, fine-grained, subrounded, fairly uniform; trace of bluish-white specks of possibly gypsum or anhydrite; some iron-staining and oxidation.

810-820 Shale, silty, grayish-black; sandstone, very small amount of light olive-gray, fine-grained; trace of iron-staining and cementation.

820-830 Sandstone, olive-gray, very fine-grained to fine-grained, subangular to subrounded (75%); shale, grayish-black (25%); trace of iron-staining and cementation; trace of white specks, possibly gypsum or anhydrite.

830-840 Sandstone, two distinct types: (1) light brown to moderate yellowish-brown, very fine-grained to fine-grained, subangular to subrounded (40%); (2) light olive-gray, fine-grained, subrounded (approx. 30%); shale, grayish-black, slightly silty (approx. 30%); trace of iron-staining and cementation; trace of bluish-white specks, possibly gypsum, etc.

840-850 Sandstone, light olive-gray to olive-gray, fine-grained, subrounded (55%); shale, grayish-black (approx. 45%); trace of staining and cementation.

850-860 Shale, grayish-black (85%); sandstone, light olive-gray, very fine-grained to fine-grained (15%).

860-870 Shale, same as above, but much more sandy.

870-880 Shale, same as above; some iron-staining and cementation.

880-890 Shale, same as above; two distinct shades dark-gray, and a much lesser amount of grayish-black.

890-900 Shale, same as above; sandstone predominates (approx. 60%).

900-920 Sandstone, light olive-gray, fine-grained, subrounded to rounded, (90-95%); shale, grayish-black (approx. 5-10%); some iron-staining and cementation; some white specks.

920-940 Sandstone same as above; shale percentage greater than above.

940-950 Sandstone, same as above; more shale than above.

950-960 Sandstone, same as above; staining; possibly coal fragments.

960-970 Sandstone, same as above; less shale and very definite coal fragments; some staining and white specks.

907-1000 Sandstone, predominantly same as above; coal fragments; trace of grayish-black shale.

1000-1020 Sandstone same as above, very fine-grained sand.

1020-1030 Sandstone, same as above; some larger fragments of grayish-black shale.

1030-1050 Sandstone, same as above, but less staining.

1050-1060 Sandstone, same as above, but color is darker-olive; less dark particles, but darker particles are very fine-grained.

1060-1070 Sandstone, light olive-gray, medium-grained, subangular to subrounded (approx. 90%); shale, dark-gray to grayish-black; trace of iron-staining; some white particles.

1070-1080 Sandstone, same as above; shale fragments much smaller and less abundant.

1080-1090 Shale, dark-gray to grayish-black (60%), sandstone (40%), medium to coarse-grained, subangular to subrounded, white to translucent; trace of pyrite and iron-staining.

1090-1120 Sandstone, light olive-gray, very fine-grained; trace of dark-gray shale; some iron-staining and white specks.

1120-1130 Sandstone, light olive-gray, very fine to fine-grained, subangular to subrounded (60%); shale, dark-gray (40%); trace of siderite, iron-staining.

1130-1140 Sandstone, light olive-gray to olive-gray, very fine-grained, subrounded to rounded (90%); shale, dark-gray to grayish-black (10%); trace of staining and white specks; trace of particles, very friable.

1140-1160 Shale, dark-gray to grayish-black (90%); sandstone, medium-gray; silty sand, brownish-yellow, very fine-grained; trace of iron-staining; darker, carbonaceous material.

1160-1190 Shale, grayish-black, trace of silty sand as described above.

1190-1220 Shale, same as above, with less trace material.

1220-1240 Sandstone, light olive-gray, very fine-grained to fine-grained (60%); shale, dark-gray to grayish-black (about 40%); trace of white trace element; iron-staining.

1240-1250 Sandstone, light olive-gray, fine-grained, subrounded to rounded (85%); shale, dark-gray to grayish-black (15%); trace iron-staining and cementation; some bluish-white element.

1250-1260 Sandstone, same as above; sand to shale ratio 90:10.

1260-1280 Sandstone, same as above; ratio more like 95:5.

1280-1290 Sandstone, same as above; trace of shale, very fine to fine-grained.

1290-1300 Sandstone, same as above; fine to medium-grained sand.

1300-1310 Sandstone, same as above; predominantly fine-grained.

1310-1320 Sandstone, same as above; trace of shale particles larger than the sand grains; trace of white trace particles that seem rather brittle; possibly some coal fragments.

1320-1330 Sandstone, same as above (95%); traces of dark-gray shale and coal fragments in sandstone, large chunk of coal mixed with sandstone; trace white particles.

