

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL SURVEY



CORE LOG
File Number: 3571

FILE NO.: 3571

COUNTY: Preble

TOWNSHIP: Monroe

SECTION: T9N, R2E, Sec. 6

QUADRANGLE: New Madison 7.5-min.

FIELD NO.: MCD 3, Hole 2

MEASURED BY: R. R. Pavay

DATE: July 29, 2004

STATE PLANE SOUTH 1983 COORDINATES: X: 1,351,779 Y: 702,438

REMARKS: Site located by GPS at 39° 54' 28.7" N, 84° 41' 55.0" W.

4121 Eldorado-Whitewater Rd., Eldorado, OH 45321. Hole was drilled for the U.S. Geological Survey, Water Resources Division, Columbus, OH. Geology was supervised by Mary Ann Thomas of the USGS for arsenic in groundwater investigation. Drilled by USGS-WRD Wisconsin District with a CME-75, 4" diameter continuous sampler to 43 ft., switched to 3" diameter split-spoon sampler.

Top of interval (in feet)	Bottom of interval (in feet)	Interval thickness (in feet)	Cumulative thickness (in feet)	Description
0	.3	.3	.3	Mostly silt, some fine sand, dark brown, moist, turf roots, non-calcareous.
.3	2.0	1.7	2.0	Silty sandy till, common pebbles, mottled medium to light brown, calcareous at 1.0 ft., secondary carbonate mottling. Very hard and dry. 1.3 ft. recovered.
2.0	7.5	5.5	7.5	Silty sandy till, medium to light brown, mottling decreases with depth, very calcareous, common horizontal partings and vertical fractures lined with secondary carbonate, dry and hard. Very broken from 5.0 to 6.3 ft. Total of 6.8 ft. recovered.
7.5	11.3	3.8	11.3	Silty sandy till, medium brown, some orange-brown blobs, massive, calcareous, no obvious secondary carbonate, pebbles up to 2.5".
11.3	16.0	4.7	16.0	Silty sandy till, medium gray, some brownish-gray spots, massive, calcareous, slightly moist, hard. 4" cobble at base.
16.0	27.2	11.2	27.2	Silty sandy till, medium gray, pebbly, massive, calcareous, slightly moist, hard.
27.2	27.7	.5	27.7	Silty fine sand, medium to light gray, calcareous, moist.
27.7	28.2	.5	28.2	Silt, brownish-gray, massive, calcareous, moist.

28.2	28.8	.6	28.8	Silty sandy till, grayish-brown, pebbly, massive, calcareous, slightly moist, hard.
28.8	29.1	.3	29.1	Sandy silty gravel, grayish-brown, calcareous, moist.
29.1	31.7	1.6	31.7	Silty sandy till, grayish-brown, pebbly, massive, calcareous, slightly moist, hard.
31.7	33.7	2.0	33.7	Medium sand to 1" pebbles, gray, very poorly sorted, subrounded to angular, calcareous.
33.7	34.0	.3	34.0	Fragments of silty sandy till, dark grayish-brown, calcareous, with sandy wash from above interval.
34.0	35.0	1.0	35.0	No core recovery.
35.0	38.5	3.5	38.5	Silty sandy till, brownish-gray, massive, calcareous, hard.
38.5	39.2	.7	39.2	Silt, brownish-gray, massive, calcareous, a few small pebbles, soft.
39.2	39.5	.3	39.5	Silty sandy till, brownish-gray, massive, calcareous, hard.
39.5	40.0	.5	40.0	Fragments of silty sandy till, brownish-gray, calcareous, hard, and loose pebbles, appears to be washed during drilling.
40.0	42.0	2.0	42.0	Silty sandy till, brownish-gray, changing downward to grayish-brown, massive, calcareous, hard.
42.0	43.0	1.0	43.0	Fragments of silty sandy till, light to medium brown, dry, hard.
43.0	44.0	1.0	44.0	Begin split-spoon samples. Silty sandy till, brownish-gray, massive, calcareous, hard.
44.0	47.0	3.0	47.0	No core recovery.
47.0	49.0	2.0	49.0	Medium to fine sand with some silt, coarsening downward to medium to coarse sand with some pebbles up to .25", gray, calcareous, settled wet in box.
49.0	52.0	3.0	52.0	No core recovery.
52.0	52.5	.5	52.5	Silt to medium sand, brownish gray, poorly sorted, calcareous, settled wet in box.
52.5	53.8	1.3	53.8	Silty sandy till, brownish-gray, massive, calcareous, hard.
53.8	57.0	3.2	57.0	No core recovery.
57.0	57.5	.5	57.5	Silty sandy till, brownish-gray, calcareous, very hard.
57.5	59.0	1.5	59.0	Clayey silt till, yellowish brown to orange-brown, leached, not as hard as above. Some medium gray reduction mottles. Probable paleosol.
59.0	62.0	3.0	62.0	No core recovery.
62.0	63.3	1.3	63.3	Silty sandy till with some clay, mottled medium brown to medium gray, becomes grayer with depth, calcareous, hard.
63.3	64.8	1.5	64.8	No core recovery.
64.8	65.0	.2	65.0	Fragments of silty sandy till with some clay, medium gray, calcareous, very hard.
65.0				End of hole.

