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Results of Physical Tests of Road-Building Aggregate

to January 1, 1951

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BY THE PHYSICAL RESEARCH BRANCH
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Senior Materials Engineer

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A useful companion to this volume is **The Identification of Rock Types,** *published by the Bureau of Public Roads. The pamphlet is sold by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at 10 cents a copy.*

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Results of Physical Tests of Road-Building Aggregate

This bulletin gives the results of tests on samples of ledge rock, crushed stone, gravel, blast-furnace or smelter slag, and natural or manufactured fine aggregate which were made by the Bureau of Public Roads to January 1, 1951. This bulletin supersedes Miscellaneous Publication No. 76 of the U. S. Department of Agriculture, *The Results of Physical Tests of Road-Building Rock*, and supplements the data in that bulletin. The geographical distribution of the more than 13,000 samples is shown in table 1.

The results of tests on more than 9,700 samples of coarse aggregate are reported in table 10 (beginning on p. 12) and on over 3,400 samples of fine aggregate in table 11 (beginning on p. 170). In both tables, the test results are arranged in alphabetical order by State, county, and nearest town.

An attempt has been made in this bulletin to make the data of more practical use to the reader by including only those samples which were identified definitely as to location of the source of supply. In addition, the type of source is shown: If operated commercially and in production at the time the sample was taken (abbreviated as Comm.); if operated as a local source on one or a few occasions, as a contractor might open a gravel pit for a particular construction job; or if only a prospective source of material (abbreviated as Prosp.).

Physical Properties of Coarse Aggregates

The value of a material for use as a coarse aggregate in road construction depends largely on the extent to which it will resist the destructive influences of traffic and the weather, and whether it will exist in harmony with other materials with which it is used. Of prime importance are stability of volume, a reasonable degree of hardness, and, when used in bituminous construction, preferential adherence of bituminous material instead of moisture. Stability in volume includes soundness or resistance to failure by alternate freezing and thawing, a low coefficient of expansion due to change in moisture or temperature, and inertness to chemical reactions with other materials or with materials existing at the site of construction.

The test data reported here furnish some information applicable to the desirable qualities mentioned above. The tests for hardness, toughness, abrasive loss, and unit weight (for slag) indicate individually and jointly the structural properties or hardness of coarse aggregates. The test for soundness, either the accelerated test in which sodium or magnesium sulfate is used or the freezing and thawing test, furnishes information of the stability in volume of the aggregate. Information of this important characteristic is also furnished, although indirectly, by the absorption test. A material with a low percentage of absorption will probably be more stable dimensionally when subjected to freezing or change in temperature or moisture than a material having a high absorption.

With the exception of the lithological composition, none of the data presented here may be used to indicate the relative affinity of the aggregate for water or bi-

Table 1.—Geographical distribution of samples

State	Coarse aggregate	Fine aggregate	State	Coarse aggregate	Fine aggregate
	Number	*Number*		*Number*	*Number*
Alabama	158	56	Nebraska	20	8
Arizona	60	9	Nevada	1	0
Arkansas	173	130	New Hampshire	68	14
California	159	25	New Jersey	147	22
Colorado	71	6	New Mexico	43	14
Connecticut	110	20	New York	295	98
Delaware	53	22	North Carolina	808	188
District of Columbia	96	248	North Dakota	9	44
Florida	67	99	Ohio	625	294
Georgia	398	54	Oklahoma	121	78
Idaho	21	0	Oregon	56	7
Illinois	182	11	Pennsylvania	836	36
Indiana	265	15	Rhode Island	82	9
Iowa	35	3	South Carolina	149	206
Kansas	70	13	South Dakota	60	11
Kentucky	112	19	Tennessee	261	132
Louisiana	33	57	Texas	310	341
Maine	154	123	Utah	30	0
Maryland	444	225	Vermont	61	3
Massachusetts	433	42	Virginia	1,407	404
Michigan	179	54	Washington	237	2
Minnesota	54	24	West Virginia	366	40
Mississippi	106	110	Wisconsin	178	70
Missouri	81	17	Wyoming	19	7
Montana	39	16	Total	9,742	3,426

tuminous material. Only recently has a satisfactory test for this characteristic been developed, and no effort was made to include in these tabulations the relatively small amount of data which has been obtained. As a general rule, materials consisting chiefly of the acid type of rock, that is those having a high silica content, show a stronger preference for the adsorption of water than of bitumen, and are described as hydrophilic. The basic type of rocks, those composed of carbonates or those having a high ferromagnesian content, are generally of a hydrophobic nature, and hold their coating of bitumen in the presence of water.

A considerable number of samples of coarse aggregate have been tested to determine their susceptibility to chemical reaction with the alkali in cement. The results are not included in these tables as it is now believed that a definite knowledge of the behavior of an aggregate with regard to reaction with the alkali in cement can be obtained only by testing the aggregate with each of several different cements having a wide range in their alkali contents. In most of the available data, tests of aggregates were made with one or two cements, generally those of the high alkali type.

Size of gravel

In mechanical analyses of gravel, sieves having square openings of 3 inches, 2½ inches, 2 inches, 1½ inches, 1¼ inches, 1 inch, ¾ inch, ½ inch, and ⅜ inch were used. The maximum size of gravel shown in table 10 is that sieve on which less than 5 percent of the gravel was retained, provided that more than 5 percent was retained on the next smaller sieve.

Physical Properties of Fine Aggregates

In the decomposition of rock to form sand, it would seem that only the hardest and most durable grains would remain. If this were true, the lithological composition and grading would probably be the most important characteristics of a natural fine aggregate. However, few deposits of sand can be considered as static in composition, and most are constantly being added to and altered by the processes of weathering. Under this condition, some determination of the presence of soft grains in the sand appears to be desirable, and to a limited extent this is given by the mortar strength test. The result of this test is subject to a number of qualifications. In the tensile strength test, the grading of the sand exerts a marked influence on the strength ratio in that it causes a variation in the amount of water needed to prepare the mortar, and the strength varies inversely with the amount of water or directly with the fineness modulus of the sand. In the compressive strength test, the amounts of water and cement are constant but the amount of sand is varied to obtain a mortar of constant consistency. The prepared mortar then contains a variable amount of cement per cubic inch, and the strength is not as constant as it was supposed to be. With other factors equal, the compressive strength varies inversely with the fineness modulus of the sand.

The presence of some types of organic matter in sand may interfere with the normal hardening of the cement. At the present, the results of the mortar strength tests are considered to be of most value in indicating whether organic matter is present in sufficient amount to be objectionable. Coal and lignite give a dark color to the liquid in the test for organic matter but have little if any effect on the hardening of cement.

Accelerated soundness tests or tests by freezing and thawing furnish information of the structural properties of the sand grains with particular reference to those derived from sedimentary types of rock. Some information of the same nature is furnished by the test for absorption, with sand absorbing a small amount of water being considered more durable than sand having a high absorption.

Methods of Test

In the 55 years covered by the test results reported here, a number of changes in most of the methods of test were made as was found desirable to obtain more uniform results or to expand the method to cover additional materials. A complete description of the methods and the changes which were made will not be given. However, a statment of the principle involved in each test will be given with information of the major changes which were made. For more detailed information, reference should be made to publications of the Office of Public Roads (later the Bureau of Public Roads)[1] and to those of the American Society for Testing Materials.

Deval abrasion test

The Deval abrasion test for rock was developed in the French School of Bridges and Roads in 1878 or shortly thereafter. The test sample consists of approximately 50 pieces of dry rock weighing 5,000 g. When the test was first used in this country, the pieces of rock were required to be as nearly uniform in size as was possible. In 1919 or 1920, changes were made to require the sample to be composed of 50 pieces, of the same size and as nearly cubical as possible, weighing 5,000 g., and broken from a piece of ledge rock. The sample is tested in a cast-iron cylinder, 20 cm. in diameter and 34 cm. in length, mounted at an angle of 30 degrees with its axis of rotation. The cylinder containing the sample is rotated 10,000 times at a rate of 30 r.p.m., after which the sample is screened over a No. 12 sieve (opening approximately 1/16-inch). The material passing the sieve is expressed as a percentage of the original weight of the sample and this value is referred to frequently as the "percentage of wear."

A number of tests of blast-furnace and smelter slag were made by this method, using samples prepared from large pieces of the more dense portion of the slag. When this practice was found to be in error, and porous blast-furnace slag of low bulk specific gravity was tested, provision was made for a test sample weighing 4,000 g. if the bulk specific gravity was below 2.20.

In 1917, Deval abrasion tests were first made on samples of gravel. At first the sample consisted of 5,000 g. of gravel passing the 2-inch and retained on the ½-inch screens (round openings). An abrasive charge of six cast-iron balls about 1⅞-inches in diameter and weigh-

[1] *The physical testing of rock for road building*, by A. T. Goldbeck and F. H. Jackson, Jr.; U. S. Department of Agriculture Bulletin No. 44, June 1912. *Methods for the determination of the physical properties of road building rock*, by F. H. Jackson, Jr.; U. S. Department of Agriculture Bulletin No. 347, March 1916. *Tentative standard methods of sampling and testing highway materials;* U. S. Department of Agriculture Bulletin No. 1216, May 1924. (All of these bulletins are out of print, but will be found in most large libraries.)

ing about 0.95 pound each was used. The number of revolutions of the machine and the method for determining the loss was the same as in the Deval test for rock. At later dates but prior to 1924, the test sample was more definitely specified to insure more constant test results. In the first of these changes, the sample was prepared in two sizes, 2-inch to 1-inch, and 1-inch to ½-inch (all screens with round openings), and 2,500 g. of each size of gravel was used. In the other change, the sample was separated into four sizes, using 2-inch, 1½-inch, 1-inch, ¾-inch, and ½-inch screens with round openings. The sample tested was prepared with 1,250 g. of each of the four sizes of gravel.

At a later date, when crushed gravel was offered for use in highway construction, the method of test was again changed to require the use of rounded particles only. If the gravel contained crushed particles, a determination of the percentage of these was made, and the allowable loss in the specifications increased to a fixed maximum.

In 1928, four gradings were adopted for samples of gravel tested by the Deval method. These are:

A.—2-inch to ½-inch (4 sizes)
B.—1½-inch to ½-inch (3 sizes)
C.—1-inch to ½-inch (2 sizes)
D.—¾-inch to ¼-inch (2 sizes)

These gradings were prepared with screens with circular openings. In 1937, the method was again changed to require the samples tested to be prepared with sieves of the same sizes as above but having square openings. This resulted in the use of particles of gravel of slightly larger size than was previously tested. At the same time the weight of the sample was changed to agree more closely with the bulk specific gravity:

Bulk specific gravity	*Weight of sample*
Over 2.8	5,500 g.
2.4 to 2.8	5,000 g.
2.2 to 2.39	4,500 g.
Less than 2.2	4,000 g.

In the current revision of this test as described in A.S.T.M. Method D 289–46, the title is given as "abrasion of graded coarse aggregate", and the method might be used for gravel, crushed stone, or crushed slag.

The loss for a sample of aggregate tested with one of the four gradings permitted may be quite different from that for the same material tested with one of the other gradings. For that reason, the grading used in the tests reported here is given. For tests made prior to the adoption of the four gradings, the grading is reported as "A" since the range in size of the test sample was the same as is used in the actual grading A.

Los Angeles abrasion test

The first tests by this method were made in 1932. The method of test is used for stone, gravel, and slag, and the test is made on material as prepared for use in construction. The machine consists of a steel drum 28 inches in diameter and 20 inches long with an internal steel shelf 3½ inches wide. The machine is rotated for 500 revolutions at a speed of about 30 r.p.m. The loss is determined as in the Deval test by the material passing the No. 12 sieve.

In the first standardization of this method, four gradings were adopted which, with material of constant quality, give very nearly the same percentage of wear. The sizes embraced by these gradings are:

A.—1½-inch to ⅝-inch (4 sizes)
B.—¾-inch to ⅝-inch (2 sizes)
C.—⅝-inch to No. 4 (0.187 in.) (2 sizes)
D.—No. 4 to No. 8 (0.0937 in.)

In 1947, three more gradings for large size aggregates were added to the method:

E.—3-inch to 1½-inch (3 sizes)
F.—2-inch to 1-inch (2 sizes)
G.—1½-inch to ¾-inch (2 sizes)

To obtain the same loss for each grading, the number of steel balls used as the abrasive charge or the number of revolutions of the machine are varied. With gradings A, E, F, and G, 12 balls weighing about 5,000 g. are used; with grading B, 11 balls; with grading C, 8 balls, and with grading D, 6 balls. With gradings E, F, and G the machine is rotated for 1,000 revolutions, but only half that number is used for the other gradings.

Absorption test

In this test a sample of dry aggregate of known weight is immersed in water for 24 hours, then surface dried and weighed. The weight of water absorbed is expressed as a percentage of the dry weight of the sample.

Compressive strength

A cylinder of 1- or 2-inch diameter is drilled from the rock and cut to have a height equal to the diameter. Plane surfaces are ground on both ends of the cylinder and it is then tested for compressive (crushing) strength.

Fineness modulus of fine aggregate

The fineness modulus is the sum of the amounts of material (expressed as percentages) retained on the No. 4, 8, 16, 30, 50, and 100 sieves, divided by 100.

Dorry hardness test

This test is made on cores measuring 1 inch in diameter and drilled from large pieces of rock or slag. When loaded to a total weight of 1,250 g., the face of the core is subjected to the abrasive action of finely crushed quartz fed upon a revolving cast-iron disk. The loss in weight of the sample after 1,000 revolutions is used to compute the value for hardness:

$$\text{Hardness} = 20 - \frac{\text{loss}}{3}$$

This test was discontinued in 1934 as, with the virtual disappearance of steel-tired vehicles, the need for a test involving direct surface wear was considered unnecessary.

Mortar strength

In both the tension and compression tests of mortar (abbreviated Tens. and Comp., respectively, in table 11), comparisons are made between the strength of mortar prepared with the sand under test, and the strength of similar mortar prepared with standard Ottawa sand and the same cement, and gaged to the same consistency or degree of plasticity. As previously mentioned, these tests are now considered to be of most value in indicating whether organic matter in sand is present in sufficient amounts to impair the strength of the mortar.

Organic matter test

A known weight of dry sand is mixed with a given amount of a 3-percent solution of sodium hydroxide. After standing for 24 hours, the liquid above the sand is compared in color with standard color plates or with a standard test solution. If the color of the solution for the sample under test is darker than the standard, the sand is considered to have an objectionable amount of organic material. Mortar strength tests

should then be made to determine whether the organic matter is actually of an objectionable nature.

Soundness tests

The results of two types of soundness tests are reported in the data presented here. They are the accelerated soundness test in which solutions of sodium or magnesium sulfate are used, and a freezing and thawing test.