1330-1340 Sandstone, same as above; less trace materials; coal and shale fragments not as apparent.

1340-1360 Sandstone same as above; color between light olive-gray and olive-gray; trace material same as above; trace of siderite particles.

1360-1380 Sandstone same as above; less dark trace material; more staining.

1380-1390 Siltstone, dark-gray (approx. 50%); sandstone, very fine to fine-grained, light olive-gray; subangular to sub-rounded (40%); coal fragments; carbonaceous matrix material; white, brittle trace material (approx. 10%); trace of staining.

1390-1400 Siltstone, same as above, larger quartz particles indicate conglomerate.

1400-1410 Sandstone, olive-gray, fine to medium-grained, sub-rounded to rounded (approx. 80%); siltstone, grayish-black (approx. 15%); coal particles, brownish-yellow siltstone, white brittle particles (approx. 5%); trace of siderite particles.

1410-1420 Sandstone, same as above; particles finer than above, but constituents approximately the same.

1420-1450 Sandstone, light olive-gray, very fine-grained to fine-grained (90-93%); similarly-sized particles of grayish-black shale; coal; white trace materials; iron-staining and concretions (approx. 7%).

1450-1460 Sandstone, same as above; less amount of trace materials; larger amount of white trace particles.

1460-1480 Sandstone, same as above, olive-gray; more grayish-black, trace carbonaceous material.

1480-1490 Sandstone, same as above, very fine to fine-grained; less dark trace material.

1490-1500 Sandstone, light olive-gray to olive-gray, fine to medium-grained, larger fractured crystals conglomeratic, subangular to subrounded (65%); feldspar (probably orthoclase), white chips, weathered, powders easily, vitreous luster (25%); dark material includes grayish-black shale particles and coal chips (approx. 10%); some iron-staining and cementation.

1500-1510 Shale, dark-gray to grayish-black (approx. 50%); siltstone, light olive-gray (15%), hard, dark, carbonaceous material (approx. 35%).

1510-1520 Shale, same as above; trace of feldspar.

1520-1530 Shale, same as above; more shale apparent; dark, carbonaceous siltstone negligible.

1530-1550 Shale, same as above; trace of siderite.

1550-1560 Siltstone, olive-gray (approx. 60%), dark-gray to grayish-black (15%); siltstone, dark carbonaceous (approx. 25%); siderite, trace; feldspar particles.

1560-1570 Sandstone, olive-gray, fine-grained, subangular to subrounded (70%); siltstone, dark-gray to grayish-black, some fragments show banding and lamination (20-25%); siltstone, hard, dark, carbonaceous, gray (5-10%).

1570-1580 Sandstone, olive-gray, very fine-grained to fine-grained, subrounded (approx. 70%); siltstone, dark-gray to grayish-black (20%); shale, dark-gray; trace materials, such as siderite and feldspar (approx. 10%).

1580-1620 Sandstone, light olive-gray, very fine-grained to fine-grained, subangular to subrounded (75%); siltstone, olive-gray and grayish-black (15%); shale, dark gray (approx. 7%); trace material, such as white chips, iron-stained (approx. 3%).

1620-1630 Sandstone, same as above (approx. 40%); shale, much more prominent (approx. 35%); trace of brownish-yellow silty sand; trace of white chips, iron-staining.

1630-1670 Shale, some slightly silty, medium-gray, reddish brown-gray predominates; lesser amounts of grayish-black to light brownish-gray.

1670-1680 Shale, same as above, except reddish-brown shale appears more silty.

1680-1700 Shale, same as above, light olive-gray appears silty and siliceous or cherty.

1700-1710 Shale, same as above; dark greenish-gray shale predominates (approx. 60%); dark reddish-gray and brown shale (approx. 30%); other darker, silty shales (approx. 10%); some chert.

1710-1720 Shale, same as above; trace of grayish-black, silty shale.

1720-1730 Shale, brownish-reddish-black (approx. 65%); dark-gray (25%); very coarse, dark greenish-gray to greenish-black (approx. 10%).

1730-1740 Shale, same as above; some slightly calcareous.

1740-1750 Shale, same as above, except finer dark-gray and greenish-gray (approx. 60%); reddish brown-black (approx. 40%); trace of fossil fragments.

1750-1760 Shale same as above, except less brown; trace very fine chert-like fragments; large quartz grains; slightly calcareous.

1760-1770 Shale, same as above; trace grayish-black shale; very fine cuttings; slightly calcareous.

