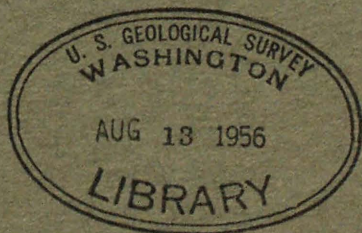


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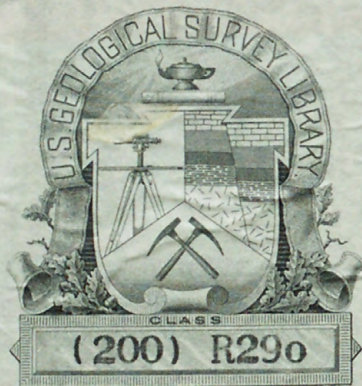
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Descriptive logs of exploratory holes drilled during 1952 by the

U. S. Geological Survey in Dubuque County, Iowa

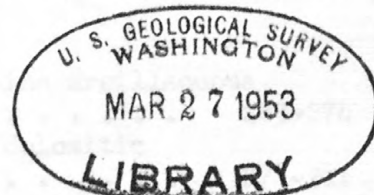
by A. E. Flint and C. E. Brown
Arthur Emerson 1913

The exploratory holes were drilled as part of a larger geologic investigation, the objective of which is to determine in the Dubuque, Iowa, area the probable occurrence of zinc and lead ore stratigraphically lower than that which has been mined.

The primary purpose of the drilling was to supply information required for geologic mapping in upland areas where bedrock exposures are sparse or absent. Where possible, the holes were located also on the extension of known mineralized trends.

Seven holes aggregating 1,687 feet were drilled with cable tools. Descriptive logs, prepared by A. E. Flint and C. E. Brown from binocular microscope study of cuttings that were recovered from the drilling, are accompanied by assay values of significant mineralized samples. Index maps show hole locations.

report
This ~~map~~ is preliminary and has not been edited or reviewed for conformity with U. S. Geological Survey standards and nomenclature.



Released Mar. 16, 1953

Schlitzer hole no. 1

Location: 690 feet east, 700 feet south of NW
corner of NE¹ of sec. 9, T. 89 N.,
R. 2 E.

Driller: J. McQuitty
~~4~~/8/52-~~4~~/21/52
4 4

Collar elevation: 901.7 ft.
Total depth: 300 ft.
Depth to water: 185 ft.
Sample study and logging:
C. E. Brown

	Depth (Feet)
Surficial	
soil, loess and residuum	0-28
MAQUOKETA FORMATION	
shale, dark brown, carbonaceous; phosphatic nodules and depauperate fossils common lower 3 feet	28- ³⁹ 30
<i>dwarf</i>	
CALENA FORMATION	
Dubuque member	
dolomite, buff and gray, fine granular, argillaceous . .	39-60
dolomite as above except crystalline in part	60-80
Stewartville member	
dolomite, buff, fine-medium crystalline, slightly vuggy and limonite stained	80-100
dolomite, buff, fine-medium crystalline	100-130
dolomite and dolomite sand, buff, fine-medium crystalline, soft, in part limonite stained	130-152
Prosser member	
dolomite, buff, fine-medium crystalline, soft and broken; slight limonite staining; sparse tan and white chert	152-160
dolomite as above; abundant chert as above	160-188
dolomite as above but hard; chert as above common . . .	188-205
dolomite as above; chert sparse to absent	205-220
dolomite as above but is drab in part, hard; chert as above, common	220-236
dolomite as above but soft and broken; chert common to abundant; crevice clay common	236-241
dolomite, mainly drab, fine-medium crystalline, moderately hard; chert common and sparse calcite	241-255
dolomite as above, vuggy and in part recrystallized; sparse calcite	255-263
DECORAH FORMATION	
Ion member ("gray" and "blue" beds)	
dolomite, gray, mottled, fine-medium crystalline argillaceous sparse green shale	263-274
dolomite as above but very argillaceous, and dolomitic limestone	274-281

Schlitzer hole no. 1 cont.