In the accelerated test, the sample is alternately immersed in a saturated solution of sodium or magnesium sulfate for 16 to 18 hours and then dried in an oven, and this treatment is repeated usually five times. In some of the tests reported here a sample weighing about 1,000 g. and composed of ten fragments of rock or gravel of the same size was used. Based on visual observation, the results of such tests were reported as sound, questionable, or unsound (symbolized by S, Q, and U, respectively, in table 10). In other tests of coarse aggregate and in all tests of fine aggregate, separated sizes of aggregates were tested. The results of the test were computed from the amount of each size passing the original retaining sieve, with an average value weighted with respect to the grading of the sample as received.

The technique of making the accelerated soundness test has been changed many times with intent toward obtaining more uniform test results. No description of these changes will be given here. Attention is called to the fact that the results of the accelerated soundness test are indicatory only. A material having a high loss in this test may not fail due to freezing and thawing, but such a material should be investigated thoroughly prior to use. However, a low loss in the accelerated soundness test may be taken to imply adequate resistance to frost action.

The freezing and thawing tests reported here were usually made on individual sizes of aggregate. The material passing the original retaining sieve was determined, and an average value weighted with respect to the grading of the material as received. The samples tested were frozen in water at about −10° F. and thawed at room temperature. One cycle was obtained in 24 hours.

Unless indicated otherwise by a footnote, the results given in the accompanying tables were obtained using the five cycle, sodium sulfate, accelerated soundness test.

Specific gravity

Most of the values given are for bulk specific gravity, in which the volume of the sample tested is the total of the solid volume of the material plus the volume of the included voids or pores. Some values reported for fine aggregate, particularly those samples for which no value for the percentage of absorption is given, may refer to the apparent specific gravity. In the determination of this value, the volume of the sample is taken as the solid volume plus the volume of the impermeable voids only. All values reported are based on the dry weight of the sample tested.

Prior to 1916, many values for specific gravity were determined on a single, presumably representative, piece of rock. The volume of the sample was determined by suspending the piece by a thread from the arm of the balance, and determining its weight in air and in water. At a later date, a sample weighing about 1,000 g. was used. The pieces were dropped into an overflow can which had been filled with water, and the displaced water caught and weighed. When samples of gravel or slag were tested for specific gravity, it became apparent that still larger samples would be necessary to insure representative test samples, and the use of 5,000 to 10,000 g. samples for all coarse aggregates was adopted. After its dry weight has been obtained, the sample is immersed in water for 24 hours, surface-dried and weighed, and then placed in a large wire-mesh basket and weighed again in water.

Tests on fine aggregate are usually made with a 500-ml. volumetric flask. A sample of the saturated, surface-dry material is placed in the flask, water added to cover, and the flask filled to mark and weighed after the entrapped air has been removed.

Toughness test

The test for toughness or resistance to impact is made on cores of rock having a diameter and height of about 1 inch. The specimen is held on an anvil and supports a steel plunger with a hemispherical lower end. Energy produced by the fall of a hammer weighing 2 kg. is transmitted to the specimen through the plunger. The hammer is dropped 1 cm. at the first blow and the height of fall increased 1 cm. after each blow. The height of fall in centimeters at failure of the specimen is called the toughness.

Weight per cubic foot

The weight per cubic foot of compacted blast-furnace slag has long been used as an indication of the quality of the material. The aggregate is tamped or jolted in a measure of known volume until the measure is filled, and the weight per cubic foot calculated. As material of different sizes will pack to different degrees of density, the size of the sample tested is given whenever such information is available.

Descriptions of Rocks and Minerals

Descriptions of the rocks and minerals mentioned in the accompanying tables are given for the benefit and interest of the reader. A deliberate attempt has been made to reduce these descriptions to the simplest terms. Extensive reference has been made to one or more of the following publications in the preparation of this material, and the reader should consult them for further information:

Engineering geology, by H. Ries and Thomas L. Watson, fifth edition, 1936.

A glossary of the mining and mineral industry, by Albert H. Fay, U. S. Department of the Interior, Bureau of Mines, Bulletin 95, reprinted 1947.

A handbook of rocks, by James Furman Kemp, sixth edition revised and edited by Frank F. Grout, 1940.

Rocks and rock minerals, by Louis V. Pirsson, third edition revised by Adolph Knopf, 1947.

Tentative descriptive nomenclature of constituents of natural mineral aggregates, A.S.T.M. Designation C 294–52T.

Webster's Collegiate Dictionary, 1947.

A summary of types of rock with respect to origin is given in table 2.

Descriptions

ACTINOLITE.—One of the amphibole group of minerals; a light green silicate of calcium, magnesium, and iron.

AMPHIBOLE.—A group of silicate minerals having a characteristic crystal form and cleavage; can be considered as metasilicates, salts of H_2SiO_3, but of complex composition.

AMPHIBOLITE.—A metamorphic rock

consisting chiefly of hornblende, or of some member of the amphibole group of minerals. It is, as a rule, a synonym of hornblende schists, but is preferable to the latter when a highly foliated structure is not found.

ANDESITE.—A fine-grained igneous rock composed of plagioclase feldspar and biotite, hornblende, or augite; sometimes porphyritic, that is, having large, distinct crystals in a fine-grained groundmass; included in the group of rocks collectively named felsite.

ARGILLACEOUS.—Containing an appreciable amount of clay.

ARGILLITE.—An argillaceous rock, differing from shale in being hardened, and from slate in having no slaty cleavage.

APLITE (APLITIC GRANITE).—A fine-grained granite consisting chiefly of quartz and feldspar.

ARKOSIC.—Having the properties of arkose, which may be either a sandstone containing a high percentage of feldspar, or a sedimentary rock formed from material derived from the disintegration of granite, with the grains of rock transported and redeposited with little sorting.

AUGEN.—The German word for eyes; used as a prefix before certain rock names, especially gneiss, to describe large minerals or groups of minerals that contrast with the rest of the rock.

AUGITE.—A variety, containing aluminum, of the mineral pyroxene; usually black or dark green, occurring in igneous rock such as basalt; sometimes used to refer to any pyroxene.

BASIC.—A descriptive term for igneous rocks containing less than about 52 percent SiO_2.

BIOTITE.—A species of mica, generally black or dark green, forming a common constituent of crystalline rocks.

BASALT.—A dark gray to black, dense to fine-grained igneous rock, consisting of plagioclase feldspar (usually labradorite), augite, olivine, and usually magnetite. Some glass may be present. This is one of the types of rock which are referred to by the word "trap."

BRECCIA.—A rock composed of angular fragments of other rock, cemented together.

CALCAREOUS.—Containing calcite, calcium carbonate, or limestone.

CARBONACEOUS.—Containing carbon.

CHALCEDONIC.—Containing or having the properties of chalcedony, a transparent or translucent and minutely crystalline variety of quartz.

CHERT.—A hard, fine-grained rock composed of silica in the form of chalcedony, minutely crystalline quartz, or opal, or combinations of any of these three. Dense black or dark gray chert is sometimes called flint.

CHLORITE.—Any of a group of hydrated silicates, green in color, containing aluminum and iron, and derived from augite, hornblende, or biotite. They resemble mica in appearance but the flakes are not elastic.

CONGLOMERATE.—A rock composed of rounded fragments of another rock, cemented together into a coherent mass.

DACITE.—A fine-grained, igneous rock composed essentially of plagioclase feldspar and quartz, with or without hornblende and biotite; included in the group of rocks collectively named felsite.

DIABASE.—A basic igneous rock mineralogically the same as basalt and gabbro, but coarser-grained than basalt and finer-grained than gabbro. The plagioclase forms lath-shaped crystals lying in all directions among irregular grains of augite, giving rise to the peculiar diabasic texture. Included in the general name of "trap."

DIORITE.—A coarse- to medium-grained igneous rock composed essentially of plagioclase feldspar with some ferromagnesian minerals such as hornblende, augite, and biotite; the coarser-grain equivalent of andesite.

DOLOMITE.—A limestone or marble containing a large amount of magnesium carbonate; a rock having approximately the same composition as the mineral dolomite: magnesium carbonate, 45 percent; calcium carbonate, 55 percent

Table 2.—General classification of rock

Class	Type	Family	
Igneous	Intrusive (coarse-grained)	Aplite Diorite [1] Gabbro Granite [1] Granodiorite Hornblendite	Microgranite Pegmatite Peridotite Pyroxenite Syenite [1] Unakite
	Extrusive (fine-grained)	Andesite [1 2] Basalt [1] Dacite [2] Diabase Greenstone	Obsidian Pumice Rhyolite [1 2] Tephrite [1] Trachyte [1 2]
Sedimentary	Calcareous	Dolomite Limestone	Travertine
	Siliceous	Argillite Breccia [3] Chert Conglomerate [3]	Novaculite Sandstone Shale Siliceous sinter Tuff
Metamorphic	Foliated	Amphibolite Eclogite Epidosite	Gneiss Schist Slate
	Nonfoliated	Granulite Marble Quartzite	Serpentine Soapstone

[1] Frequently occurs as a porphyritic rock.
[2] Included in the general term felsite when constituent minerals cannot be determined quantitatively.
[3] May be composed partially or entirely of calcareous materials.

ECLOGITE.—A foliated metamorphic rock consisting of bright green pyroxene, actinolite, red garnet, and minor minerals.

EPIDOTE.—A silicate of calcium, aluminum, and iron of yellowish-green color. The presence of epidote in rock indicates the advance of alteration.

EPIDOSITE.—A metamorphic rock resembling schist but composed essentially of epidote.

FELDSPAR.—A general name for a group of important rock-forming minerals, including orthoclase and microcline, which are potassium-aluminum silicates, and plagioclase, a subgroup composed of sodium-aluminum silicate or calcium-aluminum silicate or mixtures of these two molecules.

FELDSPATHIC.—Containing feldspar.

FELSITE.—A general term for dense, igneous rock composed of quartz, feldspar, and ferromagnesian minerals which are so fine-grained that the composition of the rock is difficult to determine. The group includes rhyolite, dacite, trachyte, and andesite.

FERRUGINOUS.—Containing iron.

FLINT.—A dense, black to dark gray variety of chert.

FOSSILIFEROUS.—Containing fossils.

GABBRO.—A coarsely crystalline igneous rock composed mainly of lime-soda feldspar, pyroxene, amphibole, and frequently olivine. Magnetite or ilmenite, or both, and apatite are accessory minerals. It is generally dark colored, and the ferromagnesian minerals are usually more abundant than feldspar. It is the coarse-grained equivalent of basalt.

GNEISS.—A coarsely laminated or foliated metamorphic rock, corresponding in composition to granite or other coarse-grained igneous rocks containing feldspar.

GNEISSOID.—Tending to have the structure of gneiss.

GRANITE.—A granular igneous rock composed essentially of quartz, feldspar, and mica. The feldspar is mainly the varieties containing potassium (orthoclase and microcline) but some lime-soda feldspar (plagioclase) may be present. Hornblende, apatite, zircon, and magnetite are usually present in minor amounts.

GRANODIORITE.—A name used for rocks intermediate between granites and quartz-diorites.

GRANULITE.—A moderately fine-grained metamorphic rock composed chiefly of quartz and feldspar but commonly containing some garnet.

GRAPHIC GRANITE.—A variety of granite in which the quartz is so disposed in the feldspar that in cross section it has some resemblance to Hebrew and cuneiform writing.

GREENSTONE.—An old field name for compact, igneous rocks which have developed enough chlorite in alteration to give them a greenish color. If the rock is finely foliated, it is called greenstone schist.

GYPSUM.—Hydrous calcium sulfate.

HEMATITE.—Iron oxide.

HORNBLENDE.—The most common variety of the amphibole group of minerals; a silicate containing iron and magnesium of complex composition.

HORNBLENDITE.—A coarse-grained, igneous rock composed solely or predominantly of hornblende.

HYPERSTHENE.—One of the pyroxene group of minerals; a silicate of iron and magnesium.

IGNEOUS.—A group of rocks formed by the solidification of molten masses derived from within the earth; those which were cooled quickly are termed volcanic or extrusive, but those which cooled slowly are described as plutonic or intrusive.

INDURATED.—Hardened; applied to rocks hardened by heat, pressure, or the addition of some other material.

LEUCITE.—A silicate of potassium and aluminum.

LIMESTONE.—The general name for sedimentary rocks composed essentially of calcium carbonate.

MARBLE.—A metamorphosed and recrystallized limestone. In the trade, any limestone which will take a polish may be called marble.

MARL.—A calcareous clay, or mixure of clay and particles of calcite or dolomite, usually fragments of shells.

MICA.—Any of a group of silicate minerals which crystallize to form a material which can be separated into very thin, more or less elastic flakes. The principal micas are biotite or black mica, and muscovite (isinglass), a more or less colorless variety.

MICROGRANITE.—A name used for finely grained granite; synonymous with aplite.

MICROCLINE.—One of the so-called "alkali" or "potassium" feldspars; a silicate of potassium and aluminum.

MUSCOVITE.—A light-colored mica.

NEPHELITE (NEPHELINE).—A silicate of sodium, potassium, and aluminum, occurring in igneous rocks.

NODULAR.—Having the shape of, or composed of small, roundish lumps.

NOVACULITE.—An excessively fine-grained rock composed essentially of quartz, supposed to be a consolidated siliceous slime and of sedimentary origin.

OBSIDIAN.—Volcanic glass.

OLIVINE.—A silicate of iron and magnesium.

OOLITIC.—Composed of or similar to oolite, a variety of limestone consisting of round grains like the roe of a fish.

OPALINE.—Containing opal, a form of hydrous silica.

ORTHOCLASE.—One of the so-called "alkali" or "potassium" feldspars; a silicate of potassium and aluminum.

PEGMATITE.—Giant granite. An igneous rock, usually irregular in texture and composition, composed mainly of silicate minerals of large size.

PERIDOTITE.—A granular igneous rock composed essentially of olivine (peridot) with some form of pyroxene or hornblende, and biotite and chromite as the chief accessory minerals.

PISOLITIC.—Consisting of rounded grains like peas or beans.

PLAGIOCLASE.—A general name for the soda-lime feldspars which vary in composition from a silicate of sodium and aluminum to a silicate of calcium and aluminum, including all mixtures of these types.

PORPHYRY.—Any igneous rock in which large conspicuous crystals are enclosed by a fine-grained groundmass.

PUMICE.—A very porous volcanic glass, possibly best described as glass froth.

PYROXENE.—A group of silicate minerals, of simple or complex composition, which have essentially the same crystal form and many similar physical properties; chiefly silicates of iron, calcium, and magnesium.

PYROXENITE.—A coarse-grained igneous rock with pyroxene as the only or predominant mineral.

QUARTZ.—Silicon dioxide, in hexagonal crystals or crystalline masses.

QUARTZITE.—A metamorphosed quartz sandstone formed by the deposition of secondary silica between the original grains so that the rock is more firmly cemented and less porous than the original sandstone.

RHYOLITE.—A fine-grained igneous rock composed essentially of orthoclase feldspar and quartz, or of rock glass having the same composition, with or without biotite, hornblende, or pyroxene; the fine-grained equivalent of granite.

SANDSTONE.—A sedimentary rock consisting of grains of sand, usually quartz, united by some cement such as silica, iron oxide, calcite, etc.

