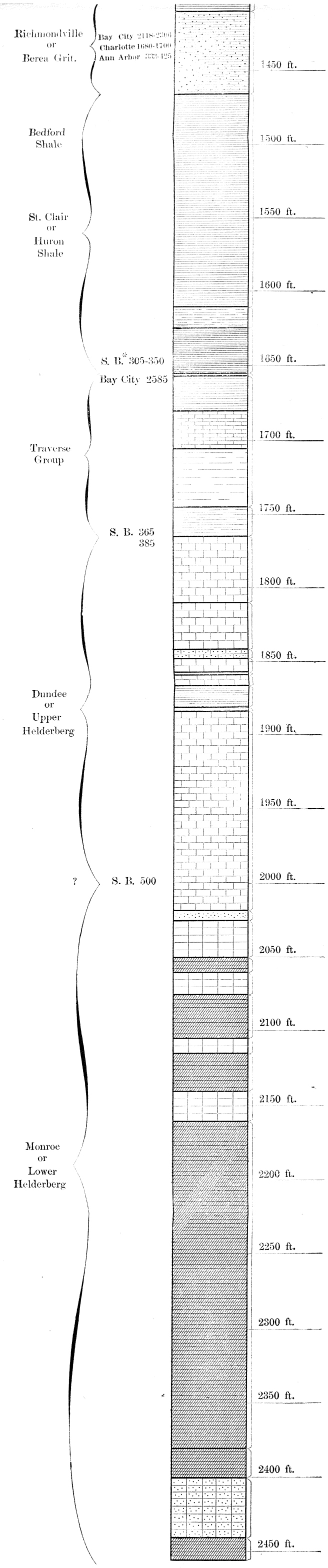


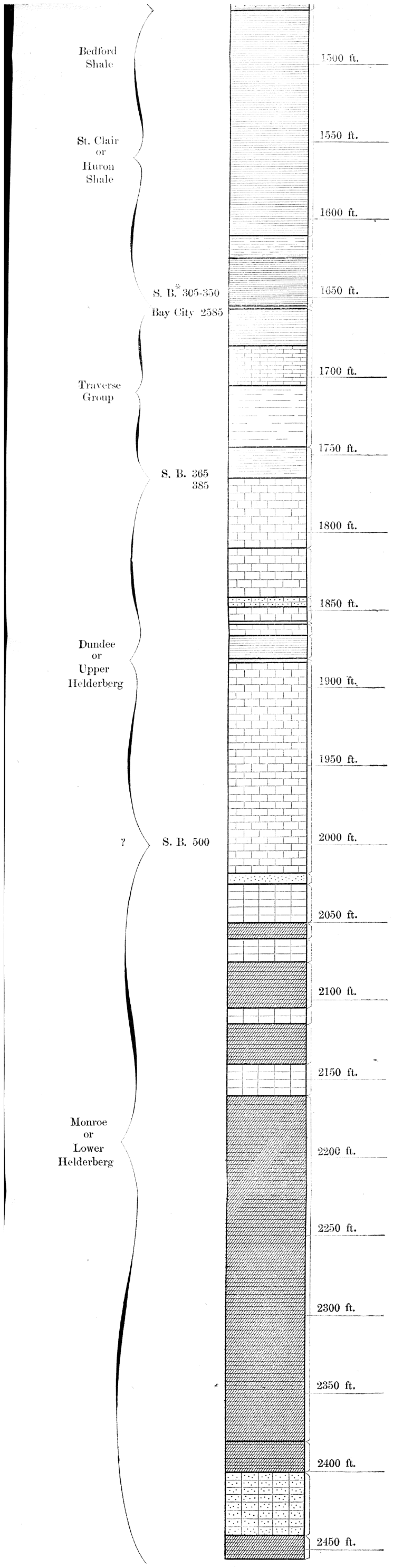
		with 39 per cent felt.
		< 1410 Sandstone shale.
		< 1465 Argillaceous shale, dark drab; very slow ef. cold. Top of sand (? bottom. L.)
		< 1475 Argillaceous shale, dark drab; slow ef., cold.
		< 1480 Bituminous argillaceous shale. Top.
		< 1520 Bituminous argillaceous shale.
	1530 June 18th, 9 A. M. very black shale with some smell of petroleum.	< 1530 Bituminous argillaceous shale.
		< 1555 Bituminous argillaceous shale (very black, with iron sulphates.
	1570 June 18, 10 P. M. The same.	
		< 1612 Argillaceous shale; very slow ef.; bottom of black, top of blue shale.
	1610-1624 Top of blue slate, no smell, June 20th, 8 A. M.	< 1624 Argillaceous shale; very slow ef.; top of black, bottom of 12 ft. blue.
	1624-1655 Black slate and petroleum, smell again 10 A. M.	
	1655 June 20th, 5 P. M.	< 1660 Argillaceous bituminous shale, black.
		< 1685 Calcareous argillaceous slate, brown black; brisk ef. cold; res. 85 per cent.
		< 1690 Calcareous argillaceous slate, brown black; brisk ef. cold; res. 85 per cent.
	1705 Thin hard flinty shell [chert nodule ?]	< 1705 Bituminous argillaceous slate, black.
		< 1715 Calcareous argillaceous shale; brisk ef. cold; residue 70 per cent dark drab.
	1655-1745 Blue slate and clay.	
	1730 June 21st, 1 P. M.	< 1730 Calcareous argillaceous shale; brisk ef. cold; dark drab.
	1745 June 21st, 8 P. M.	< 1740 Calcareous argillaceous shale; brisk ef. cold; res. 85 per cent. dark bluish drab.
	1745-1760 Strata of black, brown and blue shale.	< 1755 Calcareous argillaceous shale; brisk ef. cold; res. 55 per cent, dark drab.
	1765 *Brine.*	< 1770 Light grey limestone mixed with shale; brisk ef. cold; residue 10 per cent; chiefly white chert with a little shale.
	1760-1810 June 22nd. Sandstone.	
		< 1800 Drab limestone, briskly effervescing; residue 6-10 per cent of clay and angular chert.
		Arenaceous limestones, buff with yellow iron oxide specks; 15 to 25 per cent angular chert and sand.
		Limestone, 8 per cent.
		Limestone, drab; brisk effervescence; 7 to 10 per cent residue.
	1820 Drillings in boiling water, smell of gas.	Limestone, drab and yellow.
	1810-1842 Dark grey limestone.	1867 Limestone, drab and yellow.
		1872 Cal. arg. shale, drab; brisk ef. cold; 60 per cent residue dark drab clay.
	1842 Very hard white limestone.	Calcareous argillaceous shale.
