U.S. DEPARTMENT OF THE INTERIOR **USGS** U.S. GEOLOGICAL SURVEY

					- Seaward							
			Northwes	st) 1	4	6	8	10	12	13	14	1
				34-085-20358	34-085-20165	34-085-20920	34-085-20854	34-007-23677	34-007-23853	34-007-22878	34-007-21479	34-00
Silurian (part)		Lockport Group (part)	Not evaluated	GR	GR - 2700	GR 2700	GR - 2800	GR - 2900 T - 2900	GR - 2900 +	GR	GR - 3000	GR -
	Clinton Group	Rochester Shale Irondequoit Ls.		- 2700	uoit Ls.	\$ _ '2800 		- 3000 		T		on Ls.
	Medina Group	"Clinton" sandstone	tst (bart) (bart) (bart) (bart)	2800	2900	2900	- 3000	3	3100		3200	A.W.
		Cabot Head Shale (lower)	2 tst	- 2900		- 3000	- 3100	2 Warranting M	3200		3300	
Ordovician (part)		<u> Medina ss.</u> Queenston Shale (part)	Not evaluated	80 MCFG,	112 MCFG.	1.450 MCFG.	1,100 MCFG.	50 MCFG.	25 MCFG,	2 - ,3300	20 MCFG,	2
Period		Group and Formation	Sequence stratigraphic interpretation	6 BW A.F. (frac. with water) 2	trace oil A.F. (frac. with water) .0 mi	1 BSW A.F. (frac. with water) 1.8 mi 2.2 Lake Count	0.25 BO, 2 BW A.F (frac. with water) 2 mi	1 BO A.F. (frac. with water) 1.4 mi	1 BO A.F. (frac. with water) 1.4 mi	(frac. with water) 1.2 mi 5.	1 BO, 2 BW A.F. (frac. with water, N ₂) 1 mi	(fr: 1.6 mi

Table 1. Identification of drill holes investigated along cross sections B–B' and C–C' [Drill hole locations are shown in figure 2. Although all of the drill holes were used for correlations, only holes marked with an asterisk were shown on the cross sections. Drill holes 18 (cross section B-B') and 50 (cross section C–C') are common to cross section A–A' by Ryder (2000). Townships are listed for drill holes in New York and Ohio, and 7.5' quadrangles are listed for drill holes in Pennsylvania. Abbreviations:







SUBSURFACE CORRELATIONS AND SEQUENCE STRATIGRAPHIC INTERPRETATIONS OF LOWER SILURIAN BASIN OF NORTHEAST OHIO, SOUTHWEST NEW YORK, AND NORTHWEST PENNSYLVANIA

Printed on recycled paper







GEOLOGIC INVESTIGATIONS SERIES I-2741 Version 1.0 Pamphlet accompanies map



Figure 7. Depositional units in the Medina Group and lower part of the Clinton Group along cross sections B-B' and C-C'. The Medina Group is divided into five depositional units labeled A through E. The juxtaposition of these units is significant to sequence stratigraphic interpretations made in this investigation. A, Diagram showing units A, B, and E along 9 mi of cross section B–B'; units C and D are missing because they have been removed by erosion prior to deposition of unit E. B, Diagram showing units A through E along 11 mi of cross section C-C'; shoreface sandstone in the upper part of unit B is thin or absent owing to scouring at the basal contact of unit C. Drill holes are identified in table 1. Abbreviations: Formation (Fm.), Sandstone (Ss.), Shale (Sh., sh.), Limestone (Ls., ls.), equivalent (equiv.).



Figure 8. Summary of sequence stratigraphic interpretations for the Medina Group and Tuscarora Formation along cross sections B-B' and C-C'. Locations of cross sections are shown in figure 2. Medina facies are summarized in figure 7 (units A through E). Tuscarora facies are from Cotter (1982, 1983). Explanation and abbreviations as in cross sections B-B' and C-C'. Each sequence boundary was eroded during a fall

in relative base level and each sequence was deposited during a rise in relative base level. Transgressive systems tracts developed as the shoreline retreated southeast (landward), and highstand systems tracts developed as the shoreline advanced northwest (seaward). A. Sequence 1—Transgressive deposits include

unit A in the Medina Group, and coastal, lagoonal, beach, and shelf deposits in the Tuscarora; highstand deposits include unit B in the Medina Group, and shelf facies in the Tuscarora. Sequence boundary 2 was eroded after the shoreline advanced to areas located northwest of the cross sections.

B, Sequence 2—Transgressive deposits include unit C in the Medina Group, and a veneer of shelf mudrock situated on a ravinement surface (R/2) that was cut as the shoreline retreated to the southeast; highstand deposits include unit D of the Medina Group, and deeper shelf and inner shelf facies in the Tuscarora. C, Sequence boundary 3—Sequences 1 and 2 were incised after the shoreline advanced northwest of the

D, Sequence 3—Transgressive deposits include unit E in the Medina Group, and coastal sand and mud flat deposits in the upper part of the Tuscarora; highstand deposits of sequence 3 were not determined in this investigation.

cross sections.

Sandstone Fluvial overlain by shoreface (Whirlpool Ss.)

Group

ISBN 0-607-96534-9 780607 962

Any use of trade names in this publication is for descriptive purposes only and does not imply endorsement by the U.S. Geological Survey For sale by U.S. Geological Survey Information Services Box 25286, Federal Center, Denver, CO 80225 1-888-ASK-USGS A PDF for this map is available at http://geology.cr.usgs.gov/greenwood-pubs.html

Manuscript approved for publication December 5, 2000