'Guttenberg' member ("oil rock")
 limestone, light tan, fossiliferous, in part sublithographic;
 sparse brown shale 281-298
 Spechts Ferry member ("clay bed")
 shale, blue-green and gray dense limestone 298-300

Estimated iron content

<u>Depth</u>	<u>Percentages</u>
240-245	2%
245-250	4
250-255	2
255-260	1
260-275	tr - $\frac{1}{2}$
295-300	$\frac{1}{2}$

schlitzer hole no. 2

Location: 1140 feet east, 1180 feet north of SW
corner of ~~SE~~¹ sec. 4, T. 89 N., R. 2
E.
Driller: J. McQuitty
4/25/52-5/1/52

Collar elevation: 896.7 ft.
Total depth: 158 ft.
Depth to water: None
Study of samples and logging:
A. E. Flint

	depth (Feet)
Surficial soil, loess and residuum	0-12
MAQUOKETA FORMATION shale, brown; sparse gray argillaceous dolomite; sparse phosphatic, depauperate fossils; limonite common .	12-28
GALENA FORMATION Dubuque member dolomite, mainly buff, fine granular, argillaceous . . .	28-65
Stewartville member dolomite, buff, mainly fine-medium crystalline, soft; limonite common	65-75
dolomite as above but very soft, broken; dolomite sand and limonite common	75-90
dolomite, buff, fine-medium crystalline, soft sparse; calcite and limonite	90-142
Prosser member dolomite as above; sparse white leached chert	142-150
dolomite, buff, mainly medium crystalline (recrystallized?); <u>gray and drab chert, common; sparse limonite</u>	150-158

Estimated lead content

depth	Percentages
65-70	1.29%*
70-75	10.1%*
85-90	$\frac{1}{2}\%$
90-100	tr - tr+
115-120	tr

* Assayed value

Hilby hole no. 1

Location: 135 feet east, 1390 feet south of
center of sec. 17, T. 89 N., R.
2 E.

Driller: C. Conner
4/9/52-4/14/52

Collar elevation: 849.0 ft.
Total depth: 285 ft.
Depth to water: 130 ft.
Sample study and logging:
A. E. Flint

	depth (feet)
Surficial	
soil and residuum	0-6
MAQUOKETA FORMATION	
shale, dark brown; abundant calcite and depauperate fossils	6-16
GALENA FORMATION	
Dubuque member	
dolomite, gray, fine and medium crystalline, very argillaceous; sparse limonite	16-30
dolomite, gray-buff, fine granular argillaceous	30-55
Stewartville member	
dolomite, gray-drab, fine-medium and medium crystalline.	55-90
dolomite, drab, fine-medium crystalline, hard	90-133
Prosser member	
dolomite as above; sparse chert, calcite and limonite stain	133-140
dolomite as above; gray chert very common	140-170
as above but chert is sparse	170-180
as above but chert is common	180-190
as above but chert is sparse to absent	190-205
dolomite as above; sparse tan fine-grained limestone; sparse chert	205-215
limestone brown-drab, fine-medium crystalline; chert sparse	215-225
limestone as above; chert common to abundant	225-235
as above but chert is sparse	235-243
DECORAH FORMATION	
Ion member ("gray" and "blue" beds)	
limestone, gray-brown and gray, fine-medium crystalline, mottled, argillaceous; green shale sparse	243-256
limestone, as above but dark gray and very argillaceous green shale sparse	256-263
Guttenberg member ("oil rock")	
limestone, tan with light brown specks, fine-medium crystalline upper 10 feet, very fine granular lower 5 feet; red- brown shale common	263-278
Spechts Ferry member ("clay bed")	
shale, blue-green and gray; dense, limestone fossil- iferous	278-285

Hilby hole no. 1 cont.

Estimated zinc and iron content

Depth	Zinc	Iron
15-25	trace	2%
25-30	trace †	trace †
30-35	$\frac{1}{4}$	trace
35-40	trace	trace †
40-45	trace	trace †
45-50	trace	trace †
50-60		trace
145-180		trace
190-195		1
215-225		trace †
240-260		trace - trace †
275-285		trace

Location: 1200 feet west of Hilby hole no. 1, about 290 ft. in water, 85 ft. from shore.

Driller: W. Connor
Date: 3/1/50-3/12/50

Official
Hilby hole no. 1
ANOMALY

1200 feet west of Hilby hole no. 1, about 290 ft. in water, 85 ft. from shore.

Section: 1200 feet west of Hilby hole no. 1, about 290 ft. in water, 85 ft. from shore.

15-25: dolomite, buff and buff, fine granular, crystalline, argillaceous.

25-30: dolomite, buff, fine-medium mainly crystalline, argillaceous.

30-35: dolomite, buff and buff, fine-medium crystalline.

