



NPGS Niagara Peninsula Geological Society Field Trip Info Sheet
Hungry Hollow Quarry, near Arkona, ON info

Locations: north & south pits, Hungry Hollow Quarry

Site visits are by permission only, with a club, & there is an in-advance sign up (minimum 10 days prior to a club scheduled field trip) - all participants are required sign an insurance liability waiver.

GPS co-ordinates:

south pit 43.076644 -81.794958 (middle of pit area)

- gate @ south pit 43.077105 -81.795859
- parking on right-hand side of road before gate - Hungry Hollow Road
- please do park on the left-hand side of the road where the log cabin residence is - thanks.

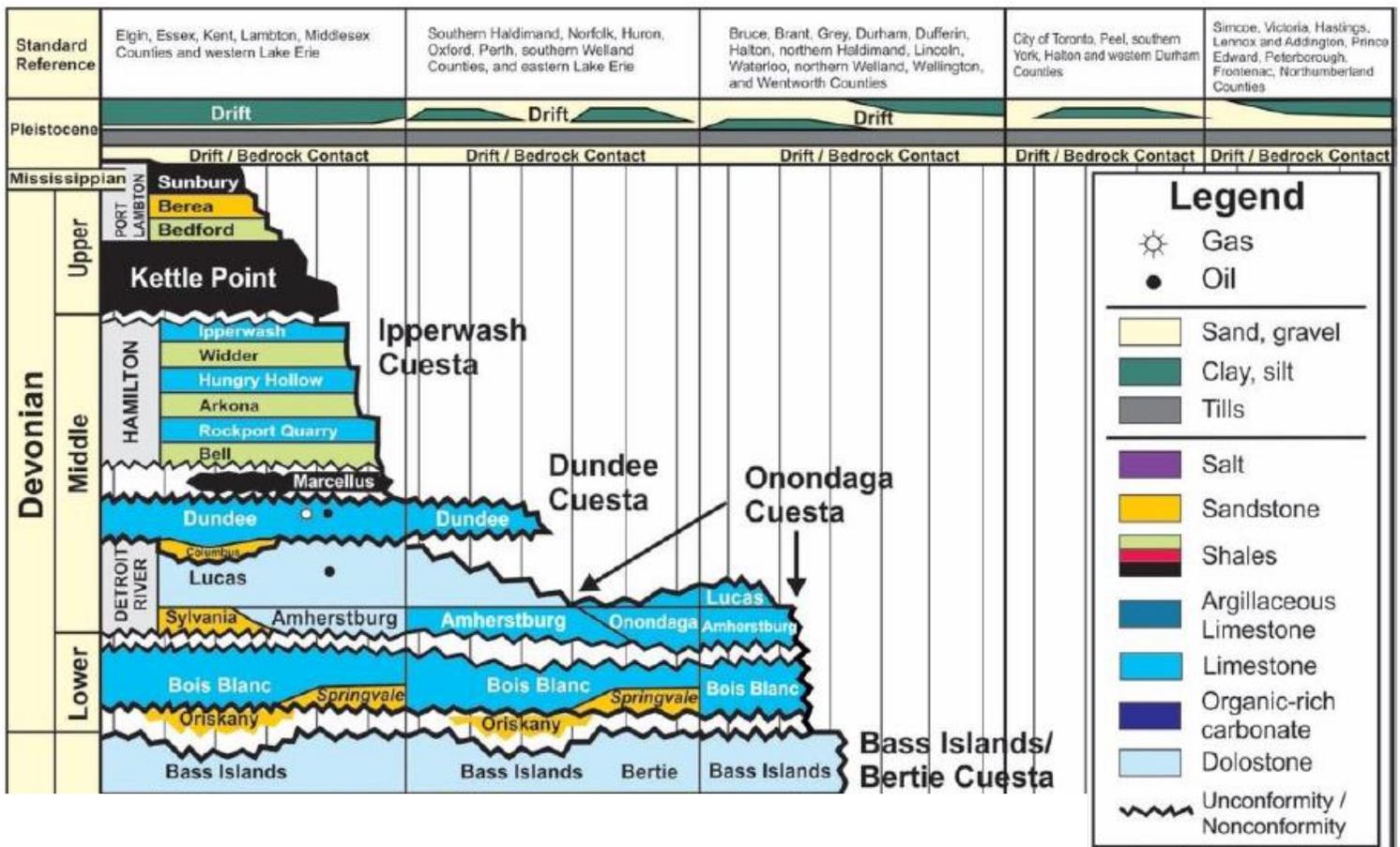
north pit 43.077701 -81.798662 (middle of water)