	1848 Sandy? A bitter water struck; could only run 2 ft. before sharpening; 1852 July 27th, noon, coarser and darker limerock more as it was where it was first struck; 5 P. M. darker limerock, salt and bitter water; 1861 July 28th, 9 A. M. water; 1857-1858 thin shale; 1858-1867 limestone as before; 1867-1882 blue shale; 1882-1884 dark blue shale, no water; 1884 limestone not as hard as above, about same color; 1888 brownish; 1890 dark grey; 1905 dark brownish grey.	1884 Argillaceous limestone; brisk ef. cold, drab; 35 per cent residue.
		1890 Limestone, dark drab.
		1895–1905–1910 Limestone, dark drab; brisk ef. cold; residue 10 per cent clay and chert.
		1916 Limestone, light drab; brisk ef. cold; residue 4 per cent.
		1927 Limestone, buff; brisk ef. cold; very fine grained
		< 1940 Limestone, drab and yellow; ef. cold; very fine grained.
		< 1962 Limestone, light grey to drab; brisk ef. cold; 2 per cent residue.
		1990 a Limestone, light grey to drab; brisk ef. cold; 2 per cent residue. b Cherty limestone, drab; brisk ef. cold; 40 per cent res. grey and brown angular chert.
		Grains of sand in residue, also double ended quartz crystals.
		2015 Limestone, dark drab and yellow; very brisk ef. cold; 10 per cent rounded quartz [with a little anhydrite.]
		2018 Marl, with anhydrite and limestone.
		2025 a Dolomite, L. Slow effervescence. (From here on, record by L. and W. together.) b Gypseous marl.
		Dolomite, L. Slow effervescence.
		Marl, with anhydrite and gypsum.
		Dolomite, drab and yellow; moderate effervescence.
		Marl, with 20 per cent anhydrite, etc.
		Dolomite, with 10 per cent anhydrite, etc.
		Dolomitic marl; light cream colors; effervesces slowly, residue anhydrite.
		Calcareous dolomite; rusty; with some magnetite.
		Dolomitic marl, light to dark brown and more or less ferruginous, with anhydrite.
		Marl, light buff, with dolomite and anhydrite; salty.
		Marl, light yellow and brown, dolomitic with 20 per cent anhydrite, etc.; more or less salty, effervescence medium brisk.
		Marls like the above, salty, but with more sand.
		Arenaceous dolomite, with very slow ef. and grains of sand.
		2455 Marls, with some cherty SiO_2, anhydrite, etc.; quite ferruginous; More or less salt, some gas. [slow ef.

ABBREVIATIONS.

***S. B. refers to well at South Bend, Indiana.**

Ef.=Effervescence. Calc.=Calcareous.

Res.=Residue.



