

# BSDMS Summary Report

43 Honey Creek at S.R. 67 at Melmore, OH

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## Site Location:

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**Site ID:** 43

**Site Name:** Honey Creek at S.R. 67 at Melmore, OH

**County:** Seneca

**Nearest City:** Melmore

**State:** OH

**Latitude:** 410120

**Longitude:** 830635

**USGS Station ID:** 4197100

**Route Number:** 67

**Route Class:** State

**Service Level:** Mainline

**Route Direction:** NA

**Highway Mile Point:** 2.43

**Stream Name:** Honey Creek

**River Mile:**

**Contact:**  
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or  
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**Publication:**  
Jackson, K.S., 1996, Evaluation of  
bridge-scour data at selected  
sites in Ohio: U.S. Geological  
Survey Water-Resources  
Investigations Report 97-4182.

## Site Description:

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The site is located at the State Route 67 bridge crossing Honey Creek in Melmore, Ohio. A USGS streamflow gage, Honey Creek at Melmore (04197100), is just downstream from the bridge on the right bank. Annual maximum discharges (1961-1975) and daily discharge from 1976 to current year (1994) are available. The bridge is in a straight portion of a meandering channel. The bridge section is a "panhandle section" with the main-channel flow concentrated on the right side of the channel. Pier 2 lies in the main channel, and Pier 1 lies in the overbank. The channel was modified upstream and downstream from the bridge during construction.

Bed-material samples were collected during annual low-flow surveys.

Notes: All piers are referenced numerically, increasing from left to right, when viewing the upstream face of the bridge while facing in the downstream direction.

Slope in Vicinity (reported in Stream Site Data) is estimated from USGS 7.5-minute quadrangle topographic maps.

Water-surface slope (if reported in Pier Scour Data comments section) is the measured slope between water surfaces at the approach and bridge sections during the scour measurement.

## Elevation Reference

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**Datum:** MSL

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MSL (ft): 0

## Description of Reference Elevation:

RMI = head of 3/8 in. brass bolt in top of right upstream bridge abutment,  
Assumed elevation = 129.39 ft.  
MSL elevation = 846.04 ft.

## Stream Data

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Drainage Area (sq mi):	149	Floodplain Width:	Little
Slope in Vicinity(ft/ft):	0.0014	Natural Levees:	Little
Flow Impact:	Straight	Apparent Incision:	None
Channel Evolution	Premodified	Channel Boundary:	Alluvial
Armoring:	Partial	Banks Tree Cover:	Medium
Debris Frequency:	Occasional	Sinuosity:	Meandering
Debris Effect:	Local	Braiding:	None
Stream Size:	Medium	Anabranching:	None
Flow Habit:	Perennial	Bars:	Narrow
Bed Material:	Gravel	Stream Width Variability:	Random
Valley Setting:	Moderate		

## Roughness Data

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### Manning's n Values

	Left Overbank	Channel	Right Overbank
High:	0.028	0.032	0.06
Typical	0.025	0.03	0.045
Low:	0.028	0.03	0.035

## Bed Material

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Measurement Number	Yr	Mo	Dy	Sampler	D95 (mm)	D84 (mm)	D50 (mm)	D16 (mm)	SP	Shape	Cohesion
AP-1	1993	7	12		65	54	1.4	0.07	2.65		Unknown

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AP-2	1994	6	16	72	58	28	4.1	2.65	Unknown
BR-1	1990	9	6	34	25	10.3	2.5	2.65	Non-Cohesive
BR-2	1991	6	20	71	62	7.2	0.14	2.65	Unknown
BR-3	1992	7	2	42	33	5.5	0.02	2.65	Unknown
BR-4	1993	7	12	27	20	6.2	0.19	2.65	Unknown
BR-5	1994	6	16	33	19	5.6	0.6	2.65	Unknown
P1-1	1990	9	6	0.68	0.3	0.03	0.004	2.65	Non-Cohesive
P1-2	1991	6	20	8.4	3.7	0.79	0.009	2.65	Unknown
P1-3	1992	7	2	6.2	1.2	0.06		2.65	Unknown
P1-4	1993	7	12	0.55	0.1	0.05	0.07	2.65	Unknown
P1-5	1994	6	16	7	3.5	0.86	0.03	2.65	Unknown
P2-1	1990	9	6	44	34	18	9.3	2.65	Non-Cohesive
P2-2	1991	6	20	72	66	44	10.5	2.65	Unknown
P2-3	1992	7	2	85	69	54	12	2.65	Unknown
P2-4	1993	7	12	66	59	43	14	2.65	Unknown

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P2-5      1994    6    16                      52    30    10.5    1.4    2.65                      Unknown

## Bed Material Comments

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**Measurement No:** AP-1

Approach-section composite sample

**Measurement No:** AP-2

Approach-section composite sample

**Measurement No:** BR-1

Bridge-section composite sample, collected along the upstream bridge face.