- gate @ north pit 43.077894 -81.795574
- parking on left-hand side of road before & facing the gate - please leave room at north pit gate for turning around - Fossil Road

Geologic dating:

Recent research has changed the cuesta relationships - Hungry Hollow (Hamilton Group) is part of the Ipperwash Cuesta (and younger than the Onondaga Peninsula).

Dating: Mid-Devonian, 397.5±2.7 to 385.3±2.8 Ma (doesn't seem to have changed)



Stratigraphy of the Upper Silurian to Middle Devonian, Southwestern Ontario; Shuo Sun; University of Western Ontario doctorate thesis; 2018
Summary of Field Work and Other Activities 2017; edited by R M Easton, A F Bajc, S M Hamilton, D R B Rainsford, M Duguet, O M Burnham, R-L Simard and R D Dyer; Ontario Geological Survey



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Miscellaneous Release-Data 219: Paleozoic Geology of Southern Ontario Project Summary and Technical Document; Derek K. Armstrong and J.E.P. Dodge, Sedimentary Geoscience Section, Ontario Geological Survey; 2007

Mid Devonian - Hamilton Group

Hamilton Group is a calcareous shale-dominated unit with relatively thin carbonate dominated intervals. It is subdivided into 6 formations: in ascending order,

- the Bell, Rockport Quarry, Arkona, Hungry Hollow, Widder, and Ipperwash formations
- Rockport Quarry, Hungry Hollow, and Ipperwash formations contain more limestone beds than the other formations
- Hamilton Group is poorly exposed in a belt from southern Lake Huron to western Lake Erie.
- Three units are well exposed at the Rock Glen Conservation Area & Hungry Hollow Quarry.

Open File Report 5555: Evaluation of the Conventional and Potential Oil and Gas Reserves of the Devonian of Ontario; Bailey Geological Services Ltd. and Robert O. Cochrane; Ontario Ministry of Northern Affairs and Mines, Ontario Geological Survey; 1985

The Hamilton group (shales & limestones) are underlain by the Marcellus shale and overlain by the Kettle Point shale. (both black bituminous shales.)

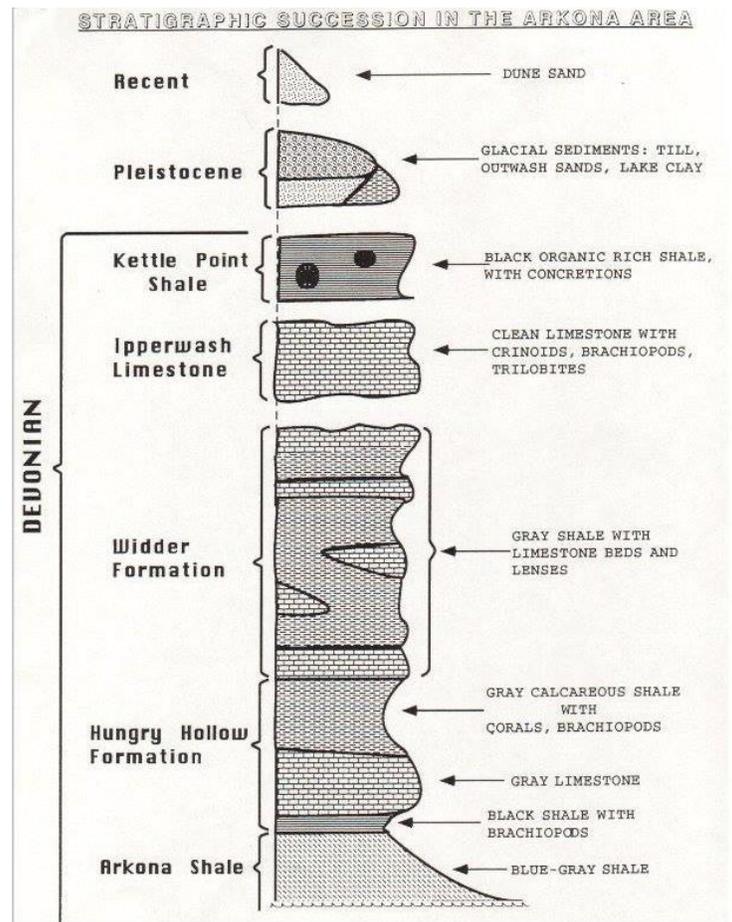
The Hamilton Group is called "The Soap" by oil drillers because its main constituent is soft, light grey shale that turns sticky and gummy when a little water is added to it.