SCHIST.—A crystalline metamorphic rock that can readily be split or cleaved due to its foliated or parallel structure developed by shearing and recrystallization under pressure.

SCHISTOSE.—Having a structure similar to schist.

SERICITE.—A minutely crystalline variety of muscovite (light-colored mica).

SERPENTINE.—A mineral composed of hydrous magnesium silicate and formed by the alteration of silicates rich in magnesium (pyroxene, amphibole, and especially olivine). The name is also used for rock composed of the mineral and altered from peridotite or pyroxenite.

SHALE.—A fine-grained rock formed by the consolidation of clay, mud, or silt, having a finely stratified or laminated structure.

SILICEOUS.—Containing silica, especially quartz.

SINTER.—A chemical sediment deposited by a mineral spring.

SLATE.—A dense, exceedingly fine-grained metamorphic rock produced by compression of clays, shales, etc., which has an excellent parallel cleavage so that it breaks into thin plates or pencil-like shapes.

SOAPSTONE.—A soft, massive metamorphic rock composed of a variable mixture of talc and chlorite.

STEATITE.—see soapstone.

SYENITE.—A granular, igneous rock composed of orthoclase with or without microcline, plagioclase, hornblende, biotite, and augite; may be considered a granite without quartz.

TALC.—Hydrous magnesium silicate; a soft mineral with a soapy feel.

TEPHRITE.—A very fine-grained rock composed of plagioclase feldspar, nephelite, and augite, but with little or no olivine. May also resemble a porphyry.

TOPAZ.—A hard mineral composed of aluminum fluosilicate.

TRACHY-ANDESITE.—A rock intermediate between trachytes and andesites.

TRACHYTE.—A fine-grained igneous rock consisting mainly of feldspars containing potassium, usually with mica, amphibole, and pyroxene but with little if any quartz; sometimes glassy; the fine-grained equivalent of syenite.

TRAP.—A field name for dark, fine-grained igneous rock, especially basalt and diabase.

TRAVERTINE.—A rock composed of calcium carbonate deposited from solution in ground or surface waters.

TUFF.—A sedimentary rock composed of fine material explosively ejected from a volcano and subsequently compacted to a solid mass.

UNAKITE.—A granite containing pink feldspar and rich in green epidote.

URALITIC.—Containing uralite, a variety of hornblende in the form of fibers or fine needles.

VITREOUS.—Like glass.

VITRIFIED.—Converted into a glassy substance by heat and fusion.

VOLCANIC.—A variety of igneous rock which is fine-grained or glassy due to rapid cooling upon or near the surface of the earth.

Symbols used in tables

Many of the samples of gravel and sand reported in tables 10 and 11 are composed of several different types of rock. The symbols shown below were used to indicate these types in the tables. Those enclosed in parentheses in the tables refer to materials present in minor amounts.

Symbol	*Name*
Am	Amphibolite
An	Andesite
B	Basalt
Bfs	Blast-furnace slag
C	Chert
Co	Conglomerate
D	Diabase
Di	Diorite
Do	Dolomite
F	Feldspar
Fe	Felsite
G	Granite
Ga	Gabbro
Gn	Gneiss
H	Hornblende
L	Limestone
M	Mica
Ma	Magnetite
Me	Marble
O	Obsidian
P	Peridotite
Q	Quartz
Qz	Quartzite
R	Rhyolite
S	Sandstone
Sc	Schist
Sh	Shale
Sl	Slate
Sy	Syenite
T	Trap
Tr	Trachyte

Average Values

Average values for the physical properties of the principal kinds of rock computed from the data presented in table 10 are shown in table 3. Although this information may be helpful in assessing the quality of a given sample of stone, information regarding the spread in test results with respect to number of samples tested should be of greater value. Such data are given in tables 4–9. In these tables, the lowest value found for any sample of rock of a kind as reported in table 10 is given, together with the maximum value for each 10 percent of all samples of that kind of rock tested. As an example (see table 4), 20 percent of all samples of amphibolite had a bulk specific gravity of 2.96 or less, and all samples had a bulk gravity of 3.33 or less. If two samples of amphibolite should be tested and found to have bulk gravities of 3.02 and 3.09, reference to these tables would show that the first has a lower gravity than 50 percent of all samples tested, and that the other, with a gravity equal to or greater than that for 80 percent of all samples tested, is probably a fresh and unweathered material.

No data for compressive strength or soundness of rock, nor for gravel, slag, or fine aggregate, have been summarized due to limited data for rock and slag or to lack of a common ground, that is, a distinct lithological classification, for samples of gravel and natural fine aggregate. Variations in the lithological classification of naturally sized aggregates from sample to sample from a given source prevent the computation of average values as prepared for rock,

Table 3.—Average values for the physical properties of the principal kinds of rock

Kind of rock	Bulk specific gravity		Absorption		Loss by abrasion				Hardness		Toughness	
					Deval test		Los Angeles test					
	Number of tests	Average	Number of tests	Average	Number of tests	Average	Number of tests	Average	Number of tests	Average	Number of tests	Average
				Pct.		*Pct.*		*Pct.*				
Amphibolite	81	3.02	81	0.4	87	3.9	30	35	56	16	70	14
Basalt	229	2.86	228	.5	203	3.1	24	14	192	17	203	19
Breccia	22	2.57	22	1.8	25	6.4	-----	-----	22	17	17	11
Chert	74	2.50	74	1.6	78	8.5	6	26	29	19	29	12
Conglomerate	25	2.68	26	1.2	27	10.0	-----	-----	11	16	11	8
Diabase	332	2.96	309	.3	340	2.6	63	18	253	18	285	20
Diorite	59	2.92	57	.3	60	3.1	-----	-----	45	18	48	15
Dolomite	668	2.70	667	1.1	708	5.5	134	25	586	14	612	9
Eclogite	8	3.11	8	.1	9	2.5	-----	-----	6	18	6	21
Epidosite	22	3.03	22	.4	20	3.7	10	20	19	18	18	17
Felsite [1]	149	2.66	147	.8	150	3.8	9	18	118	18	127	17
Gabbro	46	2.96	46	.3	45	3.0	4	18	38	18	42	14
Gneiss	419	2.74	424	.3	602	5.9	293	45	365	18	386	9
Granite [2]	662	2.65	666	.3	718	4.3	174	38	589	18	703	9
Limestone	1,695	2.66	1,673	.9	1,677	5.7	350	26	1,209	14	1,315	8
Marble	184	2.63	162	.2	175	6.3	41	47	162	13	188	6
Peridotite	10	3.31	9	.3	7	4.1	-----	-----	5	15	7	9
Quartzite	208	2.69	204	.3	233	3.3	119	28	146	19	161	16
Sandstone	716	2.54	707	1.8	699	7.0	95	38	613	15	681	11
Schist	297	2.85	296	.4	314	5.5	136	38	180	17	212	12
Serpentine	20	2.62	20	.9	19	6.3	13	19	11	15	13	14
Slate	84	2.74	78	.5	71	4.7	7	20	57	15	69	18
Syenite	39	2.74	38	.4	31	4.1	14	24	26	18	32	14

[1] Including andesite, dacite, rhyolite, and trachyte.

[2] Including granodiorite, pegmatite, and unakite.

Table 4.—Distribution of test results for bulk specific gravity

Kind of rock	Minimum	Maximum for given percentages of all samples tested [1]									
		10 percent	20 percent	30 percent	40 percent	50 percent	60 percent	70 percent	80 percent	90 percent	100 percent
Amphibolite	2.75	2.90	2.96	3.00	3.00	3.03	3.05	3.07	3.09	3.10	3.33
Basalt	2.54	2.70	2.77	2.80	2.84	2.85	2.90	2.90	2.95	2.99	3.02
Breccia	2.05	2.15	2.21	2.50	2.56	2.60	2.65	2.67	2.70	2.90	3.00
Chert	1.92	2.25	2.38	2.43	2.49	2.50	2.58	2.60	2.60	2.65	2.95
Conglomerate	2.38	2.42	2.53	2.58	2.65	2.65	2.70	2.74	2.80	2.81	3.01
Diabase	2.65	2.87	2.90	2.95	2.95	2.96	2.99	3.00	3.00	3.04	3.21
Diorite	2.70	2.71	2.79	2.85	2.90	2.92	2.95	3.00	3.04	3.05	3.35
Dolomite	2.12	2.54	2.60	2.65	2.69	2.70	2.75	2.79	2.80	2.84	2.92
Eclogite [2]	2.95	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.66
Epidosite	2.75	2.75	2.89	2.91	2.99	3.00	3.02	3.05	3.17	3.20	3.49
Felsite [3]	2.15	2.40	2.59	2.63	2.65	2.65	2.69	2.71	2.79	2.85	3.09
Gabbro	2.73	2.75	2.84	2.87	2.90	2.95	3.00	3.00	3.03	3.05	3.65
Gneiss	2.48	2.63	2.65	2.66	2.69	2.70	2.73	2.75	2.79	2.89	3.33
Granite [4]	2.15	2.60	2.61	2.62	2.64	2.65	2.65	2.65	2.68	2.70	3.02
Limestone	1.74	2.49	2.59	2.65	2.67	2.70	2.70	2.70	2.71	2.75	2.85
Marble	2.61	2.69	2.70	2.70	2.72	2.75	2.78	2.81	2.84	2.85	2.90
Peridotite [2]	2.65	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.85
Quartzite	2.30	2.60	2.62	2.64	2.65	2.65	2.67	2.70	2.75	2.80	3.15
Sandstone	1.63	2.31	2.43	2.48	2.50	2.55	2.60	2.65	2.69	2.70	3.25
Schist	2.22	2.67	2.70	2.73	2.75	2.80	2.89	2.95	3.00	3.05	3.21
Serpentine	2.35	2.35	2.50	2.57	2.60	2.62	2.65	2.69	2.71	2.79	2.80
Slate	2.37	2.62	2.69	2.70	2.70	2.74	2.75	2.75	2.79	2.81	3.35
Syenite	2.45	2.52	2.55	2.64	2.68	2.70	2.75	2.84	2.89	2.97	3.06

[1] For each kind of rock, the lowest value determined is given together with the maximum value for each 10 percent of the samples tested. For example, 60 percent of all amphibolites tested had a bulk specific gravity of 3.05 or less.

[2] Less than 10 samples tested. Minimum and maximum values only are shown.

[3] Including andesite, dacite, rhyolite, and trachyte.

[4] Including granodiorite, pegmatite, and unakite.

Table 5.—Distribution of test results for absorption

Kind of rock	Minimum	Maximum for given percentages of all samples tested [1]									
		10 percent	20 percent	30 percent	40 percent	50 percent	60 percent	70 percent	80 percent	90 percent	100 percent
Amphibolite	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.5	0.8	2.2
Basalt	.0	.1	.1	.1	.2	.2	.3	.5	.7	1.1	3.5
Breccia	.1	.1	.2	.4	.7	1.2	1.5	1.5	3.5	4.8	6.7
Chert	.1	.2	.3	.4	.7	1.1	1.3	1.9	2.4	3.7	8.9
Conglomerate	.2	.2	.2	.2	.2	.3	.4	.6	1.9	2.9	6.4
Diabase	.0	.0	.1	.1	.1	.2	.2	.2	.3	.5	4.2
Diorite	.0	.1	.1	.2	.2	.2	.3	.3	.4	.5	1.8
Dolomite	.0	.2	.2	.3	.5	.7	1.0	1.3	1.7	2.4	9.0
Eclogite [2]	.0	-----	-----	-----	-----	-----	-----	-----	-----	-----	.1
Epidosite	.1	.1	.1	.2	.3	.3	.4	.4	.5	.6	.9
Felsite [3]	.0	.1	.1	.1	.2	.2	.3	.6	1.2	2.5	5.3
Gabbro	.0	.1	.1	.1	.1	.2	.2	.2	.3	.4	1.1
Gneiss	.0	.1	.1	.2	.2	.2	.3	.4	.4	.6	2.4
Granite [4]	.0	.1	.2	.2	.2	.3	.3	.4	.4	.5	1.9
Limestone	.0	.1	.2	.3	.3	.4	.6	.8	1.3	2.0	17.8
Marble	.0	.1	.1	.1	.1	.2	.2	.2	.2	.3	1.3
Peridotite [2]	.0	-----	-----	-----	-----	-----	-----	-----	-----	-----	.6
Quartzite	.0	.1	.1	.2	.2	.2	.2	.3	.4	.6	1.9
Sandstone	.1	.2	.4	.6	.8	1.1	1.5	1.9	2.5	4.2	19.9
Schist	.0	.1	.1	.2	.2	.3	.3	.4	.5	.8	2.7
Serpentine	.0	.1	.2	.2	.3	.5	.6	.6	1.2	2.6	3.8
Slate	.1	.1	.1	.2	.2	.3	.4	.4	.7	1.0	4.3
Syenite	.1	.1	.1	.1	.2	.2	.3	.4	.5	.9	2.0

[1] For each kind of rock, the lowest value determined is given together with the maximum value for each 10 percent of the samples tested. For example, 70 percent of all amphibolites tested had an absorption of 0.3 percent or less.

[2] Less than 10 samples tested. Minimum and maximum values only are shown.
[3] Including andesite, dacite, rhyolite, and trachyte.
[4] Including granodiorite, pegmatite, and unakite.

Table 6.—Distribution of Deval abrasion test results (percentage of wear)

Kind of rock	Minimum	Maximum for given percentages of all samples tested [1]									
		10 percent	20 percent	30 percent	40 percent	50 percent	60 percent	70 percent	80 percent	90 percent	100 percent
Amphibolite	1.0	1.8	2.2	2.5	2.8	3.2	3.5	4.0	4.9	6.4	19.0
Basalt	1.3	1.8	2.0	2.2	2.3	2.6	2.9	3.1	3.7	4.6	13.6
Breccia	1.4	2.5	3.7	4.1	4.8	5.7	5.9	7.2	7.8	12.1	24.6
Chert	1.6	3.3	4.3	4.6	5.4	6.3	7.9	10.2	11.9	15.8	28.0
Conglomerate	3.4	3.5	4.1	4.5	4.8	5.6	5.9	7.7	21.2	21.6	31.6
Diabase	1.1	1.7	1.8	2.0	2.2	2.5	2.7	2.9	3.2	3.8	11.1
Diorite	1.7	2.1	2.3	2.4	2.7	2.8	3.0	3.2	3.9	4.8	5.8
Dolomite	1.2	3.2	3.6	4.1	4.5	4.9	5.4	6.0	6.9	8.4	26.2
Eclogite [2]	1.8	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.3
Epidosite	2.0	2.1	2.1	2.6	2.7	3.0	3.3	3.6	4.0	6.2	7.9
Felsite [3]	1.4	2.0	2.5	2.7	2.9	3.2	3.5	4.1	4.6	6.1	21.1
Gabbro	1.3	1.7	2.2	2.4	2.7	2.8	3.0	3.2	3.7	4.7	5.9
Gneiss	1.7	3.0	3.5	4.0	4.4	5.0	5.6	6.4	7.6	10.1	25.3
Granite [4]	1.1	2.4	2.9	3.2	3.6	3.9	4.2	4.6	5.3	6.5	25.6
Limestone	.7	3.4	3.8	4.1	4.5	4.8	5.2	5.7	6.6	8.4	50.9
Marble	2.3	3.8	4.2	4.7	5.0	5.5	5.9	6.8	7.6	10.2	27.0
Peridotite [2]	3.0	-----	-----	-----	-----	-----	-----	-----	-----	-----	5.3
Quartzite	1.4	2.1	2.4	2.6	2.8	3.1	3.3	3.5	4.0	4.7	8.6
Sandstone	1.0	2.4	2.9	3.3	3.7	4.4	5.1	6.4	9.3	16.2	46.8
Schist	1.3	2.8	3.3	3.5	4.1	4.5	5.2	6.0	7.1	9.5	23.3
Serpentine	1.9	2.5	2.6	3.2	4.9	5.1	5.4	6.7	8.0	11.0	16.4
Slate	1.6	2.0	2.5	2.8	3.8	4.1	4.5	4.8	5.9	8.6	17.1
Syenite	1.6	2.2	2.3	2.5	3.1	3.3	3.7	4.1	5.0	6.2	14.4

[1] For each kind of rock, the lowest value determined is given together with the maximum value for each 10 percent of the samples tested. For example, 60 percent of all amphibolites tested had a Deval percentage of wear of 3.5 or less.