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL SURVEY

CORE LOG
File Number: 3570



FILE NO.: 3570
COUNTY: Preble
TOWNSHIP: Monroe
SECTION: T9N, R2E, Sec. 6
QUADRANGLE: New Madison 7.5-min.
FIELD NO.: MCD3, Hole 1
MEASURED BY: E.M. Swinford
DATE: July 26, 2004
SURFACE ELEVATION: 1150 FEET S.L.
TOTAL DEPTH: 177.0 FEET
STATE PLANE SOUTH 1983 COORDINATES: X: 1,351,732 Y: 702,441
REMARKS: Site located by GPS at 39° 54' 28.7"N, 84° 41' 55.6"W.
4121 Whitewater-Eldorado Road, Eldorado, OH 45321. Hole was drilled for the U.S. Geological Survey, Water Resources Division, Columbus, OH. Geology was supervised by Mary Ann Thomas of the USGS for arsenic in groundwater investigation. Bedrock units are the Lockport Dolomite and the Laurel Dolomite.

Top of interval (in feet)	Bottom of interval (in feet)	Interval thickness (in feet)	Cumulative thickness (in feet)	Description
0	73.0	73	73	Glacial drift – not sampled
73.0	73.3	0.3	0.3	Dolomite, light gray (5Y 7/1), medium to fine crystalline, slightly argillaceous to clean, well-developed moldic porosity and abundant petroliferous staining, black (5Y2 5/1) to live petroleum tar oozing for rock.
73.3	76.7	3.4	3.7	Dolomite, light gray (5Y 7/1) to pale yellow (5Y 8/2), fine to coarse crystalline, sucrosic, generally clean, highly dolomitized fossil remnants, friable in part, massive bedded with scattered layers of well-developed porosity and medium crystalline dolomite within by layers of lower porosity and finer crystalline dolomite.
76.7	77.3	0.6	4.3	Clay and dolomite, soft, very friable, pebble-sized clasts of clay, dark olive gray (5Y 3/2), soft to poorly indurated and particles of sucrosic dolomite. Possible fracture fill or inwashed paleosol(?).
77.3	94.7	17.4	21.7	Dolomite, pale yellow (5Y 8/2) to light gray (5Y 7/1), fine to coarse crystalline, clean to slightly argillaceous, mottled, moldic porosity with some vuggy porosity, massive bedded. General color trend from top to bottom is pale-yellow changing to gray. Some high-angle fractures from 83.0' to 86.4': lower contact sharp.