1530	June 18th, 9 A. M. very black shale with some smell of petroleum.
1570	June 18, 10 P. M. The same.
1610-1624	Top of blue slate, no smell, June 20th, 8 A. M.
1624-1655	Black slate and petroleum, smell again 10 A. M.
1655	June 20th, 5 P. M.
1705	Thin hard flinty shell [chert nodule ?]
1655-1745	Blue slate and clay.
1730	June 21st, 1 P. M.
1745	June 21st, 8 P. M.
1745-1760	Strata of black, brown and blue shale.
1765	*Brine.*
1760-1810	June 22nd. Sandstone.
1820	Drillings in boiling water, smell of gas.
1810-1842	Dark grey limestone.
1842	Very hard white limestone.
1848	Sandy? A bitter water struck; could only run 2 ft. before sharpening; 1852 July 27th, noon, coarser and darker limerock more as it was where it was first struck; 5 P. M. darker limerock, salt and bitter water; 1861 July 28th, 9 A. M. water; 1857-1858 thin shale; 1858-1867 limestone as before; 1867-1882 blue shale; 1882-1884 dark blue shale, no water; 1884 limestone not as hard as above, about same color; 1888 brownish; 1890 dark grey; 1905 dark brownish grey.

< 1465	Argillaceous shale, dark drab; very slow ef. cold. Top of sand (? bottom. L.)
< 1475	Argillaceous shale, dark drab; slow ef., cold.
< 1480	Bituminous argillaceous shale. Top.
< 1520	Bituminous argillaceous shale.
< 1530	Bituminous argillaceous shale.
< 1555	Bituminous argillaceous shale (very black, with iron sulphates.
< 1612	Argillaceous shale; very slow ef.; bottom of black, top of blue shale.
< 1624	Argillaceous shale; very slow ef.; top of black, bottom of 12 ft. blue.
< 1660	Argillaceous bituminous shale, black.
< 1685	Calcareous argillaceous slate, brown black; brisk ef. cold; res. 85 per cent.
< 1690	Calcareous argillaceous slate, brown black; brisk ef. cold; res. 85 per cent.
< 1705	Bituminous argillaceous slate, black.
< 1715	Calcareous argillaceous shale; brisk ef. cold; residue 70 per cent dark drab.
< 1730	Calcareous argillaceous shale; brisk ef. cold; dark drab.
< 1740	Calcareous argillaceous shale; brisk ef. cold; res. 85 per cent, dark bluish drab.
< 1755	Calcareous argillaceous shale; brisk ef. cold; res. 55 per cent, dark drab.
< 1770	Light grey limestone mixed with shale; brisk ef. cold; residu · 10 per cent; chiefly white chert with a little shale.
< 1800	Drab limestone, briskly effervescing; residue 6-10 per cent of clay and angular chert.
	Arenaceous limestones, buff with yellow iron oxide specks; 15 to 25 per cent angular chert and sand.
	Limestone, 8 per cent.
	Limestone, drab; brisk effervescence; 7 to 10 per cent residue.
	Limestone, drab and yellow.
1867	Limestone, drab and yellow.
1872	Cal. arg. shale, drab; brisk ef. cold; 60 per cent residue dark drab clay.
	Calcareous argillaceous shale.
1884	Argillaceous limestone; brisk ef. cold, drab; 35 per cent residue.
1890	Limestone, dark drab.
1895	Limestone, dark drab; brisk ef. cold; residue 10 per cent clay and chert.
1905	
1910	
1916	Limestone, light drab; brisk ef. cold; residue 4 per cent.
1927	Limestone, buff; brisk ef. cold; very fine grained
1940	Limestone, drab and yellow; ef. cold; very fine grained.
1962	Limestone, light grey to drab; brisk ef. cold; 2 per cent residue.
1990 a	Limestone, light grey to drab; brisk ef. cold; 2 per cent residue.
1990 b	Cherty limestone, drab; brisk ef. cold; 40 per cent res. grey and brown angular chert.