1770-1780 Silty shale, dark-gray (85%); shale, grayish-black and reddish-brown (approx. 15%); trace of medium-gray siltstone (cuttings coarse); trace calcareous fossil fragments.

1780-1790 Shale, dark-gray, some silty and some not (approx. 90%), greenish-black and reddish-brown (approx. 10%); trace chert and quartz; cuttings, medium; slightly calcareous.

1790-1800 Shale, reddish-brown, slightly calcareous (approx. 80%); dark-gray (approx. 10%); limestone, medium-gray to light brownish-gray, with fossil fragments (approx. 10%); cuttings, medium.

1800-1810 Shale, reddish-brown (approx. 55%); shale and limestone, medium-gray to dark-gray, calcareous (approx. 45%); cuttings, very fine, hard to distinguish.

1810-1820 Shale, dark-gray (predominantly), some reddish-brown, slightly calcareous; limestone, brownish-black to very light-gray, some crystalline; trace of fossil fragments; cuttings, medium to coarse.

1820-1830 Shale, dark greenish-gray to dark-gray, some brownish-black and reddish-brown, some slightly calcareous (approx. 60%); limestone, light-gray to brownish-black (approx. 40%).

1830-1840 Shale, medium light-gray, dark-gray (predominantly), lesser amount reddish-brown; some slightly calcareous limestone, light olive-gray to olive-black, some dolomitic and crystalline.

1840-1850 Shale, same as above; cuttings, very fine, more light olive-gray (approx. 40%).

1850-1860 Limestone, light olive-gray to brownish-gray (approx. 65%); shale, medium dark-gray, dark-gray, some reddish-brown (approx. 35%).

1860-1870 Limestone, olive-black with light olive-gray fossil fragments, crystalline (approx. 90%); shale, dark-gray, trace of reddish-brown (approx. 10%).

1870-1880 Limestone, olive-black, granular, fossil-fragmental (approx. 90%); shale, dark-gray, slightly calcareous (approx. 10%).

1880-1890 Limestone, olive-black, granular, fossil-fragmental (approx. 60%), olive-gray and crystalline (approx. 30%); shale, dark-gray and laminated (approx. 10%); some iron cementation.

1890-1900 Limestone, same as above, but less shale present; less fossil-fragments.

1900-1905 Limestone, olive-black 150%), olive-gray and crystalline (approx. 50%); trace of light olive-gray.

1905-1910 Limestone, same as above; some dark-gray shale.

1910-1915 Limestone, same as above; trace reddish-brown shale.

1915-1925 Limestone, light olive-gray to olive-gray, crystalline (approx. 85%), olive-black, granular (approx. 15%); trace of dark-gray shale.

1925-1930 Limestone, same as above, except ratio more like 50:50.

1930-1935 Limestone, olive-black (fairly uniform), trace light olive-gray, crystalline; some iron cementation and staining.

1935-1940 Limestone, olive-black (approx. 75%), olive-gray (approx. 25%); trace brownish-gray with fossil fragments interbedded, light olive-gray, crystalline.

1940-1945 Limestone, olive-gray, crystalline; trace fossil fragments (approx. 80%), olive-black, granular (approx. 20%); trace light olive-gray, crystalline; iron cementation.

1945-1950 Limestone, olive-gray, crystalline (85%), olive-black (approx. 15%); trace dark-gray shale; iron-staining.

1950-1955 Limestone, dark-gray (fairly uniform), trace light olive-gray, crystalline; iron-staining.

1955-1960 Limestone, dark-gray, slightly crystalline (approx. 35%); shale, dark-gray, slightly calcareous (approx. 45%); trace light olive-gray, crystalline limestone.

1960-1970 Limestone, olive-black (approx. 75%); trace fossil fragments, olive-gray (approx. 20%); light olive-gray limestone and dark-gray shale (approx. 5%); trace white calcite crystals.

1970-1985 Limestone, same as above; traces of iron-staining and reddish-brown shales.

1985-1990 Limestone, olive-black (fairly uniform); small amount light olive-gray, crystalline calcite; trace dark-gray shale.

1990-1995 Limestone, olive-black (predominantly), small amount grayish-black, crystalline, light olive-gray; trace dark-gray shale.

1995-2000 Limestone, same as above, with some iron cementation.

2000-2010 Limestone, fairly uniform olive-black (approx. 90%), light olive-gray, semi-crystalline to crystalline (approx. 10%); trace dark-gray shale; iron cementation.