[2] Less than 10 samples tested. Minimum and maximum values only are shown.
[3] Including andesite, dacite, rhyolite, and trachyte.
[4] Including granodiorite, pegmatite, and unakite.

Table 7.—Distribution of Los Angeles abrasion test results (percentage of wear)

Kind of rock	Minimum	Maximum for given percentages of all samples tested [1]									
		10 percent	20 percent	30 percent	40 percent	50 percent	60 percent	70 percent	80 percent	90 percent	100 percent
Amphibolite	14	19	22	23	27	30	33	43	46	55	77
Basalt	7	10	10	10	13	14	14	17	17	19	22
Breccia [2]	------	------	------	------	------	------	------	------	------	------	------
Chert [3]	14	------	------	------	------	------	------	------	------	------	40
Conglomerate [3]	25	------	------	------	------	------	------	------	------	------	66
Diabase	2	10	13	14	16	17	19	20	21	22	53
Diorite [3]	20	------	------	------	------	------	------	------	------	------	26
Dolomite	13	16	18	20	21	24	25	26	30	35	98
Eclogite [2]	------	------	------	------	------	------	------	------	------	------	------
Epidosite	13	13	14	15	16	16	17	21	22	30	36
Felsite [3 4]	16	------	------	------	------	------	------	------	------	------	23
Gabbro [3]	13	------	------	------	------	------	------	------	------	------	31
Gneiss	17	29	33	36	40	43	47	51	57	64	94
Granite [5]	15	25	27	30	33	36	40	43	49	56	87
Limestone	12	17	19	21	22	24	26	28	30	35	85
Marble	16	23	26	36	44	47	52	59	64	67	74
Peridotite [3]	13	------	------	------	------	------	------	------	------	------	15
Quartzite	4	16	20	23	25	26	28	30	35	42	56
Sandstone	12	18	24	26	28	33	37	40	48	71	100
Schist	8	22	26	32	35	36	41	44	49	56	75
Serpentine	12	12	16	18	18	19	19	20	20	22	25
Slate [3]	12	------	------	------	------	------	------	------	------	------	26
Syenite	14	14	15	16	18	18	19	21	27	39	65

[1] For each kind of rock, the lowest value determined is given together with the maximum value for each 10 percent of the samples tested. For example, 60 percent of all amphibolites tested had a Los Angeles percentage of wear of 33 or less.

[2] No tests made.
[3] Less than 10 samples tested. Minimum and maximum values only are shown.
[4] Including andesite, dacite, rhyolite, and trachyte.
[5] Including granodiorite, pegmatite, and unakite.

Table 8.—Distribution of results for Dorry hardness test

Kind of rock	Minimum	Maximum for given percentages of samples tested [1]									
		10 percent	20 percent	30 percent	40 percent	50 percent	60 percent	70 percent	80 percent	90 percent	100 percent
Amphibolite	0	11	15	17	17	18	18	18	19	19	19
Basalt	6	14	17	17	18	18	18	18	18	19	19
Breccia	5	12	12	17	18	19	19	19	19	19	19
Chert	15	16	19	19	19	19	19	19	20	20	20
Conglomerate	9	9	9	17	17	17	18	18	18	19	19
Diabase	11	17	18	18	18	18	18	19	19	19	19
Diorite	17	17	17	18	18	19	19	19	19	19	19
Dolomite	0	11	13	14	14	15	15	16	17	17	19
Eclogite [2]	17	------	------	------	------	------	------	------	------	------	19
Epidosite	10	16	18	18	18	19	19	19	19	19	20
Felsite [3]	5	15	17	17	18	18	18	19	19	19	20
Gabbro	13	17	17	18	18	18	18	18	19	19	19
Gneiss	9	16	17	17	18	18	18	18	19	19	20
Granite [4]	0	18	18	18	18	18	19	19	19	19	20
Limestone	0	10	12	14	14	15	16	16	17	17	19
Marble	0	9	11	12	13	14	14	15	16	17	19
Peridotite [3]	13	------	------	------	------	------	------	------	------	------	17
Quartzite	11	17	18	18	19	19	19	19	19	19	20
Sandstone	0	6	12	15	16	17	18	18	18	19	20
Schist	1	14	16	16	17	17	18	18	18	19	19
Serpentine	0	0	12	12	14	18	18	19	19	19	19
Slate	1	11	12	14	15	16	17	18	18	19	20
Syenite	16	17	17	18	19	19	19	19	19	19	19

[1] For each kind of rock, the lowest value determined is given together with the maximum value for each 10 percent of the samples tested. For example, 20 percent of all amphibolites tested had a hardness value of 15 or less.

[2] Less than 10 samples tested. Minimum and maximum values only are shown.
[3] Including andesite, dacite, rhyolite, and trachyte.
[4] Including granodiorite, pegmatite, and unakite.

Table 9.—Distribution of results for the test for resistance to impact (toughness test)

Kind of rock	Minimum	Maximum for given percentages of samples tested [1]									
		10 percent	20 percent	30 percent	40 percent	50 percent	60 percent	70 percent	80 percent	90 percent	100 percent
Amphibolite	4	7	8	9	10	12	14	17	18	25	40
Basalt	4	8	10	13	16	19	21	23	26	30	47
Breccia	3	3	4	7	8	10	10	12	17	17	34
Chert	3	4	5	7	7	9	11	15	17	20	26
Conglomerate	3	3	3	5	7	8	9	10	10	13	16
Diabase	4	11	12	14	17	19	20	23	27	31	54
Diorite	7	8	9	10	11	12	15	17	20	23	36
Dolomite	2	4	5	6	7	8	9	10	11	14	29
Eclogite [2]	14	------	------	------	------	------	------	------	------	------	31
Epidosite	5	8	10	11	14	16	17	22	22	23	39
Felsite [3]	3	8	10	11	13	16	17	20	23	28	45
Gabbro	7	8	10	12	12	13	14	15	17	18	23
Gneiss	2	5	6	7	7	8	9	10	11	13	26
Granite [4]	3	5	6	7	8	8	9	10	11	14	57
Limestone	2	4	5	5	6	7	8	9	10	13	28
Marble	2	3	3	4	4	5	6	6	7	9	24
Peridotite [2]	4	------	------	------	------	------	------	------	------	------	12
Quartzite	4	8	9	12	13	14	16	19	21	24	58
Sandstone	1	4	5	7	8	9	10	12	14	19	47
Schist	3	5	6	7	8	10	11	14	16	22	45
Serpentine	3	3	5	6	8	11	14	14	16	21	39
Slate	4	6	9	10	11	13	17	21	27	32	61
Syenite	5	8	8	10	11	11	13	15	23	25	30

[1] For each kind of rock, the lowest value determined is given together with the maximum value for each 10 percent of the samples tested. For example, 60 percent of all amphibolites tested had a toughness value of 14 or less.

[2] Less than 10 samples tested. Minimum and maximum values only are shown.
[3] Including andesite, dacite, rhyolite, and trachyte.
[4] Including granodiorite, pegmatite, and unakite.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951

ALABAMA

Location and type of source			Year sampled	Laboratory No	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Blount	Bangor	Local	1938	46405	Stone	Limestone				3.8									
Do	do	do	1938	46406	do	do				2.8									
Do	do	do	1938	46428	do	do				5.3									
Do	do	do	1938	46432	do	do				5.1									
Calhoun	Anniston	Prosp	1904	1006	do	Chert		2.60	0.4										
Do	do	Comm	1905	1478	do	Limestone		2.70	.2	3.9				15.2	9				
Do	do	Prosp	1910	4382	do	Quartzite		2.65	.1	3.4				19.7	21				
Do	do	Comm	1918	12717	Slag											64	2–#4		
Do	do	Prosp	1918	13509	Stone	Limestone		2.25	.1	5.4				16.0	6				
Do	do	do	1918	13510	do	Dolomite		2.82	.2	5.0				16.0	8				
Do	do	Comm	1921	18011	Slag	Blast furnace		2.94	.3					17.3	9				
Do	do	do	1921	18712	do	do		2.87	.3	2.4				17.0	12				
Do	do	do	1921	20081	do	do		2.39	1.1	11.5				13.3	7	88	2–#4		
Do	do	do	1923	22794	do	do										88	2–#4		
Do	do	do	1934	40347	do	do					40.8	A							
Do	do	do	1935	40990	do	do					33.5	A							
Do	do	do	1935	40991	do	do					34.0	A							
Do	do	do	1935	40992	do	do					32.6	A							
Do	do	do	1937	44383	do	do					28.4	A				99			
Do	Camp McClellan.	Prosp	1918	13387	Stone	Limestone		2.72	.1	6.8				14.7	4				
Do	do	do	1918	13388	do	do		2.79	.4	6.0				17.3	9				
Do	do	do	1918	13389	do	do		2.72	.2	4.8				14.7	9				
Do	do	do	1918	13390	do	Siliceous limestone.		2.83	.2	4.6				17.3	6				
Do	do	do	1918	13504	do	Dolomite		2.76	.5	7.2									
Do	do	do	1918	13506	do	Sandstone		2.47	.9	6.1				19.1	10				
Do	do	do	1918	13507	do	Limestone		2.72	.1	4.7				15.3	8				
Do	do	do	1918	13508	do	do		2.77	.4	11.6									
Colbert	Margerum	do	1921	20821	do	Bituminous limestone.		2.31	.8	4.7				3.3	5				
Do	do	Comm	1939	46431	do	do				5.7									
Do	do	do	1939	46433	do	do				4.6									
Do	Sheffield	Comm	1946	71126	Gravel	Chert	1	2.38	3.4		21.5	B						14.4	1–#4
Cullman	Cullman	Prosp	1908	2450	Stone	Sandstone		2.45	.6	4.8				15.1	10				
Do	do	do	1908	2451	do	Limestone		2.70	.3	3.4				15.1	8				
Do	do	do	1908	2856	do	do		2.65	.4	6.8				12.9	6				
Do	do	do	1914	7587	do	Sandstone		2.50	.6	9.2				18.5	6				
Do	do	do	1914	7588	do	do		2.55	.1	6.6				17.8	6				
Do	do	do	1914	7786	do	do		2.50	1.3	8.6				15.6	7				
Dallas	Selma	do	1911	5054	do	Limestone		2.65	1.0	7.8				15.0	7				
Do	Selma (Alabama River).	Comm	1923	22734	Gravel	QC	1½			14.5		A							
Elmore	Elmore	do	1942	60550	do	QQzS(C)	1½				54.8	A							
Do	Prattville Junction.	do	1942	60551	do	QQzC	1½				38.7	A							
Escambia	Flomaton	do	1943	62238	do	Q(QzC)	1				47.5	B							
Etowah	Alabama City	do	1922	21855	Slag	Blast furnace				12.2									
Do	do	do	1922	22564	do	do				9.7						67	2–#4		
Do	do	do	1924	25264	do	do				16.0						62	2–¾		
Do	Glencoe	do	1934	40344	Stone	Limestone					29.8	A							
Do	do	do	1942	55794	do	Dolomitic limestone.		2.80	.5		18.6	B	36,900						
Fayette	Berry	Local	1903	805	Stone	Limestone		2.70	.3	3.1									
Do	do	Prosp	1923	23537	do	Feldspathic sandstone.		2.48	2.4	5.6				15.3	6				
Franklin	Rockwood	Comm	1924	24864	do	Limestone		2.54	1.7	7.2				11.7	6				
Hale	Faunsdale	Prosp	1901	426	do	do		2.61	1.6	17.4									
Jackson	Bridgeport	Comm	1916	10138	do	Oolitic limestone		2.70	.1	4.4				15.7	5				
Do	Lim Rock	Prosp	1921	20354	do	Limestone		2.69	.1	4.4				16.3	7				
Do	Scottsboro	do	1920	16112	do	Crystalline limestone.		2.80	.3	3.8				15.3	8				
Do	do	do	1920	16113	do	Argillaceous limestone.		2.67	.2	6.2				18.0	6				
Jefferson	Birmingham	do	1901	391	do	Chert		2.61	.8	10.2									
Do	do	do	1901	392	do	do		2.55	1.4	8.2									
Do	do	do	1901	393	do	do		2.45	2.2	9.5									