35-40: dolomite, buff and buff, fine-medium crystalline, argillaceous.

40-45: dolomite, buff and buff, fine-medium crystalline, argillaceous.

45-50: dolomite, buff and buff, fine-medium crystalline, argillaceous.

50-60: dolomite, buff and buff, fine-medium crystalline, argillaceous.

145-180: dolomite, buff and buff, fine-medium crystalline, argillaceous.

190-195: dolomite, buff and buff, fine-medium crystalline, argillaceous.

215-225: dolomite, buff and buff, fine-medium crystalline, argillaceous.

240-260: dolomite, buff and buff, fine-medium crystalline, argillaceous.

275-285: dolomite, buff and buff, fine-medium crystalline, argillaceous.

Section: 1200 feet west of Hilby hole no. 1, about 290 ft. in water, 85 ft. from shore.

15-25: dolomite, buff and buff, fine granular, crystalline, argillaceous.

25-30: dolomite, buff, fine-medium mainly crystalline, argillaceous.

30-35: dolomite, buff and buff, fine-medium crystalline.

35-40: dolomite, buff and buff, fine-medium crystalline, argillaceous.

40-45: dolomite, buff and buff, fine-medium crystalline, argillaceous.

45-50: dolomite, buff and buff, fine-medium crystalline, argillaceous.

50-60: dolomite, buff and buff, fine-medium crystalline, argillaceous.

145-180: dolomite, buff and buff, fine-medium crystalline, argillaceous.

190-195: dolomite, buff and buff, fine-medium crystalline, argillaceous.

215-225: dolomite, buff and buff, fine-medium crystalline, argillaceous.

240-260: dolomite, buff and buff, fine-medium crystalline, argillaceous.

275-285: dolomite, buff and buff, fine-medium crystalline, argillaceous.

Section: 1200 feet west of Hilby hole no. 1, about 290 ft. in water, 85 ft. from shore.

15-25: dolomite, buff and buff, fine granular, crystalline, argillaceous.

25-30: dolomite, buff, fine-medium mainly crystalline, argillaceous.

30-35: dolomite, buff and buff, fine-medium crystalline.

35-40: dolomite, buff and buff, fine-medium crystalline, argillaceous.

40-45: dolomite, buff and buff, fine-medium crystalline, argillaceous.

45-50: dolomite, buff and buff, fine-medium crystalline, argillaceous.

50-60: dolomite, buff and buff, fine-medium crystalline, argillaceous.

145-180: dolomite, buff and buff, fine-medium crystalline, argillaceous.

190-195: dolomite, buff and buff, fine-medium crystalline, argillaceous.

215-225: dolomite, buff and buff, fine-medium crystalline, argillaceous.

240-260: dolomite, buff and buff, fine-medium crystalline, argillaceous.

275-285: dolomite, buff and buff, fine-medium crystalline, argillaceous.

Young hole no. 1

Location: 1700 feet east, 140 feet south of
center of sec. 21, T. 89 N., R. 2 E.
Driller: ~~C. E.~~ Connor
3/1/52-3/14/52

Collar elevation: 829.8 ft.
Total depth: 290 ft.
Depth to water: 85 ft.
Sample study and logging:
C. E. Brown

	depth (feet)
Surficial	
soil, loess and residuum	0-15
MAQUOKETA FORMATION	
shale, medium to dark brown; depauperate fossils and phosphatic, nodules common	15-27
GALENA FORMATION	
Dubuque member	
dolomite, gray and buff, fine granular, argillaceous . .	27-55
dolomite, buff, fine-medium mainly crystalline, argilla- ceous	55-60
Stewartville member	
dolomite, buff and drab, fine-medium crystalline; . . .	60-130
dolomite as above, buff and drab, vuggy.	130-142
Prosser member	
dolomite as above; tan and gray chert, sparse	142-150
dolomite, drab, fine-medium crystalline, in part vuggy; abundant gray chert	150-195
dolomite, buff and drab, fine-medium crystalline; chert sparse	195-220
dolomite as above; white leached chert common to abundant	220-240
dolomite as above, vuggy; soft and broken 241 to 245 feet	240-247
DECORAH FORMATION	
Ion member ("gray" and "blue" beds)	
dolomite, brown and gray mottled, fine-medium crystalline, argillaceous	247-261
limestone, dolomitic, medium gray, mottled, fine-medium crystalline, very argillaceous; sparse green shale	261-269
Guttenberg member ("oil rock")	
limestone, light tan, fine-medium crystalline upper part, fine granular dense lower part; also gray calcitic dolomite common 280 to 285 feet; sparse brown shale	269-287
Spechts Ferry member ("clay bed")	
shale, green-blue	287-290