2010-2015 Limestone, olive-gray, crystalline (approx. 60%); siltstone, dark-gray, calcareous, fairly well-indurated (approx. 40%); trace light olive-gray calcite; iron cementation.

2015-2025 Limestone, olive-gray, crystalline (approx. 100%); trace of dark-gray siltstone; iron cementation.

2025-2030 Limestone, olive-gray to olive-black, crystalline (approx. 100%); trace light olive-gray crystalline calcite; iron-staining.

2030-2035 Limestone, medium light-gray, crystalline, oolitic (approx. 75%); siltstone, dark-gray, calcareous, (approx. 25%); trace medium dark-gray, slightly calcareous shale; iron-staining.

2035-2040 Limestone, olive-gray, crystalline, slightly oolitic, (approx. 80%); silty shale, grayish-black, calcareous; shale, dark-gray, calcareous, with darker-gray carbonaceous embedded grain; trace of light olive-gray, very crystalline calcite; some iron-staining.

2040-2050 Limestone, olive-gray, crystalline, slightly oolitic (approx. 85%); shale, olive-black, slightly crystalline (approx. 15%), trace dark-gray; iron staining.

2050-2060 Limestone, olive-gray, crystalline, slightly oolitic (85%); silty shale, medium dark-gray to dark-gray, calcareous

(15%); some iron-staining; light olive-gray crystals of calcite.

2060-2065 Limestone, olive-gray, crystalline (approx. 85%); shale, dark greenish-gray, slightly calcareous (approx. 10%); dolomite, dark greenish-gray, crystalline (approx. 5%).

2065-2070 Silty shale, gray and reddish-brown (approx. 80%); dolomite, olive-gray, slightly crystalline (approx. 15%); shale, dark greenish-gray to dark-gray (approx. 5%).

2070-2080 Limestone, light olive-gray, fine crystalline; some dolomitic (approx. 85%); shale, silty, grayish-brown (reddish), dark greenish-gray (approx. 10%); limestone, brownish-black, white, crystalline (approx. 5%).

2080-2090 Limestone, olive-gray, fine-crystalline, green stain associated with some fragments (approx. 95%); shale, silty, grayish-brown (reddish), white; dark-gray crystals of calcite (approx. 5%).

2090-2095 Limestone, olive-gray, fine-crystalline, some slightly darker olive-gray fragments, stylonitic; trace of grayish-brown (reddish), silty shale.

2095-2100 Limestone, olive-gray, fine-crystalline, traces of light olive-gray and olive-black.

2100-2110 Limestone, olive-gray, fine-crystalline, oolitic, slightly fossil fragmental; trace of darker limestone fragments and shale particles.

2110-2115 Limestone, olive-gray (predominantly); some dark greenish-gray, slightly oolitic; trace of white calcite crystals.

2115-2120 Limestone, olive-gray, fine-crystalline, slightly fossil-fragmental; small amount of olive-black limestone; traces of dark-gray, grayish-red-brown shale.

2120-2125 Limestone, olive-gray, small amount of olive-black, fine-crystalline, slightly oolitic; trace of iron-staining; calcareous mud matrix.

2125-2130 Limestone, same as above; some light olive-gray fragments of limestone.

2130-2135 Limestone, same as above; less light crystals of calcite; traces of metal, possibly drill bit chips; not oolitic.

2135-2145 Limestone, olive-gray, fine-crystalline, small amount of olive-black; traces dark greenish-gray shale; trace of iron-staining and a mutation.

2145-2150 Limestone, same as above; bits of metal, possibly drill bit fragments.

2150-2155 Limestone, same as above; cuttings, very fine, almost appear as sand; no metal bits.

2155-2160 Limestone, olive-gray, fine-crystalline; trace of light olive-gray calcite crystals; olive-black limestone fragments, iron cementation and staining; cuttings, fine to medium-grain size.

2160-2165 Limestone, same as above; color turning toward light olive-gray.

2165-2170 Limestone, same as above; color more light olive-gray.

2170-2176 Limestone, light olive-gray, fine-crystalline, traces of dark olive-gray limestone; iron-staining; cuttings, fine-grained.

2175-2180 Limestone, light olive-gray, fine-crystalline; cuttings, very fine to fine; small amount of dark-gray, calcareous siltstone.

2180-2195 Limestone, light olive-gray, fine-crystalline; cuttings, medium-grained, slightly oolitic; trace of olive-black limestone.