In descending order, they are:

- Ipperwash Formation (or limestone) - considered caprock of the Hamilton Group - bluish-grey limestone - brachiopods are common - bluish-greyish chert nodules are usually found in the upper portion - outcrops are usually found closer to Lake Huron shoreline.

3 strata present @ Hungry Hollow Quarry & all have fossils & storm beds:

- Widder Formation (or beds, also called "top rock" by oil drillers) - dark grey to brownish-grey shale with limestone beds & lenses
- Hungry Hollow Formation (or lime) - 3 units - from top to bottom - 1) grey shale with corals & brachiopods - calcite; 2) grey limestone; 3) black shale with brachiopods
- Arkona shale (or "Upper Soap") - blue-grey shale - some thin limestone beds
- Rockport Quarry limestone ("middle lime") - grey & brown fine-grained limestone with some thin shaley beds
- Bell shale (made up, in the drillers words of an upper part called the "Lower Soap" - blue and grey shale beds with minor limestone lenses
- lower limestone called the "Dark Streak" or "Dark Shell").





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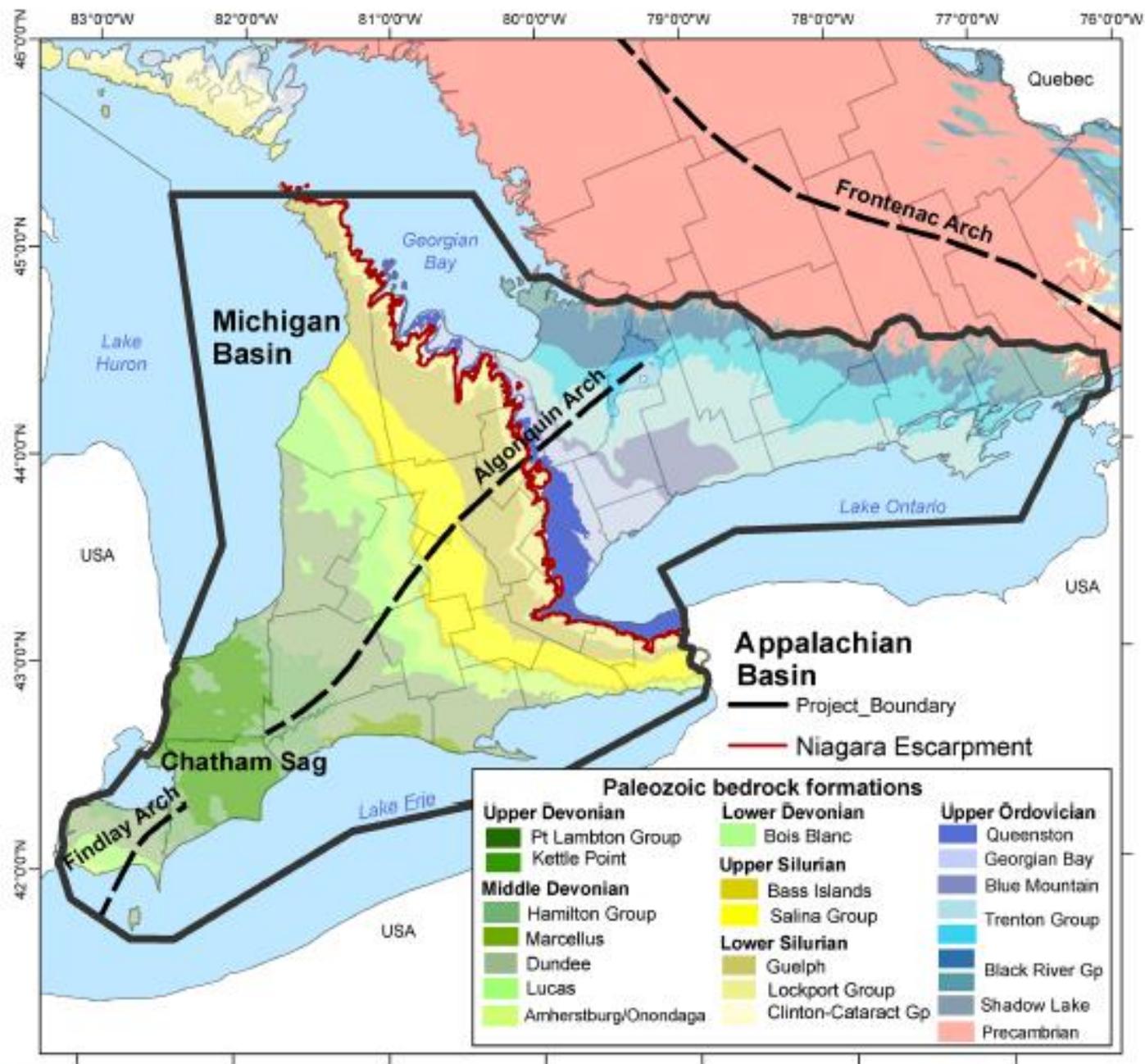