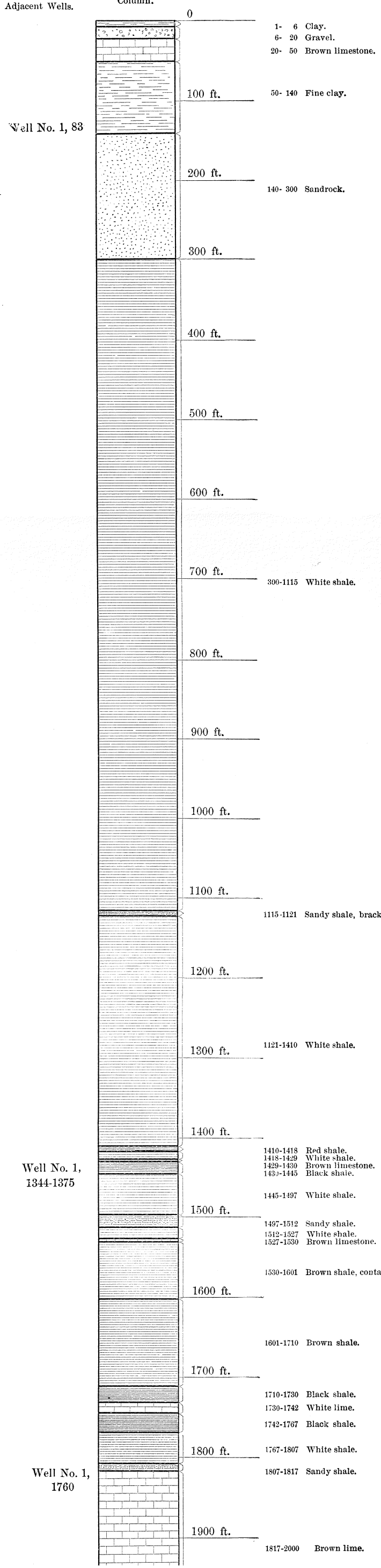
Grains of sand in residue, also double ended quartz crystals.

2015	Limestone, dark drab and yellow; very brisk ef. cold; 10 per cent rounded quartz [with a little anhydrite.]
2018	Marl, with anhydrite and limestone.
2025 a	Dolomite. L. Slow effervescence. (From here on, record by L. and W. together.)
2025 b	Gypseous marl.
	Dolomite, L. Slow effervescence.
	Marl, with anhydrite and gypsum.
	Dolomite, drab and yellow; moderate effervescence.
	Marl, with 20 per cent anhydrite, etc.
	Dolomite, with 10 per cent anhydrite, etc.
	Dolomitic marl; light cream colors; effervesces slowly, residue anhydrite.
	Calcareous dolomite; rusty; with some magnetite.
	Dolomitic marl, light to dark brown and more or less ferruginous, with anhydrite.
	Marl, light buff, with dolomite and anhydrite; salty.
	Marl, light yellow and brown, dolomitic with 20 per cent anhydrite, etc.; more or less salty, effervescence medium brisk.
	Marls like the above, salty, but with more sand.
	Arenaceous dolomite, with very slow ef. and grains of sand.
2455	Marls, with some cherty Si O_2, anhydrite, etc.; quite ferruginous; More or less salt, some gas. [slow ef.

ABBREVIATIONS.

***S. B. refers to well at South Bend, Indiana.**
Ef.=Effervescence. Calc.=Calcareous.
Res.=Residue.
< Denotes points from which samples are taken.

Woodworth's farm, north side of town. Depth 2174 ft. Cost $7000.
Driller's ? (Fred. Saeger) record. March 4th, 1883.



Well No. 1, 83

50- 140 Fine clay.

140- 300 Sandrock.

300-1115 White shale.

1115-1121 Sandy shale, brackish. Brine.

1121-1410 White shale.

Well No. 1, 1344-1375

1410-1418 Red shale.
1418-1429 White shale.
1429-1430 Brown limestone.
1430-1445 Black shale.

1445-1497 White shale.

1497-1512 Sandy shale.
1512-1527 White shale.
1527-1530 Brown limestone.

1530-1601 Brown shale, contains gas.

1601-1710 Brown shale.

1710-1730 Black shale.
1730-1742 White lime.
1742-1767 Black shale.
1767-1807 White shale.

Well No. 1, 1760

1807-1817 Sandy shale.

1817-2000 Brown lime.

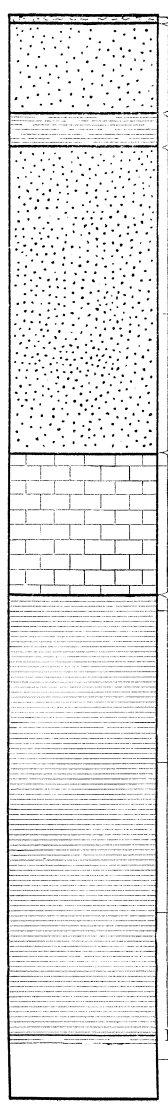
2000-2045 Brown lime.

2045-2054 White shale, (i. e. anhydrite. L.)
2054-2069 Sandrock.
2069-2079 White shale.
2079-2091 Sandrock.
2091-2106 White shale.
2106-2108 Grey lime.
2108-2123 White shale.
2123-2128 Porous sandstone, salt rock.
2128-2143 White shale.

2143-2163 Gas rock.
2163-2173 White shale.

Depth 2100 ft.

Francis and Milwaukee Sts.; begun April 6th, 1863. Driller's records, probably, from the Jackson Eagle.



Surface.

1 - 5 Drift.

5 - 65 Sandstone.

65 - 88 Fire clay. Pronounced first class by gas-retort men.