Do	do	Comm	1901	442	do	Dolomite		2.70	.7	5.7										
Do	do	Prosp	1906	1517	do	Limestone		2.55	1.8	6.5				15.4	10					
Do	do	Comm	1916	9985	do	do		2.70	.3	5.0				15.3	6					
Do	do	do	1917	11401	Slag	Blast furnace		2.09	4.4	10.4				15.3	4					
Do	do	do	1918	13503	do	do		2.27	2.3	10.8										
Do	do	do	1918	13505	Stone	Chert		2.36	4.0											
Do	do	do	1920	16654	Slag	Blast furnace		2.46								78	⅝–#4			
Do	do	do	1920	16670	do	do		2.49		6.0										
Do	do	do	1922	21802	do	do				6.5						80	2–⅜			
Do	do	do	1922	21887	do	do										79	⅝–#4			
Do	do	do	1922	22305	do	do				6.7						78	2–⅝			
Do	do	do	1922	22504	do	do				11.0						66	3–1¼			
Do	do	do	1923	23073	do	do										77	1½–#4			
Do	do	do	1923	23089	do	do										82	1½–#4			
Do	do	do	1923	23437	do	do				6.8						79	2–⅝			
Do	do	do	1924	26060	do	do										90	1½–#4			
Do	do	do	1926	28039	do	do		2.08		11.4				15.3	6					
Do	do	do	1934	40067	do	do					31.6	A								
Do	do	do	1934	40086	do	do					27.8	A								
Do	do	do	1934	40115	do	do					29.4	A								
Do	do	do	1935	40984	do	do					24.8	A								
Do	do	do	1935	40985	do	do					28.2	A								
Do	do	do	1935	40986	do	do					29.1	A								
Do	do	do	1937	44385	do	do					39.1	A				84	¾–⅜			
Do	do	do	1939	44463	do	do		2.28	1.1											
Do	do	do	1943	62240	Stone	Quartzite		2.63	.4											
Do	do	do	1948	72637	Slag	Blast furnace					35.0	A								
Do	do	do	1948	74716	do	do					36.6	A								
Do	Ensley	do	1901	395	do	do		2.70	.3	7.6										
Do	do	do	1915	8879	do	do		2.50	1.8	10.1				15.7	6					
Do	do	do	1915	8880	do	do		2.80	.4					17.0	6					
Do	do	do	1917	11470	do	do		2.27	2.8	8.5				15.7	6					
Do	do	do	1922	22421	do	do				8.6						72	2½–1¼			
Do	do	do	1922	22422	do	do										88	¾–#4			
Do	do	do	1923	23095	do	do										80	1½–#4			
Do	do	do	1923	23096	do	do										82	1½–#4			
Do	do	do	1925	25330	do	do										89	1½–#4			
Do	do	do	1934	40346	do	do					34.3	A								
Do	do	do	1937	44381	do	do					29.5	A				84	¾–⅜			
Do	do	do	1940	48876	do	do					36.4	A								
Do	Fairfield	do	1934	40345	do	do					28.2	A								
Do	do	do	1937	44382	do	do					26.8	A				78				
Do	Leeds	Prosp	1904	966	Stone	Chert		2.60	.4	15.8										
Do	do	do	1904	967	do	do		2.60	.4											
Do	Tarrant City	Comm	1942	55796	do	Limestone		2.60	1.9		20.4	B	33, 100			80	1¼–#4			
Do	Woodward	do	1925	26740	Slag	Blast furnace														
Do	do	do	1934	40116	do	do					24.6	A								
Do	do	do	1935	40987	do	do					34.7	A								
Do	do	do	1935	40988	do	do					30.6	A								
Do	do	do	1935	40989	do	do					27.7	A								
Do	do	do	1937	44384	do	do					31.3	A				79	¾–⅜			
Lauderdale	Cloverdale	Local	1941	54738	Gravel						13.6	A								
Do	do	do	1941	54739	do						15.4	A								
Do	do	do	1945	70020	do	Chert		2.38	2.6		13.6	A								
Do	Florence	Prosp	1921	19997	Stone	do				28.0										
Do	do	do	1921	19998	do	do				25.1										
Do	do	do	1924	24714	do	Cherty limestone		2.42	2.4	5.1				18.0	29					
Do	Gravelly Springs	Local	1941	54740	Gravel						17.0	B								
Do	do	do	1945	70019	Stone	Argillaceous limestone.		2.49	2.8		15.5	B								
Lee	Opelika	Prosp	1921	19981	do	Mica gneiss		2.59	1.6	25.3										
Limestone	Athens	do	1920	16186	do	Chert		2.34	2.8	10.7										
Do	do	do	1920	16188	do	Dolomitic marble		2.70	.4	4.4				14.7	7					
Do	do	do	1920	16189	do	Crystalline limestone.		2.69	.5	5.3				13.3	5					
Macon	Milstead	Comm	1935	40993	Gravel	Quartz				21.6	49.4	A								
Madison	Huntsville	Prosp	1922	21348	Stone	Shale				22.8										
Mobile	Mobile	Comm	1942	60549	Gravel	C(Q)	1½	2.55	1.3		19.8	B								
Do	do	do	1943	62236	do	Q(QzC)	1	2.62	.7											
Montgomery	Hunter	do	1927	29322	do	QC		2.63		18.5		A								
Do	Montgomery	do	1927	29686	do	QC		2.58	1.0	12.8		A								
Do	do	do	1928	30155	do	QC		2.61	.3	12.1		A								
Do	do	do	1932	34624	do					11.9		B								
Do	do	do	1932	34628	do	QCS				12.9		B								
Do	do	do	1935	40891	do	QQzC				17.7	44.4	A								
Do	do	do	1943	61922	do	QSQzC	1½	2.60	.6											
Morgan	Decatur	do	1949	76705	do	C(QScQz)	1½	2.48	2.4		37.2	A						12.5	1½–#4	
Do	Flint	Local	1918	12812	Stone	Limestone		2.67	.1	6.0				13.3	6					
Do	Hartselle	Prosp	1908	2856	do	do		2.65	.4	6.8				12.9	6					
Do	do	do	1920	16074	do	do		2.65	.4	5.0				16.3	6					

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

ALABAMA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Morgan	Lacon	Prosp	1920	16072	Stone	Limestone		2.69	0.3	3.4				15.3	8				
Do	do	do	1920	16073	do	do		2.69	.3	3.5				15.3	9				
Do	do	do	1938	46404	do	do				3.6									
Do	do	Comm	1942	55797	do	do		2.67	.4		21.0	B	24,500						
Do	New Decatur	Prosp	1913	6856	do	Crystalline limestone.		2.75	.6	3.9				15.4	7				
Saint Clair	Leeds	Local	1914	7937	do	Chert		2.30	.4	13.8									
Do	Pell City	do	1923	23156	do	do		2.21	3.7	10.2									
Shelby	Pelham	Comm	1942	55795	do	Argillaceous limestone.		2.70	.1		20.7	B	29,400						
Talladega	Brownson	Prosp	1922	21295	do	Marble								9.3	4				
Do	Gantts Quarry	Local	1917	11506	do	do		2.71	.2	5.9				9.7	4				
Tuscaloosa	Brookwood	do	1942	55931	Gravel	QC	1½	2.54	1.6		24.6	B							
Do	Tuscaloosa (Black Warrior River).	Comm	1943	61923	do	QQzC	1	2.58	.8		33.1	B							
Do	Vance	Prosp	1908	2854	Stone	Limestone		2.70	.1	4.6				17.7	8				
Walker	Jasper	do	1936	42837	do	Sandstone				9.3									
Do	do	do	1936	42838	do	do				25.9									
Do	do	do	1936	42839	do	do				17.8									
Do	do	do	1936	42840	do	do				7.5									
Wilcox	Furman	Local	1906	1575	do	Limestone		2.60	1.7	4.8				10.3	7				
Do	Pine Apple	Prosp	1906	1643	do	do		2.50	3.1	5.3				11.0	6				
Do	Snow Hill	Local	1906	1580	do	do		2.60	1.6	4.5				17.1	8				
Winston	Double Springs	Prosp	1939	46909	do	Feldspathic sandstone.				6.6								U	1½–1
Do	do	do	1939	46910	do	Sandstone				25.1								U	1½–1

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Cochise	Bisbee	Prosp	1914	7837	Stone	nestone		2.70	0.2	5.3				18.1	6				
Do	do	do	1923	23032	do	rble		2.70	.1	6.8			14,020	10.7	4				
Do	do	do	1923	23487	do	rt		2.65	.7					19.2	15				
Do	do	do	1923	23609	do	llaceous limestone.		2.68	1.0					6.3					
Do	do	do	1923	23610	do	uginous chert		2.89	.8					19.5	14				
Do	do	do	1923	23611	do	ble		2.69	.5					12.5	5				
Do	do	do	1926	28328	do	do		2.72	.2	7.6									
Do	do	do	1926	28329	do	olite		2.59	.4	5.4				16.0	12				
Do	do	do	1926	28330	do	eous limestone		2.50	2.3	10.4									
Do	do	do	1926	28331	do	olite		2.88	.1	5.6			17,250	18.0	8				
Do	do	do	1926	28332	do	artzite		2.78	.2	5.8			23,300	16.7	16				
Do	do	do	1926	28333	do	mestone		2.70	.2	5.2			11,560	16.0	6				
Do	do	do	1926	28334	do	do		2.71	.3	5.2			22,590	14.7	7				
Do	do	do	1926	28335	do	Marble		2.83	.1	4.8			35,390	13.7	9				
Do	do	do	1926	28336	do	Limestone		2.70	.1	6.8			10,540	13.0	5				
Do	do	do	1926	28337	do	do		2.74	.2	4.8			21,960	16.0	9				
Do	Douglas	Comm	1919	14119	Slag	Smelter		3.48	.3	5.5				9.0	7				
Do	Gleeson	Local	1925	27337	Stone	Limestone		2.67	.2					16.7	7				
Do	Naco	Comm	1936	42813	Gravel	ShS(Q)	1			12.5		C							
Coconino	Flagstaff	Prosp	1922	21826	Stone	Dolomite		2.47	3.5	12.1				15.7	6				
Do	do	do	1922	21827	do	Altered trachyandesite.		2.25	4.2	21.2				4.7	3				
Do	do	do	1925	26928	do	Basalt		2.83	1.2	4.6				17.3	11				
Do	Grand Canyon	do	1919	15296	do	Calcareous sandstone.		2.15	6.3	23.3				.0	2				
Do	do	do	1919	15297	do	Siliceous limestone		2.45	2.8	7.9				18.7	6				
Do	do	do	1919	15298	do	Chert		1.92	3.8	13.7									
Do	do	do	1919	15299	do	Dolomite		2.61	1.4	5.0				15.0	6				
Do	do	do	1925	26941	do	do		2.78	.6	6.9				14.7	3				
Do	do	do	1925	26942	do	Sandstone		2.20	4.9	11.4				2.7	4				

Do	do	do	1925	26943	do	Chert breccia		2.53	1.5	7.2				19.0	7			
Gila	Globe	Comm	1919	13977	Slag	Smelter		3.55	.6	3.2								
Do	do	do	1919	13978	do	do		3.54	.6	3.1								
Do	do	do	1919	14746	do	do		3.47	.8	6.8				15.0	9			
Do	do	do	1923	23464	Stone	Limestone		2.70	.1					15.0	5			
Do	Strawberry	Prosp	1922	22649	do	Calcareous sandstone.		2.26	6.0	14.3				9.0	5			
Do	do	do	1922	22688	do	Sandstone		2.34	4.5	6.4				11.3	9			
Do	do	do	1922	22689	do	Siliceous limestone.		2.38	4.2	7.2				11.2	8			
Greenlee	Clifton	Comm	1919	15190	Slag	Smelter		3.32	.2	4.5				18.0	27			
Do	do	Prosp	1925	26781	Stone	Quartzite		2.67	.2	3.6				19.3	16			
Maricopa	Phoenix	do	1910	4103	do	Altered andesite		2.60	1.2	2.4				17.6	23			
Do	do	do	1910	4408	do	Schist		3.00	.2	3.1				17.5	14			
Do	Tempe	Comm	1923	23802	do	Altered trachyte		2.66	1.2	4.0				16.3	15			
Navajo	Heber	Prosp	1924	25362	do	Sandstone		2.25	3.9	12.4				12.3	4			
Do	do	do	1924	25363	do	do		2.56	.6	3.5				18.7	20			
Do	do	do	1924	25364	do	Siliceous dolomite		2.35	3.5	7.2				10.0	4			
Do	do	do	1924	25365	do	do		2.31	3.5	8.8				13.7	4			
Do	do	do	1924	25366	do	do		2.21	5.8	11.9				12.3	4			
Do	do	do	1924	25367	do	do		2.37	4.0	8.1				14.7	5			
Do	Holbrook	do	1924	24720A	do	Quartzite		2.61	.5	3.0				18.7	12			
Do	do	do	1924	24720B	do	Ferruginous quartzite.		2.64	.1	2.9				17.7	12			
Do	do	do	1924	24721A	do	Quartzite		2.68	.1	3.2				18.7	13			
Do	do	do	1924	24721B	do	Sandstone		2.61	.3	3.2				18.7	13			
Pima	Tucson	Local	1917	11642	do	Siliceous limestone.		2.67	.3	5.4				15.5	5			
Do	do	Prosp	1923	24407	do	Siliceous dolomite		2.85	.2	4.4			32,790	16.0	10			
Do	do	do	1923	24408	do	do		2.83	.1	3.5			41,780	15.3	13			
Pinal	Superior	Local	1923	24978	Gravel	RG	2½			8.0		A						
Yavapai	Prescott	Prosp	1923	24194	Stone	Amphibolite		3.08	.1	2.5				17.7	18			
Do	do	do	1923	24195	do	Quartz		2.65	.0	6.3				19.3	5			
Do	do	do	1923	24210	do	Feldspathic sandstone.		2.71	.3	3.2				18.7	15			
Do	Puntenney	Comm	1925	28002	do	Dolomite		2.58	1.5	4.8				15.3	8			
Do	do	do	1925	28003	do	Limestone		2.55	1.4	5.2				15.3	6			

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Baxter	Cotter	Local	1920	17696	Stone	Argillaceous dolomite.		2.61	2.4	6.1				14.0	6			
Do	do	do	1921	17932	do	do		2.65	2.7					12.0	4			
Do	Henderson	do	1934	40221	Gravel	Chert	2			15.4		A						
Cleburne	Heber Springs	Prosp	1910	4754	Stone	Slate		2.70	.4	5.6				9.3	16			
Do	Libbie	Comm	1911	5680	do	Argillaceous sandstone.		2.70	.8	3.6				11.4	19			
Do	Red River	Prosp	1939	46429	do					4.5								
Do	do	do	1939	46430	do					4.2								
Conway	Morrilton	do	1920	16777	do	Sandstone		2.48	1.4	3.5				17.7	9			
Do	do	do	1920	17310	do	Feldspathic sandstone.		2.51	2.0	3.9				13.0	11			
Do	Springfield	do	1920	16383	do	do		2.64	.5	3.4								
Crawford	Alma	do	1915	8921	do	Sandstone		2.65	.5	2.4				18.3	10			
Do	Van Buren	do	1911	5403	do	Feldspathic sandstone.		2.60	.5	4.5				15.2	10			
Desha	Arkansas City	Comm	1921	19774	Gravel	Chert	2			5.8		A						
Faulkner	Beryl	Prosp	1921	20891	Stone	Sandstone		2.48	1.3					19.3	14			
Do	do	do	1922	21057	do	do		2.49	1.5	2.3				17.3	13			
Do	Conway	do	1908	2846	do	Ferruginous sandstone.		2.55	1.0	4.9				17.1	9			
Do	do	do	1917	12461	do	do		2.55	.1	2.6				17.3	25			
Do	do	do	1921	19082	do	Sandstone		2.43	2.1	4.7				18.3	9			
Do	do	do	1921	19118	do	do		2.59	1.0	3.1				17.3	13			
Do	do	do	1921	19119	do	do		2.46	2.1	6.0				13.3	9			
Do	do	do	1921	19443	do	Feldspathic sandstone.		2.50	1.6	4.3				13.7	9			
Do	do	do	1921	19752	do	Sandstone		2.51	1.6	4.0				16.7	11			
Do	do	do	1921	20012	do	do		2.47	1.9	4.3				17.3	9			
Do	do	do	1921	20168	do	do		2.56	.8	2.2				18.0	10			
Do	do	do	1921	20169	do	do		2.54	1.3	3.2				18.0	14			
Do	do	do	1921	20170	do	do		2.61	.5	2.2				19.0	14			
Do	do	do	1921	20333	do	do		2.61	.9	3.7				15.7	11			
Do	do	do	1921	20559	do	do		2.55	1.2	3.2				17.7	13			
Do	do	do	1925	26770	do	Feldspathic sandstone.		2.60	1.0	4.4				16.7	14			
Do	Damascus	do	1921	19116	do	Sandstone		2.59	.8	2.7				18.7	10			
Do	do	do	1925	26771	do	do		2.48	1.7	9.4				9.7	3			