Figure 28.1. Bedrock geology and project boundary of model area. The Niagara Escarpment forms a hydrogeologic boundary between the east and west portions of the study area. Geology from Armstrong and Dodge (2007).

Summary of Field Work and Other Activities 2017; edited by R M Easton, A F Bajc, S M Hamilton, D R B Rainsford, M Duguet, O M Burnham, R-L Simard and R D Dyer; Ontario Geological Survey



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One of our Niagara members, Brian Dear, wrote a lovely article for our Pink Dolomite Saddle newsletter. (And, yes, I'm going to do some more researching on this - both Brian and I are quite intrigued!)

Fossils of Arkona and Hungry Hollow

What is a fossil: A fossil is the preserved evidence of a once-living plant or animal.

During the late Devonian period, most of the land, between the Appalachian Mountains on the east and a stretch of the Rocky Mountains on the west, was covered by an immense, shallow, warm, salt water sea.

This warm body of water called the Tippecanoe Sea was rich in bottom dwelling marine life, various corals, sponges, brachiopods, crinoids, Bryozoan fans, and trilobites - to name a few.

One popular theory states a massive earthquake about 385 million years ago shifted millions of tons of silt and clay down onto the bottom of the sea. This blanketed the sea floor, entombing and preserving everything under hundreds of feet of sediment. Over the next 300 million plus years, this fossil bearing layer was buried even deeper underground.

Eventually the Ausable River cut its way through the clay, shale, and limestone layers to once again expose an abundance of amazing fossils. At Hungry Hollow, you can find some of the very best Devonian fossils in North America.

You can experience and collect many of these fine specimens yourself on the NPGS Field Trip this spring - Saturday, April 27th, 2019.

While there, be sure to stop at the scenic Rock Glen Conservation Area and visit the Arkona Lions Museum and Information Center.

Over millions of years this salt water sea slowly evaporated leaving salt deposits 100s of feet thick below Lake Huron. The world's largest salt mine is the Sifto Salt Mine located in Goderich Ontario. Over 100 miles of roadways, 1800 feet under Lake Huron this Mine produces 26,000 tons of salt a day.