88 - 291 Sandstone.

291-388 Limestone.

388-728 Slate.

685 Saline from here on increasingly.

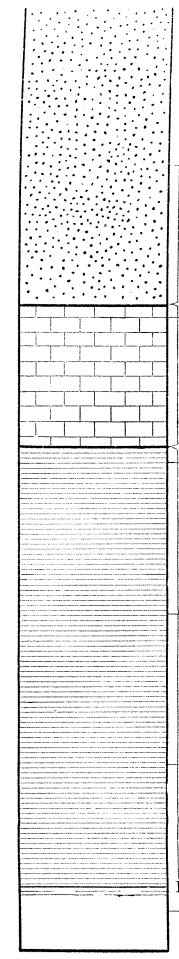
1040 Salt water, 20 per cent salt.

1395 Oil in traces.

1443 Argillaceous slate.

1800 Reached on February 12th, 1864.

2000 Reached on June 4th, 1864.



100 ft.

200 ft. 88 - 291 Sandstone.

300 ft.

291-388 Limestone.

400 ft.

500 ft.

388-728 Slate.

600 ft.

B 700 ft. 685 Saline from here on increasingly.

800 ft.

900 ft.

1000 ft.

1040 Salt water, 20 per cent salt.

1100 ft.

1200 ft.

1300 ft.

1400 ft. 1395 Oil in traces.

1443 Argillaceous slate.

1500 ft.

1600 ft.

1700 ft.

1800 ft. 1800 Reached on February 12th, 1864.

1900 ft.

2000 ft. 2000 Reached on June 4th, 1864.

2100 ft.

Kalamazoo Natural Gas Co. Depth 2250 ft.

P. B. Beardsley; samples examined by C. E. Wright, revised and plotted by Lane. Began drilling July 5th, 1887; July 30th struck brine. All of the samples have been kept for years and seem to have been put up in salt water.

1- 130 Surface (approximately. P. B. Beardsley.) No S.

130- 300 Clay and shale (soft); drab color. No S.

300- 320 Black sandstone (hard). No. S.

320- 620 Dark blue shales (soft). No. S.

620- 820 Light blue soft shale; at 710, 20 ft. red clay. No S.

820-1070 Dark drab soft shale; between 900 and 1000 about 20 ft. red clay. No S.

1070-1200 Black slate, soft and somewhat sandy. No S.

1200-1260 Limestone, blue and hard. No S.

1260-1270 Blue slate and shale, soft. No S.

1270-1310 Light grey sandstone, hard. No S. Strong brine. (Probably cherty limestone.)

1310-1780 Limestone.

1365
1370
1400 S. } Limestone, briskly effervescing, light buff.
1425 S.
1429 S.

1440 S. Limestone, briskly effervescing, light drab. 1445 S. Limestone, briskly effervescing.
1450 S.
1455 S. } Limestone, briskly effervescing, light buff.
1460 S.
1490 S. Salt and oil. S. Gypsiferous dolomite; effervesces slowly; large residue of anhydrite and one small garnet.
1495 S. S. Salt; dolomitic; effervesces slowly; large residue of anhydrite.
1500 S. Salt, dolomitic; effervesces slowly; quite ferruginous; much anhydrite.
1510 S. Dolomite, effervescing slowly, with a small anhydrite residue; light buff.
1515 S. Dolomite, effervescing moderately, with a small quartz residue; light buff.
1520 S. Dolomite, effervescing moderately, with small anhydrite residue; light buff.
1525 S.
1530 S. } Dolomitic limestone, fairly brisk effervescence; quite ferruginous.
1540 S. }
1545 S. Dolomite; slow effervescence.
1565 Dolomite; slow effervescence; quite ferruginous, with anhydrite.
1570 S. 1575 S. 1580 S.

Very salty.

1585 S. 1590 S. 1595 S.
1600 S. Salty. S. 1605 S. Very salty S.
1610 S.
1620 S. } Brine. S.
1630 S. }
1635 S.
1640 S. Salty S, largely anhydrite. 1645 S.
1650 S. Large residue quartz crystals. 1655 S.
1670 S. 1675 S.
1680 S. 1685 S.
1690 S.
1700 S.

All essentially the same, effervescing slowly with a copious residue, sometimes, as for 1650, over 50 per cent of anhydrite, with a little quartz (often in sharp dihexahedra), and a red clay, also salt.

Gypsiferous dolomite, light buff.

1720 S. Gypsiferous dolomite, effervescing slowly, with a large residue, light buff, rusty.
1730 S. White calcareous dolomite, effervescing moderately, with but little residue; some rounded grains of quartz.
1740 S. White calcareous dolomite, effervescing moderately; but little residue.