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

ARKANSAS—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Faulkner	Mayflower	Prosp	1921	18418	Stone	Sandstone		2.57	0.8	2.8				17.3	19				
Do	do	do	1921	18419	do	do		2.54	1.2	2.9				17.3	15				
Do	Palarm	do	1922	21119	do	Feldspathic sandstone.		2.60	.9	2.7				17.3	11				
Do	Preston	do	1921	19081	do	Sandstone		2.59	.9	3.7				17.7	15				
Do	Vilonia	do	1922	21079	do	do		2.43	2.6	4.5				14.3	7				
Do	do	do	1922	21138	do	do		2.44	2.2	5.3				11.7	6				
Do	do	do	1922	21174	do	do		2.55	1.3	2.6				19.0	11				
Do	Wooster	do	1921	19117	do	do		2.47	1.6	3.2				15.3	17				
Do	do	do	1921	19966	do	do		2.41	2.1	5.3				13.3	8				
Do	do	do	1921	20352	do	do		2.50	1.4	3.7				18.3	13				
Fulton	Salem	do	1925	26629	Gravel	Chert	2			14.0		A							
Do	Union	Local	1925	26703	do	do	2½			18.7		A							
Garland	Hot Springs	Prosp	1901	438	Stone	do		2.60	.2	11.1									
Do	do	Local	1925	26374	Gravel	SSlShQ	2			25.6		A							
Do	do	Prosp	1933	40041	Stone	Novaculite		2.22	2.5	9.2				18.0	10				
Do	do	do	1934	40076	do	Sandstone		2.52	1.2	2.6				18.3	15				
Do	do	Local	1941	53964	do	Novaculite					31.4	B							
Do	do	do	1941	54025	do	do					39.8	A							
Do	do	do	1941	54105	do	Chert					33.2	A							
Do	do	do	1941	54170	do	do					31.0	A							
Do	do	do	1946	72445	Gravel	do					32.1	D							
Do	Hot Springs (Saline River).	do	1924	24683	do	do	3			30.6		A							
Hempstead	Hope	Prosp	1914	7629	Stone	Ferruginous sandstone.		2.95	.8	6.9				18.2	12				
Hot Spring	Butterfield (Ouachita River).	Local	1947	73001	Gravel	QzSQ(C)					23.1	C							
Do	Remmel Dam	Prosp	1934	40197	do	SGCRQz					30.1	A							
Howell	Willow Springs	do	1947	72781	Stone	Sandstone							11,900		4			38.0	1½-#4
Do	do	do	1947	72782	do	Dolomitic limestone.							21,500		5			2.0	1½-#4
Independence.	Penters Bluff	do	1919	14425	do	Crystalline limestone.		2.67	.4	10.4				8.3	3				
Do	do	do	1919	14883	do	Chert		2.52	1.3	10.8									
Do	do	do	1919	14885	do	Limestone		2.67	.4	5.4				15.3	7				
Do	do	do	1919	14886	do	do		2.68	.4	10.5				7.3	3				
Do	Pfeiffer	do	1917	11511	do	Marble		2.62	.6					14.0	5				
Izard	Melbourne	do	1924	25128	do	Argillaceous dolomite.		2.64	2.2	6.6									
Do	Sage	Local	1924	26339	Gravel	Chert	2			14.0		A							
Johnson	Lamar	Prosp	1916	9828	Stone	Feldspathic sandstone.		2.55	1.2					18.7	13				
Do	do	Comm	1919	14665	do	do		2.50	1.6	3.5									
Do	do	do	1919	14959	do	do								18.0	14				
Do	do	do	1920	15443	do	do		2.48	2.1	5.0				17.0	11				
Do	do	do	1920	16510	do	do		2.50	1.7	3.8					13				
Do	do	do	1920	17258	do	do		2.48	1.7	3.4				17.3	11				
Do	do	do	1921	19056	do	do		2.52	1.5	3.2				16.3	13				
Lafayette	Lewisville	do	1926	28356	Gravel	CSQ	2			21.2		A							
Do	do	do	1928	30205	do	CQ	2	2.58	.1	18.3		A							
Lawrence	Black Rock	do	1921	20819	Stone	Dolomite		2.50	3.8	5.9				10.7	7				
Do	Sloan	do	1921	17902	do	Limestone		2.74	.7	4.9				13.0	6				
Do	Williford	do	1921	17908	do	do		2.84	.5	3.7				14.7	16				
Little River.	Whitecliffs	Prosp	1918	13295	do	Argillaceous limestone.				13.9				.0					
Logan	Booneville	do	1928	30213	do	Sandstone		2.53	1.1	3.1				17.5	14				
Do	Paris	do	1907	2298	do	Feldspathic sandstone.		2.55	.8	2.4				18.9	10				
Miller	Texarkana	do	1905	1353	do	Sandstone		2.85	1.3	4.6				18.2	16				
Mississippi	Golden Lake (Mississippi River).	Comm	1925	27342	Gravel	CQ	2			8.0		A							
Do	Wilson	do	1921	20896	do	CQ	2			5.3		A							
Newton	Jasper (Buffalo River).	Local	1924	26160	do	SC	2½			19.9		A							

Perry	Hollis	Prosp	1929	31334	Stone	Sandstone		2.61	.6	2.3				19.3	16				
Do	do	do	1929	31343	do	do		2.59	.3	1.8				18.7	21				
Do	do	Local	1929	31661	do	do		2.57	.8	2.1				19.3	19				
Do	do	do	1929	31662	do	do		2.63	.4	1.8				19.3	20				
Phillips	Helena (Mississippi River).	Comm	1920	16361	Gravel	CQS	2			5.9		A							
Do	do	do	1920	16952	do	CQ	2			5.8		A							
Do	do	do	1921	19001	do	CQQz	2			5.3		A							
Pike	Glenwood	do	1920	17493	do	SC	2			8.4		A							
Polk	Freeman Springs.	Local	1950	82475	do	Sandstone		2.40	3.6		49.4	A							
Do	Rich Mountain	do	1930	33035	Stone	do		2.51	1.8	11.6				11.3	9				
Pope	Dover	Prosp	1925	26614	do	do		2.50	1.9	3.6				17.3	12			S	1½–1
Do	do	do	1925	26615	do	Feldspathic sandstone.		2.59	.8	4.0				18.7	6				
Do	do	do	1925	26617	do	do		2.53	1.4	4.8				18.7	10				
Do	do	do	1925	26630	do	Sandstone		2.55	.9					19.3	12				
Do	do	do	1925	26631	do	Feldspathic sandstone.		2.53	1.4	3.4				18.3	10				
Do	do	do	1925	26632	do	do		2.54	.8	2.8				18.7	15				
Do	do	do	1925	26748	do	Sandstone		2.49	1.5	4.0				18.7	10				
Do	do	do	1926	28183	do	do		2.58	.8	3.2									
Do	do	Local	1946	72037	do	do					35.8	A							
Do	do	do	1948	75732	do	do					25.7	A							
Do	Russellville	Prosp	1921	19632	do	Feldspathic sandstone.		2.57	.9	3.2				19.0	13				
Do	do	do	1925	26616	do	do		2.57	1.1	2.7				18.7	12			S	1½–1
Do	do	do	1925	26674	do	Sandstone		2.50	1.6	3.2				18.7	15			S	1½–1
Do	do	do	1925	26687	do	do		2.58	1.0	3.4				18.7	18				
Do	do	do	1925	26959	do	do		2.54	1.3	3.4									
Do	Scottsville	do	1950	79931	Gravel	SQ	3	2.52	1.8		36.0	E						6.5	1½–#4
Do	Treat	Local	1947	73168	Stone	Sandstone					25.7	A							
Do	do	do	1947	73169	do	do					46.9	A							
Do	do	do	1947	73170	do	do					27.9	A							
Do	do	do	1947	73171	do	do					29.5	A							
Do	do	do	1947	73172	do	do					34.4	A							
Do	do	do	1947	73173	do	do					25.1	A							
Do	do	Prosp	1948	75521	do	do					41.6	A							
Do	do	do	1948	75522	do	do					40.3	A							
Do	do	Local	1948	75732	do	do					25.7	A							
Do	do	do	1949	79273	do	do		2.51	2.0		22.5	A							
Do	do	do	1949	79274	do	do		2.52	2.0		23.9	A							
Do	do	do	1949	79275	do	do		2.55	1.8		22.2	A							
Pulaski	Levy	do	1923	22761	do	do		2.65	.4	1.3				19.3	21				
Do	do	do	1923	22762	do	do		2.55	1.5	2.1				18.0	14				
Do	Little Rock	Comm	1907	2158	do	Feldspathic sandstone.		2.80	.1	2.3				18.9	37				
Do	do	do	1918	12993	do	Quartzite		2.65	.2	3.3				19.3	26				
Do	do	do	1918	12994	do	do		2.64	.2	3.3				19.0	23				
Do	do	do	1919	14279	do	Syenite		2.50	.8	5.0				18.7	8				
Do	do	do	1921	14293	do	Porphyritic syenite		2.62	.1	3.7				18.5	12				
Do	do	do	1920	17201	do	Sandstone				2.2									
Do	do	do	1921	19664	do	Quartzite				1.7									
Do	do	do	1922	21053	do	Syenite				5.3									
Do	do	Prosp	1922	21140	do	Ferruginous sandstone.		2.60	1.2	2.4				17.7	23				
Do	do	do	1922	21141	do	do		2.58	1.2	2.8				16.3	14				
Do	do	do	1924	24924	do	Sandstone		2.60	.5	2.2				19.0	15				
Do	do	Comm	1924	25359	do	Leucite syenite		2.52	.6	6.2				18.7	7				
Do	do	do	1924	25360	do	Syenite		2.54	.5					18.0	18				
Do	do	do	1924	25361	do	Hornblende syenite.		2.63	.1					18.7	13				
Do	do	Prosp	1938	46147	do	do				3.7									
Do	do	Comm	1941	54887	do	Quartzite					15.9	C							
Do	Marche	do	1922	21815	do	Sandstone		2.51	1.3	2.7			27,950	16.3	7				
Do	Pinnacle	Prosp	1919	14280	do	do		2.52	1.1	6.4				16.3	10				
Saint Francis.	Crow Creek	Local	1921	17864	Gravel	Chert	2½			6.0		A							
Do	Forrest City	Comm	1930	33120	do	do	1½	2.53	1.6	4.8		A							
Saline	Benton	do	1924	25130	do	QLSl	2			22.4		A							
Do	do	do	1924	25336	do	QCSl	2			24.2		A							
Do	Benton (Saline River).	Local	1924	25499	do	SQSl	2½			27.6		A							
Do	do	do	1925	26635	do	QSC	3			25.6		A							
Searcey	Snowball (Calf Creek).	Prosp	1924	24676	do	SC	3½			19.8		A							
Do	do	Local	1924	26049	do	SC	2½			19.7		A							
Sebastian	Fort Smith	Prosp	1903	742	Stone	Sandstone		2.50	.9	4.0									
Do	do	do	1903	743	do	do		2.60	.8	3.7									
Do	do	do	1916	9838	do	do		2.40	3.2	6.5				15.3	6				
Do	do	Local	1921	20165	Gravel	CQS	2			9.0		A							

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

ARKANSAS—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Sebastian	Fort Smith	Comm	1928	30208	Stone	Sandstone		2.42	2.5	4.9				16.7	10			S	1½–1
Do	do	do	1929	31458	do	do		2.33	3.2	6.0				16.7	8			S	1½–1
Do	do	do	1929	31534	do	do		2.37	3.2	5.0				16.3	14			S	1½–1
Do	do	do	1929	31535	do	do		2.36	2.9	5.0				15.3	7			Q	1½–1
Do	do	do	1929	31536	do	do		2.34	3.1	4.5								S	1½–1
Sevier	Gillham	Prosp	1916	10486	do	Quartzite		2.62	.3	2.3				19.0	32				
Do	Horatio	Comm	1925	26908	Gravel	QSC	2½			12.4		A							
Sharp	Williford	Prosp	1920	16657	Stone	Dolomite		2.71	1.4	3.6									
Do	do	Comm	1921	19668	do	do				4.5									
Do	do	do	1921	19773	do	do				3.7									
Do	do	do	1922	21353	do	do				3.2									
Do	do	do	1925	26701	do	do				3.0								U	1½–1
Do	do	do	1928	30065	do	Argillaceous dolomite.		2.73	1.0							91	1–¼	S	1–¾
Van Buren	Bee Branch	Local	1926	28196	do	Slate		2.68	.4	3.8				15.3	13				
Washington	Fayetteville	Comm	1921	20923	do	Argillaceous limestone.		2.69	1.0	5.4				15.3	7				
Do	Goshen (Richland Creek).	Prosp	1920	15766	Gravel	Chert	3			25.6		A							
White	Bald Knob	Comm	1912	6331	Stone	Sandstone		2.55	1.3	2.2			19,860	17.9	18				
Yell	Danville	Prosp	1913	6954	do	Quartzite		2.65	3.2	2.7				19.0	22				
Do	Plainview	Local	1920	15466	do	Sandstone		2.45	2.6	4.7				15.3	6				