- 2195-2220 Limestone, same as above; more oolitic; trace of iron- staining.
- 2220-2225 Limestone, olive-gray, fine-crystalline; calcite cementation, oolitic grains; traces of olive-black limestone fragments.
- 2225-2235 Limestone, light olive-gray and olive-gray (even distribution); traces of white calcite crystals; slightly oolitic.
- 2235-2240 Limestone, olive-gray, fine-crystalline, traces of olive-black (approx. 90%); chert, light olive-gray to olive-gray; microcrystalline (approx. 10%).
- 2240-2250 Limestone, olive-gray, fine to microcrystalline (approx. 90%); chert, light olive-gray to olive-gray; shale, dark-gray; traces of siderite; iron-staining (approx. 10%).
- 2250-2255 Limestone, light olive-gray (predominantly); some olive-gray, fine-crystalline; trace of white crystalline fragments of calcite; chert fragments, light olive-gray to olive-gray; some with rosy streaks, traces of dark-gray shale; iron-stainings.
- 2255-2260 Limestone, olive-gray, fine-crystalline to microcrystalline (95%); small amount of light olive-gray and olive-black limestone (approx. 5%); traces of grayish-black shale; iron-staining; siderite (reddish-brown); some greenish-black staining associated with limestone.
- 2260-2265 Limestone, light olive-gray to olive-gray, microcrystalline to fine-crystalline; small amount of dark greenish-gray shale; iron-staining.
- 2265-2270 Limestone, olive-gray (predominantly), some olive-black, fine-crystalline; traces of dark greenish-gray shale; light olive-gray chert; iron cementation and staining.
- 2270-2275 Limestone, same as above; more chert present.
- 2275-2280 Limestone, olive-gray, fine-crystalline; some shale, dark greenish-gray; chert, clear to light olive-gray; trace of dark-gray shale; iron cementation.
- 2280-2285 Limestone, olive-gray, fine-crystalline, dolomitic; traces of grayish-black, slightly calcareous shale; iron-staining.
- 2285-2290 Limestone, olive-gray, fine-crystalline, some brownish-black (predominantly); shale, some dark-gray and dark greenish-gray; some staining.
- 2290-2300 Limestone, same as above, with more brownish-gray.
- 2300-2305 Limestone, same as above, but less brownish-black; trace of white calcite crystals.
- 2305-2310 Limestone, brownish-black to olive-gray, crystalline to granular, dolomitic (90%); shale, dark-gray, silty, slightly calcareous (approx. 10%); trace of iron-staining.
- 2310-2315 Limestone, olive-gray, fine-crystalline (predominantly); some brownish-black, crystalline to granular; smaller amount of olive-black and dark-gray shale; trace of iron-staining.
- 2315-2320 Limestone, same as above; some yellowish-gray to light olive-gray calcite crystal fragments.
- 2320-2325 Limestone, light olive-gray to olive-gray, fine-crystalline; trace of shale, dark-gray; iron-staining.
- 2325-2330 Limestone, light olive-gray to olive-gray, fine-crystalline; traces of dark-gray shale; iron cementation; cuttings, fine.
- 2330-2335 Limestone, same as above; cuttings, fine to medium.
- 2335-2340 Limestone, same as above; slightly dolomitic; cuttings, fine.

2340-2345 Dolomite, olive-black, fine-crystalline; trace of limestone crystals.

2395-2350 Siltstone, olive-gray to brownish-black (approx. 85%); dolomite, olive-gray; limestone, light olive-gray to olive-gray (approx. 15%); cuttings, fine to medium.

2350-2355 Dolomite, olive-gray (fairly uniform); trace of calcareous matrix; some iron-staining; cuttings appear as fine sand.

2355-2360 Siltstone, brownish-black, slightly calcareous (fairly uniform); limestone, olive-gray (predominantly); some light olive-gray; some lighter-gray fragments appear cherty; evidence of a calcareous matrix.

2360-2370 Siltstone, olive-black (fairly-uniform), almost very fine sand; slightly calcareous or dolomitic; traces of translucent to white quartz grains (some rosy); some iron-staining.

2370-2375 Siltstone (could be calcareous sandstone), fairly uniform, olive-black, some slightly calcareous, some cherty with pyrite or siderite streaks; trace of calcite crystal.

2375-2380 Siltstone (could be calcareous sandstone), fairly uniform olive-black; some olive-gray, fine-crystalline fragments of limestone; traces of white to light olive-gray cherty fragments; traces of iron-staining and cementation.

2380-2385 Siltstone same as above; color more uniformly dark greenish-gray; cuttings, very fine to fine.

2385-2390 Sandstone, silty, olive-gray; some appears as fine-grained sand, color uniform, slightly calcareous; some white to light olive-gray quartz crystals; trace of iron-staining.