94.7	96.9	2.2	23.9	Dolomite, light gray (5Y 7/1) to pale yellow (5Y 8/2), fine crystalline intervals 94.7' to 95.1' and from 97.0' to 97.4' with medium to coarse crystalline intervals between, clean to slightly argillaceous, sucrosic, moldic, to vuggy porosity, high angle fractures, massive bedded. Lower contact at base of lower fine crystalline zone.
96.9	103.0	6.1	30.0	Dolomite, pale yellow (5Y 8/2) to light gray (5Y 7/2), coarse to medium crystalline, slightly argillaceous to clean, with zones of fine crystalline dolomite pale yellow (5Y8/2) somewhat friable dominated by well-developed moldic and intercrystalline porosity. High angle fractures from 99.4' to 100.8'.
103.0	108.7	5.7	35.7	Dolomite, pale yellow (5Y 8/2) to light gray (5Y 7/1), fine to coarse crystalline, moldic, vuggy, and intercrystalline porosity containing thin to medium beds of light pale yellow (5Y8/4). High-angle fractures from 103.4' to 103.7', from 104.6' to 105.0', 106.0 to 107.5'. Shale laminae, light greenish gray (Gley1 7/1), soft, present in the interval from 104.3 to 105.2'.
108.7	118.2	9.5	45.2	Dolomite, light gray (5Y7/1), coarse crystalline with thin intervals of fine to medium crystalline, clean to slightly argillaceous, moldic and intercrystalline porosity, with some intervals of vuggy porosity, generally massive bedded. High angle fractures at 115.0'.
118.2	124.6	6.4	51.6	Dolomite, pale yellow (5Y 8/2) to light gray (5Y 7/1), generally fine to medium crystalline, minor intercrystalline to fine moldic porosity, massive bedded, , medium gray (2.5Y 5/1) argillaceous laminae from 121.2 to 121.6'. Distinct pale yellow zone from 122.8' to 124.6'. Lower contact sharp at color change at base of pale yellow zone.
124.6	146.7	22.1	73.7	Dolomite, light gray (5Y 7/1), coarse crystalline, well developed moldic, vuggy, and intercrystalline porosity throughout, massive bedded, clean to slightly argillaceous, with thin zones of sucrosic, fine crystalline dolomite; high angle fractures at 129.6'. Some yellow (2.5Y 7/8) iron stain along bedding planes at 138.6' to 137.3', at 141.0', and 142.1'.
146.7	149.8	3.1	76.8	Dolomite, light gray (5Y 7/1), fine to coarse crystalline, thin to massive bedded, thin zones of moldic and intercrystalline porosity, with moderately indurated, gray (5Y 6/1), dolomitic, shale laminae that are discontinuous, soft from 146.7' to 147.3' and from 148.5' to 148.7'.
149.8	154.6	4.8	81.6	Dolomite, light gray (5Y7/1) to gray (5Y 6/1), mottled, coarse crystalline, massive bedded, abundant moldic and intercrystalline porosity, grades downward into pale yellow (5Y 8/2) dolomite in lowest 1.00'. Lower contact sharp at interface with chert nodule. Approximate base of the Lockport Dolomite.

154.6	158.1	3.5	85.1	Dolomite, light gray (5Y 7/2) to pale yellow (5Y 8/2), fine crystalline with minor thin intervals of coarse, sucrosic dolomite beds; intercrystalline and moldic porosity in upper 3 feet. Chert, light gray (5Y 7/1) to white (5Y 8/1), mottled, nodular bedded, fossil remnants and dark pyritic or manganese (?) -rich zones. Sparse greenish gray (Gley1 4/1), discontinuous, dolomitic shale laminae. Approximate top of the Laurel Dolomite.
158.1	169.2	11.1	96.2	Limestone, mottled light gray (5Y 7/1) to pale yellow (5Y 8/2), dolomitic, fine to medium crystalline, nodular bedded; chert, light grey to white (Gley1 7/1) (Gley1 8/1) with pyrite and manganese in chert. Lower contact gradational.
169.2	177.0	7.8	104.0	Limestone, greenish gray (Gley1 6/1) to dark greenish gray (Gley1 4/1), dolomitic, argillaceous, bioclastic, mottled, minor chert nodules that are light gray (Gley2 7/1); interval is mottled in the lowermost 2 feet, dolomitic, and argillaceous more thin above.
177.0		0	T.D	