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Alameda	Dumbarton	Local	1915	9369	Stone	Ferruginous chert		2.95	0.1	15.9									
Do	do	Prosp	1915	9370	do	Serpentine		2.35	1.9	16.4				14.0					
Do	do	do	1915	9371	do	Chert conglomerate.		2.65	.0	7.1									
Do	Newark	Local	1915	8891	do	Serpentine		2.50	2.6	11.0				12.3	6				
Do	do	do	1915	8892	do	Chalcedonic quartz		2.65	.2	8.5									
Do	Oakland	do	1905	1227	do	Altered rhyolite		2.65	.2	1.7				18.7	33				
Do	do	Comm	1910	4372	do	Feldspathic sandstone.		2.70	.3	4.7				16.5	5				
Do	do	do	1910	4373	do	do		2.70	.3	3.6				18.6	21				
Do	do	do	1910	4374	do	do		2.70	.3	3.0				18.8	24				
Do	do	Prosp	1910	4375	do	Quartz breccia		2.60	1.1	10.5				19.4	9				
Do	do	Comm	1910	4376	do	Altered basalt		2.80	.8	5.3				16.8	15				
Do	do	do	1910	4377	do	Feldspathic sandstone.		2.70	.2	3.5				17.8	12				
Do	do	Prosp	1911	5150	do	Altered rhyolite		2.70	.3	2.7				17.9	14				
Do	do	Local	1911	5151	do	Feldspathic sandstone.		2.70	.3	2.2				18.7	14				
Do	do	Comm	1920	16930	do	Altered andesite				3.2									
Do	do	do	1920	16931	do	Feldspathic sandstone.				4.3									
Do	Radum	do	1942	60108	Gravel	RTr(Qz)	1	2.65	1.2		21.5	B							
Butte	Oroville	do	1941	55210	Stone	Hornblende schist		2.99	.2				51,270		20				
Do	do	do	1941	55211	do	do					16.8	A							
Do	do	do	1942	56563A	do	Syenite		3.01	.1				55,680		30				
Do	do	do	1942	56563B	do	do		2.87	.3				45,920		25				
Do	do	do	1942	56564A	do	Hornblendite		3.11	.1				51,100		15				
Do	do	do	1942	56564B	do	Granite		2.62	.6				29,820		9				
Do	do	do	1942	56564C	do	Amphibolite		3.07	.2				61,380		28				
Do	do	do	1942	56564D	do	Syenite		3.06	.1				64,560		25				
Do	do	do	1942	56565	do	Trap and schist					15.3	C							
Calaveras	Milton	Local	1907	2031	do	Rhyolite		2.70	.1	2.1				19.5	20				
Do	do	do	1907	2032	do	Altered basalt		2.70	.3	1.5				19.2	19				
Do	do	Prosp	1908	2636	do	Altered andesite		2.85	.1	1.5				18.8	44				
Do	Valley Springs	do	1907	2350	do	Quartzite		2.85	.2	3.4				19.5	15				
Do	do	do	1907	2351	do	Hornblende-chlorite schist.		2.85	.5	2.8				18.9	17				
Contra Costa.	Albany	Comm	1911	5148	do	Feldspathic sandstone.		2.70	.6	5.0				17.0	11				
Do	El Cerrito	do	1942	56609	do	do		2.71	.4				24,080		10				

Do	do	do	1942	56610	do	do					32.5	B								
Do	Richmond	do	1941	54972	do	do		2.73	.3		12.4	B	39,300		13					
Do	do	do	1941	55100	do	do					19.2	B								
Do	do	do	1942	56611	do	do		2.73	.1				39,450		19					
Do	do	do	1942	56612	do	do					18.5	B								
Do	do	do	1943	61808	do	do		2.70	.4		19.4	B								
Do	San Pablo	do	1911	5147	do	do		2.70	.3	2.6				18.2	16					
Fresno	Piedra	do	1942	56671	do	Peridotite					15.2	B								
Do	do	do	1942	56672	do	do					14.7	B								
Do	do	do	1942	56673	do	do		2.77	.2				27,350		7					
Do	Red Hill	Prosp	1908	2925	do	Epidosite		3.00	.1	2.1				17.6	11					
Imperial	Holtville	Comm	1942	60106	Gravel	RTr(G)	1	2.56	1.3		16.2	B								
Kern	Bakersfield	Prosp	1914	7605	Stone	Diorite		2.95	.0	3.7				19.3	36					
Los Angeles	Azusa	Comm	1941	55150	do	Gneissoid granite		2.71	.3		37.4	B	32,990		7					
Do	Claremont	Local	1908	2436	do	Granite		2.60	.4					18.1	4					
Do	El Monte	Comm	1941	55335	do	do		2.67	.3		27.1	B	41,440		10					
Do	do	do	1942	56687	do	Granite syenite					31.7	B								
Do	do	do	1942	56688	do	do		2.66	.3				38,420		23					
Do	do	do	1942	56689	do	Syenite							36,670		9					
Do	do	do	1943	61728	Gravel	GRSyGn(Q)	1	2.65	.8		28.1	B								
Do	Glendale	Prosp	1908	2437	Stone	Biotite gneiss		2.75	.1	3.2				18.7	11					
Do	do	do	1908	2438	do	Granite		2.65	.6	4.8				18.5	20					
Do	Hollywood	Comm	1907	2293	do	Diorite		2.75	.2	4.8				18.4	9					
Do	do	Local	1907	2294	do	Andesite		2.75	.3	2.7				18.7	17					
Do	do	Prosp	1908	2593	do	Granite breccia		2.60	1.2	24.6										
Do	Lancaster	do	1908	2597	do	Trachyte		2.85	.3	1.7				17.8	34					
Do	Lomita	Comm	1942	60104	Gravel	QzRQ(G)		2.53	1.6		35.6	B								
Do	Los Angeles	Prosp	1902	578	Stone	Granite		2.60	.6	14.8										
Do	do	do	1908	2433	do	Limestone		2.60	2.9	3.7				17.2	10					
Do	do	do	1908	2983	do	Altered andesite		2.50	.7	4.0				17.3	15					
Do	do	do	1909	3164	do	Basalt		2.70	1.0	4.0				18.6	18					
Do	do	do	1909	3165	do	Rhyolite		2.15	5.3	6.8				16.5	9					
Do	do	do	1909	3166	do	Biotite gneiss		2.75	.2	3.7				18.3	9					
Do	do	do	1909	3346	do	Andesite		2.60	.6	3.7				16.7	17					
Do	do	do	1909	3871	do	Basalt		2.65	.4	2.8				18.3	13					
Do	Pacoima	do	1908	2439	do	Andesite		2.75	.5	2.2				17.7	29					
Do	Roscoe	Comm	1941	55594	Gravel	GSyDi	3	2.64	.8		36.7	A								
Do	do	do	1943	61729	do	RGSy	1	2.63	.9		41.7	B								
Do	San Pedro	Prosp	1908	2594	Stone	Andesite		2.50	.1	4.8										
Do	do	do	1908	2595	do	do		2.20	4.8	8.1				12.9	9					
Do	do	do	1908	2596	do	Quartzite schist		2.65	.1	4.9										
Do	Spadra	do	1907	2289	do	Rhyolite		2.35	.9	5.6				18.0	10					
Do	do	Local	1907	2290	do	Andesite		2.85	.1	2.3				18.3	12					
Do	do	Prosp	1908	2946	do	Trachytic rhyolite		2.25	3.8	4.4				16.2	17					
Do	do	do	1908	2947	do	do		2.45	1.0	5.1				18.7	19					
Do	Van Nuys	do	1907	2291	do	Argillaceous limestone.		2.50	1.3	4.7				10.4	8					
Do	do	do	1907	2292	do	do		2.50	3.2	4.4				10.4	11					
Marin	Green Brae	Comm	1942	56607	do	Feldspathic sandstone.		2.69	.2		26.0	B	22,660		8					
Mariposa	Jasper	Prosp	1908	2657	do	Feldspathic quartzite.		2.80	.1	2.0				18.7	16					
Do	do	do	1908	2658	do	do		2.75	.2	2.4				18.7	8					
Do	Yosemite National Park (Merced River).	do	1925	27402	Gravel	GSy	2½	2.61	.6	28.9		A								
Do	Yosemite National Park.	Local	1925	27450	Stone	Diorite		2.85	.3	3.4				17.3	12					
Do	do	Prosp	1925	27451	do	Granodiorite		2.64	.5	7.5				18.7	6					
Do	do	do	1925	27452	do	Biotite granite		2.71	.3	5.6				16.7	4					
Do	do	do	1925	27458	do	do				3.8										
Do	do	Local	1925	27461	do	Diorite		2.91	.4	2.6				18.7	17					
Do	do	do	1925	27521	do	Granite				7.8										
Napa	Napa	Comm	1926	28212	do	Basalt		2.83	.3	2.3				18.0	22					
Do	do	do	1942	56603	do	do		2.83	.3				45,350		25					
Do	do	do	1942	56604	do	do					15.7	B								
Do	do	do	1943	61692	do	do		2.77	1.2		13.4	B								
Orange	Orange	do	1942	56690	Gravel	SyTrQz					16.7	B								
Do	do	do	1942	56691	Boulders	RS		2.65	.4				43,270		18					
Do	do	do	1942	60105	Gravel	RTr(BQ)	1	2.61	1.3		18.2	B								
Riverside	Corona	Local	1907	2075	Stone	Rhyolite		2.65	.4	2.2				18.2	20					
Do	do	do	1907	2076	do	Andesite		2.75	.6	3.5				17.7	16					
Do	do	Comm	1915	8643	do	Rhyolite		2.70	.2	1.8				19.7	24					
Do	do	do	1942	56692	do	do					16.2	A								
Do	do	do	1942	56693	do	do		2.69	.1				65,250		28					
Do	do	Prosp	1942	56695	do	Rhyolite porphyry		2.68	.2		18.7	A	48,150		16					
Do	Riverside	do	1907	2377	do	Diorite		3.00	.1	1.7				18.7	34					
Do	do	do	1909	3135	do	Hornblende granite.		2.60	.5	2.5				18.8	16					
Sacramento	Fair Oaks	Comm	1915	8300	do	Basalt		3.00	.1	1.7				19.5	37					

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

CALIFORNIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Sacramento	Fair Oaks	Comm	1942	56562	Gravel boulders.	Basalt-rhyolite					12.7	B							
Do	do	do	1942	60109	Gravel	do	1½	2.76	0.8		20.8	B							
Do	do	do	1943	61859	do	BQR	1½	2.78	.4		18.9	B							
Do	Folsom	do	1908	2420	Stone	Andesite		2.80	.2	1.4				19.3	36				
San Bernardino	Barstow	Prosp	1908	2434	do	Marble		2.70	.1	4.4				14.4	4				
Do	Colton	Comm	1907	2288	do	do		2.75	.1	5.8				14.5	3				
Do	Oro Grande	do	1943	61861	do	Quartzite		2.64	.2		24.1	B							
San Diego	Mission Valley	do	1942	56685	do	Rhyolite					19.6	B							
Do	do	do	1942	56686	do	do		2.79	.2				39,550		20				
Do	Murray Canyon.	do	1942	56694	Gravel	RG					19.5	B							
Do	Oceanside	Prosp	1942	56668	Stone	Quartz syenite		2.72	.1		17.3	A	47,580		24				
Do	do	Comm	1942	56669	do	Trachyte					20.2	B							
Do	do	do	1942	56670	do	do		2.55	1.2				25,330		14				
San Francisco	San Francisco	Prosp	1917	11527	do	Marble		2.83	.2					12.0	6				
San Luis Obispo	San Luis Obispo	do	1914	7426	do	Feldspathic sandstone.		2.65	1.6	4.7				15.3	9				
San Mateo	Rockaway	Comm	1908	3085	do	Limestone		2.70	.3	4.5									
Do	do	Local	1911	5152	do	Calcareous chert		2.65	.2	4.6				19.0	11				
Do	Visitacion	do	1910	4143	do	Feldspathic sandstone.		2.60	1.0	2.5				14.9	7				
Do	do	Prosp	1910	4144	do	do		2.60	1.0										
Santa Barbara	Lompoc	do	1907	2130	do	Chert								19.7	5				
Do	do	Local	1907	2133	do	do				10.9									
Do	Santa Barbara	Prosp	1906	1703	do	Feldspathic sandstone.		2.50	1.6	7.0				10.3	5				
Do	do	do	1907	2128	do	Limestone				3.3				15.9	12				
Do	Sudden	Comm	1907	2131	do	do				9.7									
Santa Clara	Coyote	do	1914	8098	do	Siliceous limestone		2.70	.8	2.3				16.7	8				
Do	Palo Alto	Local	1904	1025	do	Basalt		2.70	.7	3.1				18.6	16				
Do	do	do	1904	1026	do	Chert		2.65	.4	23.5									
Do	do	do	1907	2010	do	Trachyte		2.80	.4	3.2				17.7	10				
Do	San Jose	Prosp	1917	11373	do	Feldspathic quartzite.		2.75	.2	1.8				18.7	18				
Do	Saratoga	do	1904	1004	do	Feldspathic sandstone.		2.70	.2	4.9				17.1	19				
Santa Cruz	Watsonville	Comm	1942	56665	do	Granodiorite					28.1	B							
Do	do	do	1942	56666	do	do					29.6	B							
Do	do	do	1942	56667	do	do		2.97	.1				34,170		11				
Shasta	Kennett	Prosp	1919	14496	Slag	Smelter		3.54	.5	4.9				17.7	9				
Siskiyou	Montague	do	1906	1750	Stone	Andesite		2.40	2.5	6.8				16.3	10				
Solano	Benicia	Comm	1911	5149	do	Olivine basalt		2.75	.8	3.1				18.3	30				
Do	do	do	1911	5153	do	do		2.85	.7	2.0				18.3	21				
Do	Cordelia	Prosp	1905	1186	do	do		2.80	.5	2.3				18.8	30				
Do	do	Local	1905	1187	do	Diorite		3.00	.2	2.1									
Do	do	Comm	1908	2758	do	Olivine basalt		2.80	.2	1.7				18.9	31				
Do	do	do	1908	2759	do	do		2.75	1.0	3.2				18.5	19				
Sonoma	Healdsburg	Comm	1942	60107	Gravel	B(R)	1	2.74	1.4		18.1	B							
Do	Petaluma	Prosp	1911	5079	Stone	Andesite tuff		1.85	10.9	17.4				5.0	5				
Do	do	Comm	1913	6576	do	Basalt		2.90	.5	2.0				18.2	26				
Do	do	do	1942	56605	do	do		2.90	.2				47,660		21				
Do	do	do	1942	56606	do	do					16.8	B							
Do	do	do	1943	61860	do	do		2.85	.5		15.0	B							
Ventura	Camarillo	do	1906	1705	do	Andesite		2.30	3.6	6.1				7.9	7				
Do	do	do	1907	2132	do	do				6.1				13.4	9				
Do	Ventura	Prosp	1908	2540	do	Volcanic breccia		2.20	6.4	8.8				12.2	3				
Do	do	do	1908	2572	do	Limestone		2.70	.3	2.1				16.0	10				
Do	do	do	1908	2573	do	Feldspathic sandstone.		2.60	1.0	2.0				16.7	17				
Do	do	do	1908	2637	do	Andesite		2.75	.7	2.8				17.8	21				