2390-2395 Siltstone, olive-black (fairly uniform), slightly calcareous; traces of white quartz grains; some iron-staining.

2395-2400 Siltstone, olive-black, slightly calcareous; some greenish-black (approx. 80%); sandstone, fine to medium-grained, white to light olive-gray (approx. 20%); trace of iron-staining.

2400-2405 Siltstone, same as above; uniformly greenish-black (approx. 95%); sandstone (approx. 5%), slightly calcareous.

2405-2410 Siltstone, same as above; sandstone to siltstone about 50-50; some iron-staining.

2410-2425 Shale, greenish-black, silty, calcareous (approx. 95%); limestone, light olive-gray to olive-gray, fine-crystalline (approx. 5%).

2425-2430 Shale, same as above, olive-black, only slightly calcareous; trace of bright pyrite.

2430-2435 Shale, grayish-black (fairly uniform), slightly silty, slightly calcareous; trace of limestone fragments.

2435-2440 Shale, same as above; traces of white quartz fragments.

2440-2445 Shale, grayish-black to brownish-black, slightly silty, calcareous (approx. 90%); shale, dark-gray, calcareous (approx. 10%); traces of olive-gray limestone fragments, traces of staining.

2445-2450 Limestone, olive-gray, fine-crystalline; small amount light olive-gray, crystalline, limestone fragments (approx. 75%); shale, grayish-black, silty, calcareous (approx. 25%); trace of iron-staining.

2450-2455 Limestone, olive-black, some olive gray; less amount light olive-gray, fine-crystalline; trace amount of grayish-black shale, calcareous.

2455-2460 Limestone, light olive-gray, olive-gray to olive-black, fine-crystalline; good color mixture.

2460-2465 Limestone, olive-gray (fairly uniform), fine-crystalline, some olive-black; stylolites observed; some staining.

2465-2470 Limestone, same as above, with some light olive-gray.

2470-2475 Limestone, same as above; traces of grayish-black shale.

2475-2480 Limestone, same as above, but with cuttings much finer.

2480-2495 Limestone, olive-gray (predominantly), some light olive-gray to olive-black; crystalline to granular; trace grayish-black shale.

2495-2510 Limestone, same as above; grayish-black, silty shale is slightly calcareous.

2510-2515 Siltstone, grayish-black, slightly calcareous, (approx. 50-55%); limestone, olive-gray, fine-crystalline, (approx. 30%); chert, light olive-gray to olive-gray, slightly calcareous (approx. 15%); traces of dark-gray shale, slightly calcareous; some iron-staining.

2515-2525 Chert, olive-gray, fine-crystalline, slightly calcareous to calcareous (approx. 85%); siltstone, grayish-black, calcareous (approx. 15%); traces of light olive-gray to yellowish-gray quartz fragments; some staining.

2525-2530 Chert, same as above, with a few more quartz fragments.

2530-2535 Chert, olive-gray, slightly calcareous (approx. 75%); siltstone, olive-black, slightly calcareous, coarser-crystalline to granular (approx. 20%); shale, olive-gray and very light-gray to yellowish-gray quartz fragments (approx. 5%).

2535-2540 Samples missing.

2540-2545 Chert, grades from light olive-gray to olive-black, some slightly calcareous and some not (approx. 25%); shale, olive-black, silty (approx. 25%).

2545-2550 Chert, olive-gray (fairly uniform); a few light olive-gray fragments (approx. 65%); shale, color between dark-gray and olive-black, slightly silty (approx. 35%).

2550-2555 Samples missing.

2555-2560 Chert, same as sample 2545-2550.

2560-2565 Samples missing.

2565-2580 Chert, olive-gray (fairly uniform); small amount of olive-black siltstone.

2580-2590 Shale, olive-gray (predominantly), dark greenish-gray, some olive-black; chert, small amount of olive-gray.

2590-2595 Shale, olive-black, fairly uniform (approx. 90%), olive-gray (approx. 5%); chert, olive-gray (approx. 5%); trace of pyrite particles.

2595-2600 Shale, grayish-black to olive-black; oil show with fluorescence fairly uniform.

Extracted from: ([Pilot Mountain Quadrangle](#)).

Twin Bridges Quadrangle (GM 116-NE)

Coker, A.E., 1965, Geologic Map and Mineral Resources Summary of the Twin Bridges Quadrangle, Tennessee: Tennessee Division of Geology, Geologic Map GM 116-NE, scale 1:24,000. (*GRI Source Map ID 68526*).