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CORE LOG
File Number: 3572

FILE NO.: 3572

COUNTY: Preble

TOWNSHIP: Monroe

SECTION: T9N, R2E, Sec. 17

QUADRANGLE: New Madison 7.5-min.

FIELD NO.: MCD 3, Hole 5

MEASURED BY: R. R. Pavey, E. M. Swinford

DATE: Aug. 19 & 26, 2004

STATE PLANE SOUTH 1983 COORDINATES: X: 1,357,661 Y: 690,897

REMARKS: Site located by GPS at 39° 52' 36.0" N, 84° 40' 35.9" W.

7160 State Rt.726, Eldorado, OH 45321. Hole was drilled for the U.S. Geological Survey, Water Resources Division, Columbus, OH. Geology was supervised by Mary Ann Thomas of the USGS for an arsenic in groundwater investigation. Drilled by Bowser-Morner with a rotosonic rig producing 4" continuous core.

Top of interval (in feet)	Bottom of interval (in feet)	Interval thickness (in feet)	Cumulative thickness (in feet)	Description
0.0	.8	.8	.8	Silt, some sand, few pebbles, light to medium brown, many roots, friable, non-calcareous.
.8	2.2	1.4	2.2	Clayey silty till, common pebbles, medium brown, mottled with orange-brown, common black organic pods, weakly calcareous at 1.8 ft.
2.2	3.9	1.7	3.9	Silty sandy till, common pebbles, medium brown, 1.5" pebble at 3.2 ft., calcareous, massive.
3.9	10.0	6.1	10.0	No core recovery.
10.0	10.5	.5	10.5	Muddy poorly sorted fine sand to fine gravel, light to medium brown, fluid, calcareous.
10.5	12.5	2.0	12.5	Silty sandy till, common pebbles, mottled medium yellow-brown to medium brownish gray, irregular horizontal parting, calcareous.
12.5	14.2	1.7	14.2	Silty sandy till, common pebbles, medium gray with medium yellow-brown oxidation on joint faces, calcareous.
14.2	29.1	14.9	29.1	Silty sandy till, common pebbles, medium gray, calcareous, massive.
29.1	30.0	.9	30.0	Silt, light to medium gray, wet, grading downward to silty very fine sand, light gray, moist, calcareous.
30.0	32.8	2.8	32.8	No core recovery.
32.8	33.9	1.1	33.9	Very fine sand to silt, grayish brown, wet, calcareous.