Young hole no. 1 continued

Estimated zinc, lead and iron content

Depth	Zinc	Lead	Iron
25-30			1%
30-35	$\frac{1}{2}\%$		trace +
35-40	trace		trace +
40-50			trace +
110-125			trace - $\frac{1}{2}$
125-130			1 +
130-135			6
135-140			7.9%
140-145		trace	8
145-160			5+
160-165			8.9%
165-170			5
170-180			2 - 3
180-195			trace
195-200			$\frac{1}{2}$
200-230			trace
240-250			trace
250-255	trace	trace	trace
255-265			trace
280-285			trace +

Morgan hole no. 1

Location: 1580 feet west, 50 feet north
of SE corner of sec. 16, T.
89 N., R. 2 E.
Driller: C. Conner
3/2/52-4/6/52

Collar elevation: 921.3 ft.
Total depth: 327 ft.
Depth to water: 165 ft.
Sample study and logging:
C. E. Brown

	Depth (Feet)
Surficial	
soil and loess	0-12
MAQUOKETA FORMATION	
shale, dark brown, decomposed in part	12-20
shale and siltstone, yellow-buff, calcareous	20-30
dolomite, buff and gray, argillaceous and silty	30-45
shale, dark brown; calcareous shale or argillaceous limestone 57 feet to 62 feet and 75 feet to 80 feet; abundant depauperate fossils and phosphatic nodules in basal 2 to 3 feet	45-94
GALENA FORMATION	
Dubuque member	
dolomite, gray, fine and fine-medium, granular and crystalline, argillaceous	94-115
<i>Stewartville member</i> dolomite, buff, mainly fine granular, argillaceous	115-135
dolomite, buff, mainly fine-medium, crystalline	135-168
dolomite, partly decomposed, and dolomite sand, sparse limonite staining; soft	168-172
dolomite, gray buff, fine-medium crystalline	172-200
dolomite as above but drab color	200-213
Prosser member	
dolomite as above; chert common to abundant	213-245
dolomite as above; chert sparse to absent; rocks much softer 267 feet to 270 feet	245-275
dolomite as above; chert common	275-290
dolomite as above; chert sparse to absent	290-300
dolomite as above; chert common to abundant; calcite abundant	300-315
dolomite as above; chert sparse to absent	315-320
PLATTEVILLE FORMATION	
Iron member ("gray" beds)	
dolomite, gray, fine-medium crystalline; calcite, common; rocks very soft 326 to 327 feet	320-327

Estimated zinc and iron content

Depth	Zinc	Iron
100-125	trace	trace - $\frac{1}{2}\%$
165-265		trace - trace +
265-280		1 - 2%
280-300		trace
300-305		1%
305-325		trace - trace +

Powers hole no. 1

Location: 30 feet west, 40 feet north of
center of SW $\frac{1}{4}$ sec. 22, T. 89 N.,
R. 2 E.

Driller: C. Connor
4/20/52-4/25/52

Collar elevation: 877.5 ft.
Total depth: 192 ft.
Depth to water: 130 ft.
Sample study and logging:
A. E. Flint

	Depth (Feet)
Surficial	
soil, loess and glacial sand	0-28
MAQUOKETA FORMATION	
shale, dark brown and red-brown, calcareous cement; in part, and gray, very argillaceous dolomite; sparse calcite; trace of gypsum (selenite); sparse depauperate fossils near base of unit; limonite common near base . . .	28-67
GALENA FORMATION	
Dubuque member	
dolomite, buff and gray, mainly fine granular argillaceous; limonite and calcite common	67-75
dolomite, brown-gray, mainly fine-medium granular, argillaceous; calcite common; sparse limonite . . .	75-90
dolomite, mainly buff, fine granular, argillaceous; sparse limonite	90-105
<i>stewartville member</i>	
dolomite and dolomite sand, buff, fine-medium; much solutional decomposition, very soft; limonite common	105-115
as above but not so soft; less limonite	115-125
dolomite as above but very soft, decomposed; abundant dolomite sand; sparse brown clay and limonite . . .	125-130
as above but less decomposed, much is limonite stained .	130-145
dolomite and dolomite sand, buff, medium crystalline, very soft; buff and gray crevice clay, common; limonite sparse to common	145-160
clay, buff and gray; much limonite staining	160-165
dolomite and dolomite sand, buff and drab, medium crystalline, very soft; limonite staining common .	165-185
Prosser member	
dolomite, drab, fine-medium crystalline, moderately soft; (sparse chert present in drill cuttings but not in small sample studied under binocular microscope) . .	185-192

Estimated zinc, lead and iron content

Depth	Zinc	Lead	Iron
67-70	trace	trace	
70-75			2%
75-80	trace +		
125-130		1.29%	

Powers hole no. 1 cont.