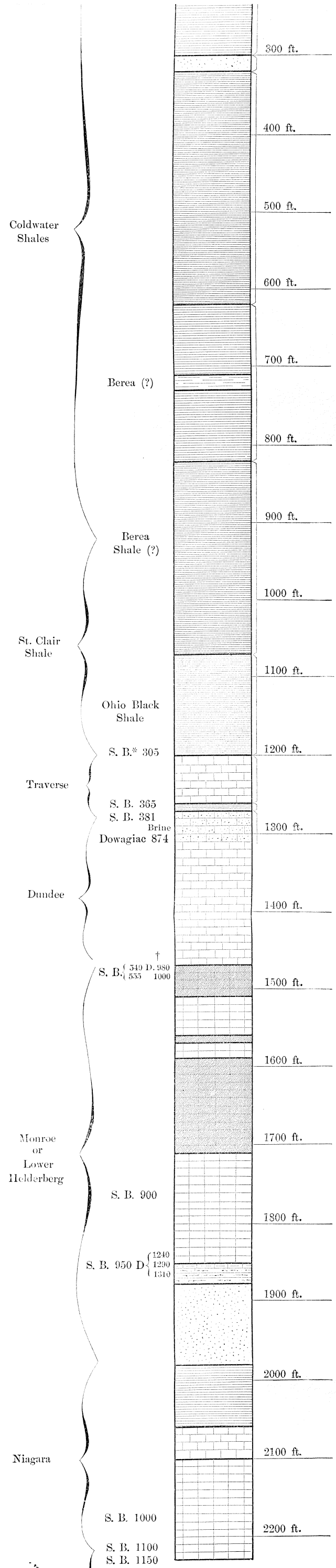
Very salty.

1800 Limestone. S. White calcareous dolomite.

1850 ? Limestone. S. White calcareous dolomite.

1875 Limestone. S. Red sandy shale, slightly calcareous.
1920 Sandstone S. Fine-grained white sandstone, (one green grain), mainly rounded.
1950 Sandstone S. fine-grained white sandstone; generally round sand grains; rarely crystalline.
1970 S. Reddish ferruginous, sandstone, with grains round or fractured and rarely crystalline.

2000 S. Dark shale, with some quartz, much argillaceous matter, carbonates and perhaps also anhydrite.



Coldwater Shales

Berea (?)

Berea Shale (?)

St. Clair Shale

Ohio Black Shale

S. B.* 305

Traverse

S. B. 365

S. B. 381

Brine

Dowagiac 874 †

Dundee

S. B. { 549 D. 980 / 555 1000

Monroe or Lower Helderberg

S. B. 900

S. B. 950 D { 1240 / 1290 / 1310

Niagara

S. B. 1000

S. B. 1100

S. B. 1150

Clinton or Medina

300- 320 Black sandstone (hard). No. S.

320- 620 Dark blue shales (soft). No. S.

620- 820 Light blue soft shale; at 710, 20 ft. red clay. No S.

820-1070 Dark drab soft shale; between 900 and 1000 about 20 ft. red clay. No S.

1070-1200 Black slate, soft and somewhat sandy. No S.

1200-1260 Limestone, blue and hard. No S.

1260-1270 Blue slate and shale, soft. No S.

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1270-1780 Limestone.

1365
1370
1400 S. } Limestone, briskly effervescing, light buff.
1425 S.
1429 S.

1440 S. Limestone, briskly effervescing, light drab. 1445 S. Limestone, briskly effervescing.
1450 S.
1455 S. } Limestone, briskly effervescing, light buff.
1460 S.
} Very salty.

1490 S. Salt and oil. S. Gypsiferous dolomite; effervesces slowly; large residue of anhydrite and one small garnet.
1495 S. S. Salt; dolomitic; effervesces slowly; large residue of anhydrite.
1500 S. Salt, dolomitic; effervesces slowly; quite ferruginous; much anhydrite.
1510 S. Dolomite, effervescing slowly, with a small anhydrite residue; light buff.
1515 S. Dolomite, effervescing moderately, with a small quartz residue; light buff.
1520 S. Dolomite, effervescing moderately, with small anhydrite residue; light buff.
1525 S.
1530 S. } Dolomitic limestone, fairly brisk effervescence; quite ferruginous.
1540 S. }
1545 S. Dolomite; slow effervescence.
1565 Dolomite; slow effervescence; quite ferruginous, with anhydrite.
1570 S. 1575 S. 1580 S.

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1950 Sandstone S. fine-grained white sandstone; generally round sand grains; rarely crystalline.
1970 S. Reddish ferruginous, sandstone, with grains round or fractured and rarely crystalline.

2000 S. Dark shale, with some quartz, much argillaceous matter, carbonates and perhaps also anhydrite.

2040 S. Like No. 2000 in color, but with less quartz more argillaceous and calcareous matter; effervescence tolerably brisk; chocolate colored.

