N
W E
S

LEGEND

- HAR Site
- Main Dam
- Sears No. 1 and Groce No. 1 Wells
- 8-km (5-mi.) Radius from Site
- 40-km (25-mi.) Radius from Site
- Faults (dashed where inferred, dotted where concealed)
- 49 Cretaceous and Cenozoic Faults (numbers refer to descriptions in the FSAR)
- Folds (dashed where inferred)
- Dikes (dashed where inferred)

Geologic Units (See Figure 2.6-2, Sheet 2 for Unit Descriptions)

Tec	TRcs	CZfv
Tpy	PPg	CZfv1
Tt	PPmg	CZg
Kb	PzZg	CZig
Kc	PzZq	CZiv
Km	PzZu	CZmd
Jd	CZam	CZph
TRc	CZbg	CZv
TRcc	CZc	CZve
TRcp	CZfg	CZmv

Note NI: This fault included in NCGS unpublished mapping appears to represent variations in metamorphic grade adjacent to the pluton rather than a fault contact.

0 2.5 5 10 15
Kilometers

0 2.5 5 10
Miles

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Site Vicinity Geologic Map
(40-km [25-mi.] Radius)

FIGURE 2.6-2 (SHEET 1 OF 2) Rev 0

DESCRIPTION OF GEOLOGIC UNITS

Tt TERRACE DEPOSITS AND UPLAND SEDIMENT - Gravel, clayey sand, and sand and minor iron-oxide cemented sandstone.

Tpy YORKTOWN FORMATION AND DUPLIN FORMATION, UNDIVIDED - Yorktown Formation: Fossiliferous clay with varying amounts of fine-grained sand, bluish gray, shell material commonly concentrated in lenses; mainly in area north of Neuse River. Duplin Formation: Shelly, medium- to coarse-grained sand, sandy marl, and limestone, bluish gray; mainly in area south of Neuse River.

Tec CASTLE HAYNE FORMATION - Comfort Member and New Hanover Member, undivided. Comfort Member: Bryozoan-echinoid skeletal limestone, locally dolomitized, solution cavities common. New Hanover Member: Phosphate-pebble conglomerate, micritic, thin; restricted to basal part of Castle Hayne Formation in southeastern counties.

Kb BLACK CREEK FORMATION - Clay gray to black, lignitic; contains thin beds and laminae of fine-grained micaceous sand and thick lenses of cross-bedded sand. Glauconitic, fossiliferous clayey sand lenses in upper part.

Kc CAPE FEAR FORMATION - Sandstone and sandy mudstone, yellowish gray to bluish gray, mottled red to yellowish orange, indurated, graded and laterally continuous bedding, blocky clay, faint cross-bedding, feldspar and mica common.

Km MIDDENDORF FORMATION - Sand, sandstone, and mudstone, gray to pale gray with an orange cast, mottled; clay balls and iron-cemented concretions common, beds laterally discontinuous, cross bedding common.

Jd DIABASE - Dikes, gray to black.

TRc CHATHAM GROUP (undivided) - Conglomerate, fanglomerate, sandstone, and mudstone.

TRcc CUMNOCK FORMATION - Sandstone and mudstone, gray to black; coal beds and carbonaceous shale. Grades into Pekin and Sanford formations.

TRcp PEKIN FORMATION - Conglomerate, sandstone, and mudstone.

TRcs SANFORD FORMATION - Conglomerate, fanglomerate, sandstone, and mudstone.

PPg GRANITIC ROCK (Pennsylvanian to Permian, 265-325 m.y.) - Megacrystic to equigranular.

PPmg FOLIATED TO MASSIVE GRANITIC ROCK (Pennsylvanian to Permian, 270-320 m.y.) - Megacrystic to equigranular.

PzZg METAMORPHOSED GABBRO AND DIORITE - Foliated to massive.

PzZu META-ULTRAMAFIC ROCK - Metamorphosed dunite and peridotite; serpentinite, soapstone, and other altered ultramafic rock. Only larger bodies shown.

CZam AMPHIBOLITE - Metamorphosed mafic extrusive and intrusive rock; includes hornblende gneiss, thin layers of mica schist, and small non-layered masses of metadiorite and metagabbro.

CZbg BIOTITE GNEISS AND SCHIST- Inequigranular and megacrystic; in places contains garnet; interlayered and gradational with mica schist and amphibolite; includes small masses of granitic rock.

CZc VOLCANIC METACONGLOMERATE - Includes metagraywacke and metamudstone.

CZfg FELSIC MICA GNEISS - Interlayered with graphitic mica schist and mica-garnet schist, commonly with kyanite; minor hornblende gneiss.

CZfv FELSIC METAVOLCANIC ROCK - Metamorphosed dacitic to rhyolitic flows and tuffs, light gray to greenish gray; interbedded with mafic and intermediate metavolcanic rock, meta-argillite, and metamudstone.

CZg METAMORPHOSED GRANITIC ROCK (Late Proterozoic to late Cambrian, 520-650m.y.) - Megacrystic, well-foliated, locally contains hornblende.

CZig INJECTED GNEISS - Biotite gneiss and schist intruded by numerous sills and dikes of granite, pegmatite, and apatite; minor hornblende gneiss.

CZlg LINEATED-FELSIC MICA GNEISS - White to pink with strong lineation of muscovite-biotite streaks and prismatic quartz aggregates; planar foliation and layering weak; minor mica schist and hornblende gneiss.

CZiv INTERMEDIATE METAVOLCANIC ROCK - Metamorphosed andesitic tuffs and flows, medium to dark grayish green; minor felsic and mafic metavolcanic rock.

CZmd METAMUDSTONE AND META-ARGILLITE - Bedding plane and axial planar cleavage common; interbedded with metasandstone, metaconglomerate, and metavolcanic rock.

CZph PHYLLITE AND SCHIST - Locally laminated and pyritic; includes phyllonite, sheared fine-grained metasediment, and metavolcanic rock.

CZve METAVOLCANIC EPICLASTIC ROCK - Metamorphosed argillite, mudstone, volcanic sandstone, conglomerate, and volcanic rock.

CZmv MAFIC METAVOLCANIC ROCK - Metamorphosed basalt flows and tuffs, dark green to black; interbedded with felsic and intermediate metavolcanic rock and metamudstone.

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FIGURE 2.6-2 (SHEET 2 OF 2) Rev 0