33.9	35.7	1.8	35.7	Medium sand to small cobbles, brown, poorly sorted, wet, calcareous.
35.7	36.2	.5	36.2	Silty sandy till, medium yellow-brown, calcareous.
36.2	36.6	.4	36.6	Fine sand, light brown, wet, calcareous.
36.6	37.2	.6	37.2	Medium sand to 1" pebbles, brown, poorly sorted, wet, calcareous.
37.2	40.0	2.8	40.0	Silty sandy till, grayish brown, calcareous, massive.
40.0	41.0	1.0	41.0	No core recovery.
41.0	41.2	.2	41.2	Medium to coarse sand, brown, wet, calcareous.
41.2	48.3	7.1	48.3	Silty sandy till, medium brownish gray, calcareous, massive.
48.3	52.4	4.1	52.4	Medium sand to medium gravel, grayish brown, with fragments of silty fine sand to medium gravel, dark brownish gray, cohesive, friable, calcareous.
52.4	53.0	.6	53.0	Silty fine sand to fine gravel, medium brown, cohesive, calcareous.
53.0	56.0	3.0	56.0	Silt to fine sand, some grains of coarse sand to fine gravel, light to medium brown, calcareous, moist, grading downward to silt and fine sand with some clay, medium brown, calcareous, moist.
56.0	60.0	4.0	60.0	Silty sandy till, common pebbles, light to medium brown grading downward to grayish brown, calcareous, some platy structure in upper 2.4 ft., dry.
60.0	69.3	9.3	69.3	Silt and fine sand, medium brown, well sorted, calcareous, moist.
69.3	71.7	2.4	71.7	Medium sand, medium brown, well sorted, calcareous, moist.
71.7	78.8	7.1	78.8	Fine to medium sand, medium brown, calcareous, moist, with clasts of silty fine sand, dark brown, cohesive, calcareous, moist.
78.8	80.0	1.2	80.0	Clayey silt, mottled dark gray to dark grayish brown, calcareous, moist.
80.0	80.7	.7	80.7	Fine to medium sand, medium brown, calcareous, moist, with clasts of silty fine sand, dark brown, cohesive, calcareous, moist.
80.7	90.0	9.3	90.0	Clayey silt, medium brown to grayish brown, calcareous, massive, moderately plastic, moist.
90.0	90.5	.5	90.5	Silt, dark brownish gray, some pebbles in lower part, leached. Probable paleosol.
90.5	91.7	1.2	91.7	Clayey silt till, many pebbles, medium to dark brown with common black organic streaks, weakly calcareous to leached, moist, HCl releases odor of sulfuric compound, organic odor on fresh break. Probable paleosol.
91.7	102.7	11.0	102.7	Clayey silt till, medium to dark brown, moderately calcareous, moist, very broken, becoming fragmented and muddy with depth, organic odor on fresh break.
102.7	104.7	2.0	104.7	Silt, medium brown, calcareous, broken.
104.7	107.1	2.4	107.1	Clayey silt till, dark brown, very calcareous, hard, dry.
107.1	108.3	1.2	108.3	Very fine sand and silt grading downward from light brown to nearly white, weakly calcareous, moist. Probable paleosol.

108.3	110.0	1.7	110.0	Dolomite fragments, with very fine sand, silt, and clay, light tan, weakly calcareous. Probable paleosol.
110.00	112.0	2.00	112.00	Dolomite, pale-yellow (5Y 8/2) to light gray (N7), fine to medium crystalline, intercrystalline and moldic porosity, massive bedded; yellowish-brown iron stain along select bedding planes; lower contact in missing interval.
112.00	112.3	.30	112.3	Missing interval.
112.3	114.0	1.70	114.0	Dolomite, light-gray (N7) to medium- light gray (N6), coarse to fine crystalline, slightly argillaceous, zones of moldic porosity and some intercrystalline porosity, stylolitic, medium to thin bedded with thinner bedded zone being more argillaceous; bedding planes appear water worn. Lower contact in missing interval.
114.0	115.5	1.50	115.5	Missing interval.
115.5	117.4	1.90	117.4	Dolomite, light-gray (N7) to medium-light gray (N6), coarse to fine crystalline, slightly argillaceous, zones of moldic porosity and some intercrystalline porosity, stylolitic, medium to thin bedded with thinner bedded zone being more argillaceous, bedding planes appear water worn. High angle fractures at 115.5 – 116.3. Lower contact sharp and undulatory where light gray (N7) dolomite in sharp contact with medium light gray (N6) dolomite with medium gray (N5) .03 layer at contact.
117.4	119.6	2.20	119.6	Dolomite, light gray (N7), light medium gray (N6) to light olive gray (5Y 6/1), fine to medium crystalline, light gray chert, fossil brachiopods molds, intercrystalline porosity with moldic porosity along bedding planes, stylolitic in part, medium to thin bedded; core broken along bedding planes. Rock core is Silurian Lockport Dolomite. Total Depth.