2080 S. Argillaceous limestone, briskly effervescing; residue as at 2040, grey.
2120 S. Dark grey dolomite, effervescing moderately.

2190 S. Light buff dolomite, effervescing slowly; small clay and quartz residue.
2200 S. Buff dolomite, effervescing slowly. The powder in splinters as if from a hard massive rock.
2220 S. Impure dolomite, as at 2200, with a little quartz and black specks of iron ore and carbon.
2230 S. Iron ore or ferruginous dolomite, with very little quartz, more argillaceous matter.
2250 S. Brown sandstone, with a little calcite; rounded quartz and angular felspar, including microcline!

ABBREVIATIONS.

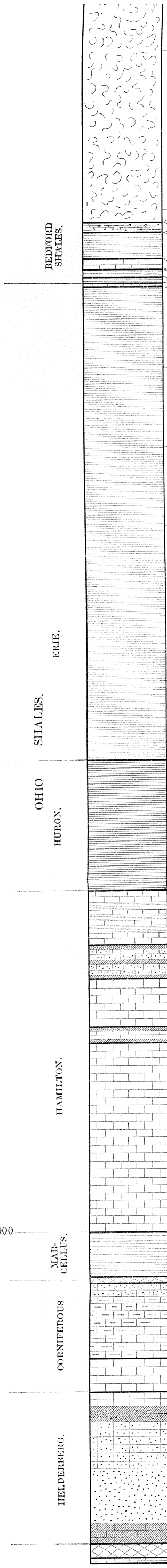
***S. B. refers to the well at South Bend, Indiana.**

†D=Dowagiac.

LUDINGTON, No. 1.

Mason Co. Alt. 590 ft. (10 ft. lower than Butters and Peters's well and a mile further north.)
Pere Marquette Lumber Co.; H. E. Freeman in charge. Depth 2220 ft.
N. B. Pierce; Mason Co. Record; begun June 2d, 1883, finished May 9th, 1885.

Local Names.	Equivalent Depths in Adjacent Wells.	Parallel Names in Ohio.	Geological Column.	Total Depths.		
				0		
					1- 30	Sand.
					30- 35	Marl, shells and pine sticks.
					35- 56	Sand.
					56- 60	Soft clay.
					60- 80	Hard clay.
					80- 90	Hard pan.
				100 ft.	90- 108	Coarse sand and small stones.
					108- 117	Sand and gravel.
					117- 159	Sand.
					159- 183	Sand and gravel.
				200 ft.	183- 200	Sand with clay.
					200- 205	Sand.
					205- 209	Clay.
					209- 214	Clay and gravel.
					214- 241	Clay and sand.
						Surface divided into:
					241- 273	Hard pan.
					273- 284	Clay.
					284- 292	Clay and gravel.
				300 ft.	292- 307	Clay.
					307- 360	Clay and gravel.
					360- 397	Clay.
				400 ft.	397- 412	Clay and sand.
					412- 464	Hard clay.
					464- 476	Hard pan and gravel.
					476- 492	Gravel.
				500 ft.	492- 498	Gravel and sand.
					498- 516	Sand.
					516- 528	Gravel and clay shale.
					528- 563	Blue shale.
		BEDFORD SHALES.			563- 578	Limestone.
					578- 586	Red shale and marl.
				600 ft.	586- 594	Shale.
					594- 599	Limestone.
				700 ft.		
				800 ft.		
				900 ft.	599-1200	Blue shale.
				1000 ft.		
		ERIE.		1100 ft.		
		SHALES.				In Lyon's No. 2 well a showing of oil at 1175.
				1200 ft.		
St. Clair Shale		OHIO	HURON.		1200-1365	S. Black slate or hard shale, with pyrite.
				1300 ft.		
				1400 ft.	1365-1435	Blue shale and limestone.
					1435-1480	Black sandy limestone, with strata of gypsum. The limestone is quite crystalline at a depth of say 1460. There are many specks of pyrites. Brine 30°.
				1500 ft.	1480-1540	Limestone.
					1540-1560	Limestone and gypsum.
			HAMILTON.	1600 ft.		
					1560-1800	Limestone, hard with grit above, and softer with less grit below.
				1700 ft.		
	Muskegon 2000			1800 ft.		Brine 30° - 36°.
			MAR-CELLUS.		1800-1858	Blue shale.
					1858-1862	Salt: either salt or soft salt rock. 90° brine.
					1880	S. Slow effervescence with some sand grains.
			ROUS	1900 ft.	1862-1962	Limestone, very sticky. 70° - 80° brine.