**Measurement No:** BR-2

Bridge-section composite sample, collected along the upstream bridge face.

**Measurement No:** BR-3

Bridge-section composite sample, collected along the upstream bridge face.

**Measurement No:** BR-4

Bridge-section composite sample, collected along the upstream bridge face.

**Measurement No:** BR-5

Bridge-section composite sample, collected along the upstream bridge face.

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**Measurement No: P1-1**

Sample collected at the upstream face of pier 1.

**Measurement No: P1-2**

Sample collected at the upstream face of pier 1

**Measurement No: P1-3**

Sample collected at the upstream face of pier 1

**Measurement No: P1-4**

Sample collected at the upstream face of pier 1

**Measurement No: P1-5**

Sample collected at the upstream face of pier 1

**Measurement No: P2-1**

Sample collected at the upstream face of pier 2.

**Measurement No: P2-2**

Sample collected at the upstream face of pier 2

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**Measurement No:** P2-3

Sample collected at the upstream face of pier 2

**Measurement No:** P2-4

Sample collected at the upstream face of pier 2

**Measurement No:** P2-5

Sample collected at the upstream face of pier 2

## Bridge Data

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**Structure No:** SEN-67-0243

**Length(ft):** 225.5

**Width(ft):** 34

**Number of Spans:** 3

**Vertical Configuration:** Sloping

**Low Chord Elev (ft):** 837.3

**Upper Chord Elev (ft):** 841.7

**Overtopping Elev (ft):** 841.7

**Skew (degrees):** 0

**Guide Banks:** None

**Waterway Classification:** Main

**Year Built:** 1952

**Avg Daily Traffic:** 1665

**Plans on File:** Yes

**Parallel Bridges:** No

**Upstream/Downstream:** Unknown

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Continuous Abutment: No

Distance Between Centerlines:

Distance Between Pier Faces:

## Bridge Description:

The bridge has a concrete deck on steel beam girders and solid-wall round-nose concrete piers. The channel was modified upstream and downstream from the bridge during construction. The site plans are dated 1951. The piers are referenced from the left to right when looking downstream.

## Abutment Data

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Left Station: 120.9975

Right Station: 123.2525

Left Skew (deg): 0

Right Skew (deg) 0

Left Abutment Length (ft): 47

Right Abutment Length (ft) 47

Left Abutment to Channel Bank (ft): 85

Right Abutment to Channel Bank (ft): 44

Left Abutment Protection:

Right Abutment Protection

Contracted Opening Type: III

Embankment Skew (deg): 0

Embankment Slope (ft/ft): 2

Abutment Slope (ft/ft) 2

Wingwalls: No

Wingwall Angle (deg): 0

## Pier Data

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Pier ID	Bridge Station(ft)	Alignment	Highway Station	PierType	# Of Piles	File Spacing(ft)
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1	71.25	0	121.7	Single	0
2	155.25	0	122.55	Single	0

Pier ID	Pier Width(ft)	Pier Shape	Shape Factor	Length(ft)	Protection	Foundation
1	2.75	Round		35.6	None	Poured
2	2.75	Round		35.6	None	Poured

Pier ID	Top Elevation(ft)	Bottom Elevation(ft)	Foot or Pile Cap Width(ft)	Cap Shape	File Tip Elevation(ft)
1	817.5	814.5	6	Square	
2	816	813	6.5	Square	

## Pier Description

Pier ID 1

The piers are poured, formed concrete with a slight taper and round nose.

Pier ID 2

Same as Pier 1.

## Pier Scour Data

Pier ID	Date	Time	USOrDS					
2	2/2/90	15:30	Upstream					
2	7/15/92	14:25	Upstream					
2	7/17/92	10:40	Upstream					
Pier ID	Scour Depth	Accuracy (ft)	Side Slope (ft/ft)	TopWidth (ft)	Apprch Vel (ft/s)	Apprch Depth(ft)	Effective Pier Width	Skew to Flow(deg)
2	1.8	0.5	3.3	20	3.9	6.4	3.2	0
2	1.3	0.5	5.7	15	3.8	6.9	3.1	11.5
2	1.5	0.5	4.9	15	3.8	6.9	3.1	0
PierID	Sediment Transport	Bed Material	BedForm	Trough (ft)	Crest (ft)	Sigma	Debris Effects	



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## Stage and Discharge Data

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Peak Discharge					Flow (cfs)	Qacc	Peak Stage					Stage (ft)	Water Temp (C)	Return Period(yr)
year	mo	dy	hr	mi			year	mo	dy	hr	mi			
1992	7	17	10:40		1380							22	2	
1992	7	15	14:25		1200							22.5	2	
1990	2	2	15:30	30	1190	10				0		4	2	

## Hydrograph

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Hydrograph Number	Year	Month	Day	Hr	Min	Sec	Stage(ft)	Discharge (cfs)
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## Supporting Files

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