Estimated zinc, lead and iron content (cont.)

<u>Depth</u>	<u>Zinc</u>	<u>Lead</u>	<u>Iron</u>
130-135		$\frac{1}{4}\%$	
135-140		trace	
165-170		2+	
170-175		$\frac{1}{2}+$	5
175-180			4
180-185			5
185-190		trace	1+
190-192			1-

*Assayed value

Blosch hole no. 1

Location: 1240 feet west, 1550 feet north of
SE corner sec. 16, T. 89 N., R. 2 E.
~~2 E~~
Driller: C. Connor
3/15/52-3/27/52

Collar elevation: 834.7 ft.
Total depth: 135 ft.
Depth to water: Not recorded
Sample study and logging:
C. E. Brown

	Depth (feet)
surficial	
soil and residuum	0-5
MAQUOKETA FORMATION	
shale, dark brown; depauperate fossils and phosphatic nodules abundant	5-7
GALENA FORMATION	
Dubuque member	
dolomite, buff, mainly fine granular; abundant calcite .	7-20
dolomite as above but gray, unoxidized	20-27
dolomite as above but gray and buff	27-35
<i>Stewartville member</i> dolomite, mainly buff, fine-medium crystalline	35-55
as above but rock much softer	55-65
dolomite, buff, fine-medium, crystalline, much solution decomposition; abundant dolomite sand, crevice clay and limonite 65 to 75 feet, 85 to 90 feet and 95 to 105 feet; entire interval very soft	65-105
dolomite, gray-drab, fine-medium crystalline	105-120
dolomite and dolomite sand, buff; abundant crevice clay and limonite staining	120-128
Prosser member	
as above plus yellow and gray chert	128-135

Estimated iron content

<u>Depth</u>	<u>Percentages</u>
10-15	$\frac{1}{2}\%$
105-125	trace
130-135	trace