Surface divided into:

241- 273 Hard pan.
273- 284 Clay.
284- 292 Clay and gravel.
292- 307 Clay.
307- 360 Clay and gravel.
360- 397 Clay.
397- 412 Clay and sand.
412- 464 Hard clay.
464- 476 Hard pan and gravel.
476- 492 Gravel.
492- 498 Gravel and sand.
498- 516 Sand.
516- 528 Gravel and clay shale.
528- 563 Blue shale.
563- 578 Limestone.
578- 586 Red shale and marl.
586- 594 Shale.
594- 599 Limestone.

599-1200 Blue shale.

In Lyon's No. 2 well a showing of oil at 1175.

1200-1365 S. Black slate or hard shale, with pyrite.

1365-1435 Blue shale and limestone.

1435-1480 Black sandy limestone, with strata of gypsum. The limestone is quite crystalline at a depth of say 1460. There are many specks of pyrites.
Brine 30°.

1480-1540 Limestone.

1540-1560 Limestone and gypsum.

1560-1800 Limestone, hard with grit above, and softer with less grit below.

Brine 30° - 36°.

1800-1858 Blue shale.

1858-1862 Salt: either salt or soft salt rock. 90° brine.

1880 S. Slow effervescence with some sand grains.

1862-1962 Limestone, very sticky. 70° - 80° brine.

1920-2005 S. Bluish argillaceous, moderately effervescent with a large residue.

1962-2002 Very hard limestone. 20° brine.

2005-2050 S.
2050 S. } Dolomitic limestone, with a residue of quartz-sand and anhydrite; brisk effervescence.

2002-2140 Dolomite, with soft streaks, 6 in. to 18 in. thick, 50° - 56° brine.
2100 S. Mainly rounded sand, effervescing generally slowly.

62° - 64° Brine.
2150 S. Largely rounded sand. Effervescence slow.
2125-2220 S. Rusty white sand.
2140-2195 Hard grey limestone, contains gypsum and is soft in streaks.

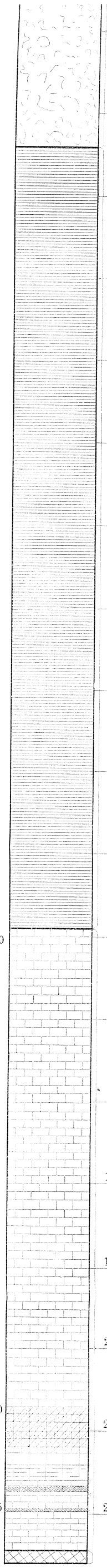
2195-2213 Rock salt. 100° brine.
2213-2220 Limestone, containing two feet of rock salt.

ABBREVIATIONS.

S. is placed after points from which samples are taken.

Mason Co., Alt. 600 ft. **Really 1 mile south of Ludington in Buttersville.**
(2.) Butters and Peters. Depth 2260 ft.
C. E. Wright.

Local Names. (Correlated by Lane.)	Equivalent Depths in Adjacent Wells.	Geological Column.	Total Depths.	
			0	
			100 ft.	
			200 ft.	
				1 - 540 Surface.
			300 ft.	
			400 ft.	
			500 ft.	
			600 ft.	
Coldwater Shales			700 ft.	
			800 ft.	
			900 ft.	
			1000 ft.	540-1490 Shale; no casing.
			1100 ft.	
			1200 ft.	
St. Clair Shales			1300 ft.	
			1400 ft.	
				1490 Brine.
Muskegon 1700 Well, No. 1. 1480			1500 ft.	
			1600 ft.	
			1700 ft.	
			1800 ft.	1490-2242 Limestone, sand etc.
			1900 ft.	
			2000 ft.	



Coldwater Shales

St. Clair Shales

Muskegon 1700
Well, No. 1. 1480

Monroe Beds

Muskegon 2350

Well, No. 1. (?) 2195

Well, No. 1. (?) 2195

540-1490 Shale; no casing.

1490 Brine.

1490-2242 Limestone, sand etc.

2050 S. Dark grey limestone, (brisk effervescence); very slight residue.
2060 S.
2075 S. Light grey hard dolomitic limestone, (slow effervescence); very small residue of silica and gypsum.
2085 S. Light grey hard dolomitic limestone; very small residue of silica and gypsum.
2095 S. Light grey hard dolomitic limestone; very small residue of silica and gypsum; contains anhydrite.

2125 S. Dark grey dolomite; very small siliceous residue.
2140 S. Dark grey argillaceous and siliceous dolomite; probably 50 per cent of residue.
2160 S. Dark greyish brown limestone; residue 30 per cent composed of gypsum, anhydrite and silica.
2175 S. Light and dark grey calcareous gypsum; large residue (90 per cent) of gypsum.
2195 S. Light and dark grey calcareous gypsum; large residue (90 per cent) of gypsum.

2242-2260 Salt.

ABBREVIATION.

S. is placed after points from which samples are taken.