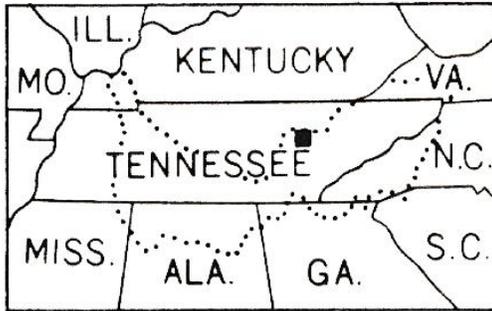
Correlation and Explanation of Mapped Units

<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">Pcr</div> <p style="text-align: center;">Crossville Sandstone</p> <p>Sandstone, yellowish-green and light- to reddish-brown, fine- to coarse-grained, medium-bedded, crossbedded in part, loosely cemented on outcrop. Maximum preserved thickness 100 feet.</p>	}
<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">Pd</div> <p style="text-align: center;">Dorton Shale</p> <p>Shale, silty, greenish-yellow and reddish-brown to brownish-gray, with minor siltstone in places; grades downward into underlying Rockcastle Sandstone through a short interval of siltstone and fine-grained, thinly laminated sandstone. Thickness 50 to 120 feet.</p>	
<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">Pr</div> <p style="text-align: center;">Rockcastle Sandstone</p> <p>Sandstone, fine-grained, thin-bedded; grades downward into conglomeratic sandstone, coarse-grained, medium- to very thick-bedded, crossbedded in part; all yellowish- or light brownish-gray. Locally present, near middle of formation is as much as 30 feet of shale which may contain Nemo coal. Thickness 130 to 190 feet.</p>	
<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">Pvnw</div> <p style="text-align: center;">Vandever, Newton, and Whitwell Formations, Undifferentiated</p> <p>Upper part is shale, silty and carbonaceous, light- to dark-gray; and lenses of sandstone, silty, micaceous, carbonaceous, gray, fine-grained, thin-bedded; Morgan Springs coal may be present near top. Middle part is lenticular sandstone, silty, micaceous, carbonaceous, light-brown to light-gray, fine- to medium-grained, thin-bedded; 0 to 50 feet thick. Lower part is alternating shale and siltstone, carbonaceous and micaceous, medium- to dark-gray, thinly laminated to thin-bedded; coal seam may be present near middle. Total thickness about 150 feet.</p>	
<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">Ps</div> <p style="text-align: center;">Sewanee Conglomerate</p> <p>Sandstone, micaceous, somewhat carbonaceous, pinkish- to yellowish-gray, very fine-grained, thin-bedded, with few or no pebbles; grades downward into fine- to coarse-grained sandstone and conglomeratic sandstone, medium- to very thick-bedded, crossbedded. About 50 to 60 feet exposed along Clear Creek in southwest corner of quadrangle.</p>	

PENNSYLVANIAN

Extracted from: ([Twin Bridges Quadrangle](#)).

Quadrangle Location



Extracted from: ([Twin Bridges Quadrangle](#)).

Map Legend

	Contact, dashed where approximate	
	Strike and dip of beds	
	Normal	
	Horizontal	
	Dip less than 5°	
	Active quarry	Sandstone
	Map number refers to description in Mineral Resources Summary	

Extracted from: ([Twin Bridges Quadrangle](#)).

Mineral Resource Summary

Mineral Resources Summary of the Twin Bridges Quadrangle, Tennessee (MRS 122-NW)

by Alfred E. Coker

All mineral resources map numbers presented below correspond to a locality in the GRI digital geologic-GIS data, in the Mine Point Features (obedmin) feature class/data layer, with the same map number.

Report Text

Introduction

This summary accompanies the geologic map of the Twin Bridges quadrangle, which is bounded by 36° 07'30" and 36°15' N. Latitude and by 84°45' and 84°52'30" W. Longitude, an area mostly in northwestern Morgan County but including a small portion of northeastern Cumberland County.

The only mineral resource that has been mined in this quadrangle is sandstone (dimension). Potential mineral resources are shale for lightweight aggregate and ceramic materials, sand, and coal.

The sandstone quarry described has been located with reference to the Tennessee Coordinate System. The base point for this system (at the intersection of 86°00' W. Longitude and 34°40' N. Latitude near Scottsboro, Alabama) is assigned the values 2,000,000 feet and 100,000 feet north. The coordinate location (in feet) of any point in Tennessee may be expressed with reference to its distance east-west and north of this base point. This system is shown in gray on the quadrangle map as a grid of 10,000-foot rectangles. All locations on this map may be measured from the reference coordinates shown along the margins of the quadrangle.