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

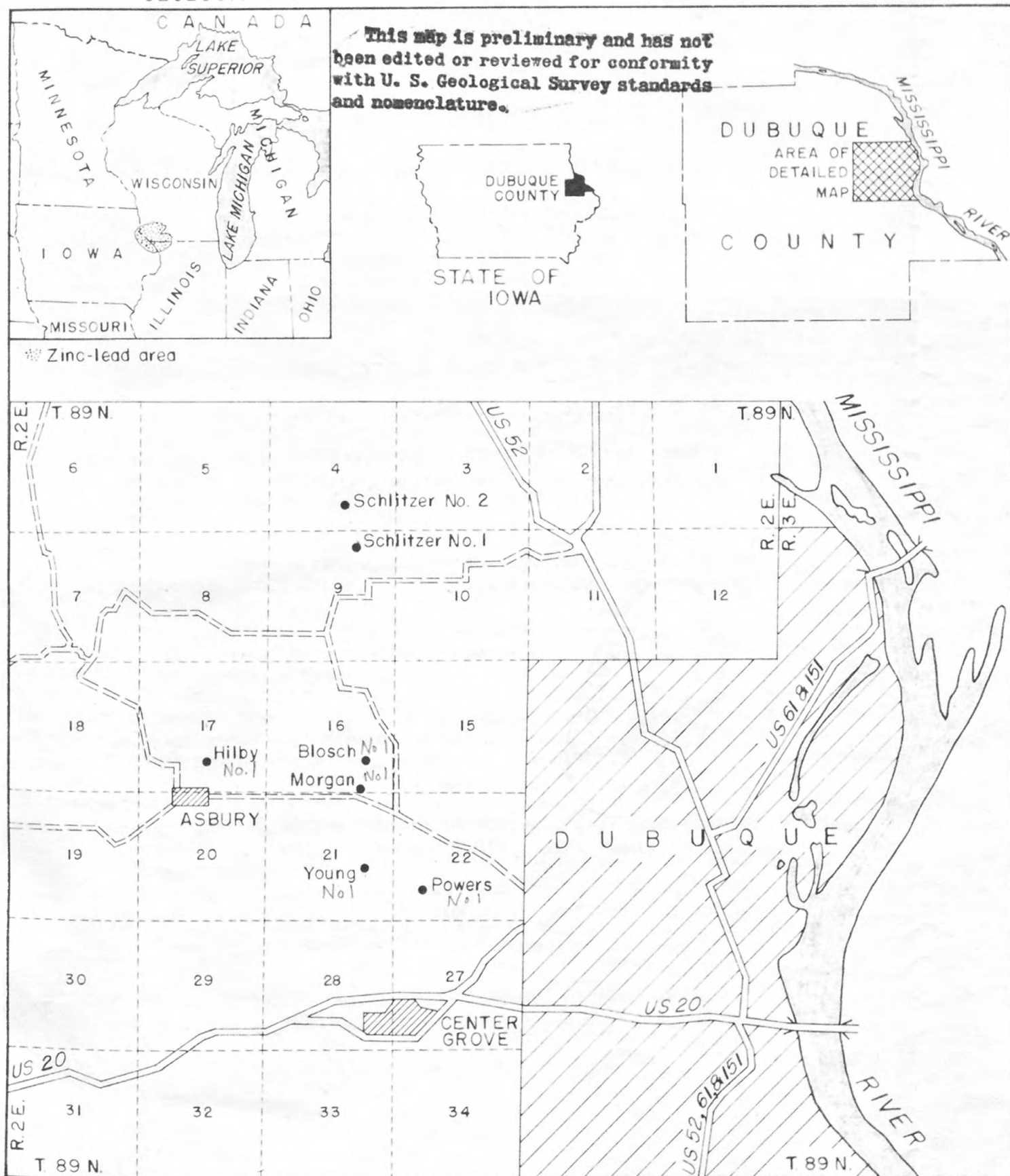


Figure 1. Index maps showing location of holes drilled by the U. S. Geological Survey, Dubuque County, Iowa.

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey
Washington 25, D. C.

For Release MARCH 16, 1953

ANNOUNCEMENT OF GEOLOGIC MAPS AND REPORTS RELEASED FOR PUBLIC INSPECTION

The Geological Survey is releasing in open files the following maps and reports on the geology of various parts of the United States. Copies are available for consultation at the Geological Survey, Room 1033 (Library), General Services Building, Washington, D. C., and at other places as listed. Copies are not available for distribution unless so indicated.

1. Descriptive logs of exploratory holes drilled during 1952 by the Geological Survey in Dubuque County, Iowa, by A. E. Flint and C. E. Brown, 11 p., 1 fig.

On file at the Geological Survey, Room 108, Wisconsin Institute of Technology, Platteville, Wis.; Room 213 Science Hall, University of Wisconsin, Madison, Wis.; and Iowa Geological Survey, Geology Annex, Iowa City, Iowa.

The following three reports are on file at places listed after item 4.

2. Geology and geologic interpretation of seismic data for improvement of Route 7 in Great Barrington, Mass., cut, stations 307-318, by James E. Maynard and Robert M. Hazlewood, 2 p., 2 pls.
3. Geology and geologic interpretation of seismic data for relocation of Route 20, Housatonic River Crossing in Lee, Mass., Stations 126-132, by James E. Maynard and Robert M. Hazlewood, 2 p., 1 pl.
4. Geologic and seismic investigation for the relocation of Route 20 in West Stockbridge, Mass., grade separation at Albany Street, stations 100-109, by James E. Maynard and Robert M. Hazlewood, 2 p., 2 pls.

Reports 2-4 were made in cooperation with the Massachusetts Department of Public Works. They are on file at the Geological Survey Office, Barnum Museum, Tufts College, Medford, Mass.; and the Massachusetts Department of Public Works, 100 Nashua Street, Boston, Mass.

5. Geologic map and structure sections of the Mullan and vicinity quadrangle, Idaho, by A. B. Griggs, R. E. Wallace, and S. W. Hobbs, 2 sheets, 6 sections, no text.

On file at the Geological Survey, South 157 Howard Street, Spokane, Wash.; and Idaho Bureau of Mines and Geology, University of Idaho, Moscow, Idaho.

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1526	9 $\frac{3}{4}$	"	7 $\frac{1}{8}$	"	"	1933	14	"	11	"	"
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