Sandstone (Dimension)

Dimension sandstone suitable for quarrying is found in much of the Cumberland Plateau. All the stone quarried has certain general characteristics. It is fine- to medium-grained quartzose rock with a silica cement. Individual beds are generally 2 to 5 inches thick and are separated by well-defined bedding planes that are continuous for several yards. Where relatively fresh, the stone is uniform light gray. Weathered stone is generally brown but commonly has pastel shades of tan, buff, yellow to bluish-gray, and pink. Diffusion bands of iron oxides are common in many layers, and such strata are preferred to those of more uniform color.

An active (1964) quarry about 1M miles east-southeast of Bethel Cemetery is in the upper part of the Rockcastle Sandstone (Tennessee Coordinates 636,400N., 2,368,000E.). Its dimensions are approximately 25 by 35 feet with an average face of about 15 feet. Thickness of beds being mined ranges from 2 inches to 2 feet.

Selected Reference

Webb, G. W. (1958) The Sandstone Industry of the Crossville-Crab Orchard District, Tennessee: Tenn. Acad. Sci. Jour., v. 33, no. 1.

Sand and Sandstone

Sand is a potential resource where sandstones have decomposed and are soft and friable. In the Cumberland Plateau most of the sand of this type would be suitable for general use, such as building or paving. In the Twin Bridges quadrangle potential sources of sand are the Rockcastle and Crossville Sandstones. On the accompanying geologic map these areas are labeled PNr (Rockcastle Sandstone) and Per (Crossville Sandstone).

Selected Reference

Hershey, R. E. (1960) The High-Silica Resources of Tennessee: Tenn. Div. Geology Rept. Inv. 10.

Coal

No coal has been mined in this quadrangle, but coal has been mined in the adjacent quadrangle to the west (Jones Knob).

Mineable coals may be present in shales of the Vandever, Newton, and Whitwell Formations (PNnw on the map). An unnamed coal is present locally in the PNnw belt at a stratigraphic position approximately 120 feet below the base of the Rockcastle Sandstone and about 40 feet above the top of the Sewanee Conglomerate. The Morgan Springs coal is just beneath the base of the Rockcastle Sandstone in the PNnw belt.

The Nemo coal is present locally in a shale split in the middle of the Rockcastle Sandstone (PNr on the map).

Selected References

Coker, A. E. (1965) Geologic Map and Mineral Resources Summary of the Jones Knob Quadrangle,

Tennessee: Tenn. Div. Geology GM 116-NW and MRS 116-NW.

Luther, E. T. (1959) The Coal Reserves of Tennessee: Tenn. Div. Geology Bull. 63.

Shale

Shale for lightweight aggregate or ceramic uses may be found in the Whitwell, Vandever, and Dorton formations.

Selected Reference

Conley, J. E., Wilson, Hewitt, Klinefelter, T. A., AND Others (1948) Production of Lightweight Concrete Aggregates from Clays, Shales, Slates, and Other Materials: U. S. Bur. Mines Rept. Inv. 4401.

Extracted from: ([Twin Bridges Quadrangle](#)).

Map Number 1

An active (1964) quarry about 1M miles east-southeast of Bethel Cemetery is in the upper part of the Rockcastle Sandstone (Tennessee Coordinates 636,400N., 2,368,000E.). Its dimensions are approximately 25 by 35 feet with an average face of about 15 feet. Thickness of beds being mined ranges from 2 inches to 2 feet.

Extracted from: ([Twin Bridges Quadrangle](#)).

GRI Digital Data Credits

This document was developed and completed by James Chappell, James Winter, Chase Winters and Georgia Hybels (Colorado State University) for the NPS Geologic Resources Division (GRD) Geologic Resources Inventory (GRI) Program. Quality control of this document by Stephanie O'Meara (Colorado State University).

The information in this document was compiled from the GRI source map, and is intended to accompany the digital geologic-GIS map and other digital data for Obed Wild & Scenic River, Tennessee (OBED) developed by James Chappell, James Winter, Chase Winters and Stephanie O'Meara (Colorado State University) (see the [GRI Digital Maps and Source Map Citations](#) section of this document for all sources used by the GRI in the completion of this document and the related GRI digital geologic-GIS map).

GRI finalization by James Chappell (Colorado State University).

GRI program coordination and scoping provided by Bruce Heise and Tim Connors (NPS GRD, Lakewood, Colorado).