Adams	Denver	Local	1920	15880	Gravel	Granite-quartz	2			11.9		A							
Do	do	do	1921	20399	do	GQGnC				15.4		A							
Do	do	do	1921	20485	do	GQQz	2½			19.0		A							
Boulder	Boulder	Comm	1909	3113	Stone	Sandstone		2.35	1.4	5.3					16.5	7			
Do	do	do	1909	3114	do	Augite andesite		2.80	.3	3.0					18.3	18			
Do	do	do	1909	3116	do	Altered andesite		2.50	1.8	2.6					18.3	20			
Do	do	Prosp	1919	13892	do	Basalt		2.79	.3	2.9					18.8	18			
Do	do	do	1920	15782	do	Sandstone		2.42	2.6	8.6			10,625		16.7	7			
Do	do	do	1920	15783	do	do		2.41	2.4	6.7			19,110		16.7	7			
Do	do	do	1920	15784	do	do		2.37	2.0	5.1			17,510		16.7	8			
Do	do	do	1950	82756	do	Biotite granite					33.0	A							
Do	Boulder (Boulder Creek).	do	1927	29461	Gravel					19.0		A							
Do	do	do	1927	29462	do					19.4		A							
Do	Crags	Comm	1909	3294	Stone	Altered granite		2.65	.2	2.4			30,180		18.8	17			
Do	Longmont	Local	1921	18684	do	Limestone		2.70	.3	4.6					13.3	6			
Do	Lyons	Prosp	1916	9821	do	Argillaceous limestone.		2.60	1.8	4.9					15.3	7			
Do	do	do	1916	9822	do	Sandstone		2.50	1.1	3.4					18.3	11			
Do	do	do	1916	9823	do	do		2.53	.7	2.9					16.0	14			
Do	Nederland	Comm	1945	67489	Gravel	Granite-gneiss	1½											4.6	1½–#4
Custer	Silver Cliff	Prosp	1907	2196	Stone	Rhyolite breccia		2.15	4.1	7.8									
Do	do	do	1908	2934	do	do		2.05	4.8	5.6					15.5	7			
Denver	Denver	Local	1911	4994	Slag	Smelter		3.45	.1	4.3									
Do	do	do	1916	11169	do	do		3.46	.3	7.6									
Do	do	do	1916	11170	do	do		3.48	.2	5.1									
Do	do	do	1916	11171	do	do		3.48	.4	4.6					17.3	15			
Do	do	Prosp	1919	14115	do	do		3.52	.2										
Do	do	do	1919	14998	do	do		3.48	.2	7.8									
Do	do	Local	1925	26658	do	do											136	2½–#4	
Do	do	do	1925	26659	do	do											130	2–#4	
Do	do	do	1925	26660	do	do		3.40	.4	4.6									
Do	do	do	1925	26661	do	do		3.44	.2	6.1									
Do	do	do	1925	26662	do	do		3.29	.5	7.2									
Do	do	do	1925	26663	do	do				9.4									
Do	do	do	1925	26666	do	do				5.7									
Do	do	do	1925	26667	do	do				6.0									
Do	do	do	1925	26668	do	do				7.1									
Do	do	do	1925	26669	do	do											113	1½–#4	
Do	do	do	1925	26670	do	do		3.34	.2	3.6									
Do	do	do	1925	26671	do	do											123	2½–#4	
El Paso	Colorado Springs	Prosp	1908	2458	Stone	Trachyte		2.15	3.1	3.2					19.1	20			
Fremont	Portland	do	1905	1372	do	Biotite granite		2.60	.3	8.2									
Do	do	do	1905	1374	do	Limestone		2.60	1.6	4.5									
Gunnison	Sapinero	Local	1945	67471	Gravel	BRFe(G)	1½											16.5	1½–#4
Hinsdale	Capitol City	Prosp	1901	399	Stone	Brecciated felsite		2.50	2.0	3.4									
Do	Lake City	do	1901	396	do	Rhyolite breccia		2.50	2.1	5.7									
Do	do	do	1901	407	do	Andesite		2.60	1.8	3.5									
Do	do	do	1901	408	do	Augite andesite		2.60	1.2	6.4									
Do	do	do	1901	409	do	Diorite		2.70	.6	3.2									
Do	Lake Shore	do	1901	398	do	Rhyolite tuff		2.80	2.4	8.1									
Do	do	do	1901	406	do	do		2.50	1.9	10.3									
Do	Sherman	do	1901	397	do	Granite		2.60	.3	8.7									
Jackson	Rand	Local	1945	67475	Gravel	Granite-gneiss	1½											12.3	1½–#4
Jefferson	Denver	Prosp	1916	11168	Stone	Augite andesite		2.72	.8	2.7					15.3	17			
Do	Golden	Local	1909	3293	do	Basalt		2.75	.8	2.2			29,380		15.9	15			
Do	do	Comm	1923	23831	do	Nepheline tephrite.		2.73							17.3	15			
Do	Leyden	Local	1923	23832	Gravel	Granite-diorite	1½	2.71	.4	13.4		A					103	1½–#4	
Larimer	Fort Collins	Prosp	1910	4724	Stone	Limestone		2.55	2.0	6.5									
Do	Loveland	do	1945	67473	Gravel	Granite-syenite	1½											1.2	1½–#4
Do	Rocky Mountain National Park.	do	1945	67495	do	Granite	1½											3.2	1½–#4
Mesa	Mesa	do	1945	67494	Stone	Basalt												1.9	1½–#4
Otero	La Junta	do	1906	1602	do	Limestone		2.45	4.0	7.3					3.0	6			
Ouray	Ouray	do	1947	73046	do	Quartzite		2.66	.2		27.0	A	43,400			10		.6	1½–#4
Do	do	do	1947	73048	do	Volcanic sandstone.		2.74	.3		12.7	A						1.0	1½–#4
Pueblo	Pueblo	do	1919	15016	Slag	Smelter		3.41	.2	5.5									
Do	do	do	1919	15017	do	do		3.57	.2	6.0									
Do	do	do	1919	15018	do	do		3.53	.2	5.6									
San Juan	Howardsville	do	1947	73044	Stone	Altered rhyolite		2.59	1.8		16.8	A	40,100			20		3.1	1½–#4
Do	Silverton	do	1947	73045	do	Granodiorite		2.73	.7		18.9	A	42,100			14		.9	1½–#4
Do	do	do	1947	73047	do	Fossiliferous limestone.		2.71	.2		27.0	A	30,000			5		1.1	1½–#4
Teller	Victor	Local	1926	28660	do	Rhyolite				2.6									
Weld	Saint Vrains	do	1945	67492	Gravel	Granite-gneiss	1½											3.0	1½–#4

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

CONNECTICUT

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Fairfield	Bridgeport	Local	1909	3177	Stone	Feldspathic quartzite.		2.65	0.2	2.2				18.5	12				
Do	do	Comm	1909	3178	do	Granite gneiss		2.65	.2	2.4				18.5	10				
Do	do	Local	1909	3223	do	Diabase		3.05	.1	3.3				18.3	30				
Do	do	do	1912	6111	do	Granite gneiss		2.65	.2	2.5				18.3	9				
Do	do	Prosp	1912	6112	do	Biotite gneiss		2.60	.6	3.0				18.0	11				
Do	Danbury	Comm	1908	2798	do	Marble		2.75	.2	5.7				15.2	6				
Do	do	Prosp	1909	3476	do	Biotite gneiss				5.3									
Do	do	do	1909	3477	do	Diabase		2.95	.2	1.1								U	1½–1
Do	do	Comm	1925	27558	do	Marble													
Hartford	Canton	Prosp	1907	2381	do	Gabbroitic diabase.		2.95	.6					18.0	13				
Do	Farmington	Comm	1944	66315	Gravel	GGnQz(Q)					37.8	A							
Do	Newington	do	1919	14965	Stone	Altered diabase		2.96	.1	3.0				18.0	20				
Do	do	do	1925	26829	do	Diabase		2.89	.1	2.4				18.7	17				
Do	Plainville	do	1909	4013	do	Basalt		2.95	.2	2.1				18.1	22				
Do	do	do	1916	9944	do	Diabase		2.95	.6	2.0				19.0	23				
Do	do	do	1925	26830	do	do		2.96	.1	3.2				18.7	26				
Do	do	do	1926	28619	do	Basalt		2.95	.1	2.4				18.0	20				
Do	do	do	1942	57604	do	Diabase		2.93	.8		9.8	B							
Do	do	do	1942	57605	do	do							48,600		19				
Do	Poquonnock	do	1939	48508	Gravel	GGnSc												4.2	2½–#4
Do	Rocky Hill	Prosp	1898	233	Stone	Diabase				2.4									
Do	do	Comm	1907	2250	do	Altered diabase		3.00	.3	1.7				18.2	24				
Do	do	do	1909	3320	do	do		2.95	.7	1.8				16.8	22				
Do	do	do	1917	12114	do	do		2.92	.2	2.7			33,220	17.3	21				
Do	Suffield	Prosp	1912	5977	do	do		3.00	.1	1.9				18.3	33				
Do	do	Comm	1922	21747	do	Dolomite				1.5									
Litchfield	Canaan	do	1948	74473	Gravel	QzSQGn		2.61	.6		37.0	A							
Do	East Canaan	do	1917	11916	Slag	Blast furnace		2.35	1.5	17.6									
Do	do	do	1921	18722	do	do		2.22	1.3	11.0									
Do	do	do	1922	21336	do	do		2.51	.7	11.4									
Do	do	do	1924	25267	do	do		2.50	1.1	13.6									
Do	New Milford	Prosp	1908	2873	Stone	Hornblende schist		3.00	.2	3.5				18.4	6				
Do	Sharon	do	1913	6605	do	Siliceous dolomite		2.85	.3	5.5				11.3	7				
Do	Torrington	do	1911	5707	do	Gneiss				2.8									
Do	do	Local	1912	5815	do	Granite gneiss		2.65	.2					18.3	11				
Do	do	Prosp	1913	6750	do	Amphibolite		3.15	.1	2.3				16.9	10				
Do	do	do	1913	6995	do	Hornblende schist		3.15	.1	3.0				16.5	8				
Do	Washington Depot.	do	1925	26882	do	Amphibolite		3.04	.2					18.7	15				
Middlesex	Cromwell	Local	1925	26625	do	Altered diabase		2.88	.9	3.8				17.3	9				
Do	Middlefield	Comm	1907	2241	do	Diabase		2.95	.6	1.7				16.5	8				
Do	do	do	1921	18710	do	do		2.94	.1	2.1				17.7	20				
Do	do	do	1926	28620	do	Diabase		3.00	.1	3.1				18.0	25				
Do	Middletown	do	1923	23045	do	Biotite gneiss		2.69	.4	2.7									
Do	do	do	1923	23056	do	do		2.69	.4	3.8				18.7	9				
Do	do	do	1923	24465	do	do		2.70	.3	4.2				19.3	9				
New Haven.	Ansonia	Local	1901	354	do	Basalt		3.00	.3	2.1									
Do	do	do	1905	1323	do	Biotite gneiss		2.70	.2	3.1				17.6	20				
Do	do	do	1905	1324	do	Diabase		3.05	.1	1.8				17.9	32				
Do	Branford	Prosp	1898	215	do	do				2.2									
Do	do	Local	1901	349	do	do		2.80	.4	3.5									
Do	do	do	1905	1204	do	Altered diabase		2.75	.6	2.4				17.6	15				
Do	do	Comm	1911	5002	do	do		2.80	.2	3.4				16.6	8				
Do	do	do	1925	26880	do	Diabase		2.96	.1	2.8				18.7	22				
Do	do	do	1942	55799	do	do		2.96	.2		12.6	B	53,000						
Do	do	do	1943	61654	do	do		2.94	.9		14.7	B							
Do	East Haven	Prosp	1916	11151	do	Altered basalt		2.72	.4	3.7				17.3	10				
Do	do	Comm	1921	19732	do	do		2.82	.1					16.7	10				
Do	Foxon	do	1948	74474	do	Diabase		2.77	1.6		15.6	A							
Do	Hamden	do	1922	21227	do	do		2.94	.1	2.1				17.7	14				
Do	do	Prosp	1924	24822	do	Field stone				3.4									
Do	Meriden	Comm	1895	11	do	Diabase		2.85		3.2									
Do	do	do	1896	71	do	do				2.6									

Do	do	do	1901	467	do	do	2.90	.4	2.4									
Do	do	do	1907	2249	do	Altered diabase	2.90	.2	1.8				17.3	17				
Do	do	do	1924	24893	do	do	2.97	.1	2.8				17.3	20				
Do	do	do	1930	33197	do	Diabase								20				
Do	Milford	Local	1921	18226	do	Hornblende schist	3.02	.2	4.0				16.7	11				
Do	Mount Carmel	Comm	1925	26881	do	Diabase	2.99	.1	2.6				18.7	21				
Do	North Branford	do	1914	8178	do	do	2.95	.7	2.1				17.5	19				
Do	do	do	1917	12018	do	do	2.97	.5	3.8				15.3	10				
Do	do	do	1917	12115	do	do	2.96	.2	4.1				16.0	12				
Do	do	do	1919	14970	do	Altered diabase	2.97	.1	2.7				17.3	22				
Do	do	do	1923	24443	do	Olivine basalt	3.00	.1	1.6			49,400	18.7	27			S	1½–1
Do	do	do	1925	27388	do	Diabase	2.72	.0	2.8									
Do	do	do	1926	28618	do	do	2.98	.0	2.6				18.0	23				
Do	do	do	1928	30275	do	do	2.98	.1	2.7				18.0	13				
Do	do	do	1928	30633	do	do	3.02	.0	1.8				18.7	35				
Do	do	do	1928	30634	do	do	3.02	.0	1.8				18.7	22				
Do	do	do	1928	30635	do	do	2.98	.1	3.8				15.3	15				
Do	do	do	1928	30636	do	Altered basalt	2.76	.1	3.6				16.7	15				
Do	do	do	1928	30637	do	Diabase	2.96	.4	2.6				18.0	14				
Do	do	do	1930	33247	do	do	2.98	.1	1.8					20				
Do	do	do	1930	33248	do	do	2.99	.1	1.8					22				
Do	do	do	1930	33249	do	do	2.98	.1	3.0					20				
Do	do	do	1930	33250	do	do	2.98	.1	1.6					24				
Do	do	do	1930	33251	do	do	2.95	.2	2.4									
Do	do	do	1930	33252	do	do	2.98	.1	2.0					19				
Do	do	do	1942	57606	do	do	2.93	.7		16.9	B							
Do	do	do	1942	57607	do	do						51,900		18				
Do	Reeds Gap	do	1917	12235	do	do	2.91	.3	2.8			10,820	17.3	11				
Do	Woodbridge	do	1921	19725	do	do	2.94	.2	2.9			30,480	17.7	14				
New London.	Ledyard	Prosp	1908	2795	do	Hornblende schist	2.95	.1	3.4				18.0	18				
Do	Waterford	Comm	1916	11067	do	Granite	2.60	.5				21,840	18.7	13				
Do	do	do	1916	11068	do	Biotite granite	2.59	.5				23,850	18.7	8				
Do	do	do	1916	11069	do	do	2.63	.4				22,170	18.7	14				
Do	do	do	1918	13843	do	Granite			3.3				18.7	11				
Do	do	do	1920	16558	do	do						33,200						
Tolland	Rockville	Prosp	1904	940	do	Gneiss	2.70	.2	2.2				17.7	10				
Do	do	do	1904	953	do	Biotite gneiss	2.60	.4	4.7				16.6					
Do	do	do	1904	1042	do	Diabase	3.00	.1	2.0									
Do	do	do	1904	1061	do	do	3.00	.1	1.9				18.7	43				
Do	do	do	1904	1104	do	Gneiss	3.05	.2	3.4				17.6	5				
Do	do	do	1914	8177	do	Hornblende schist	2.60	.4	5.2				19.0	7				
Windham	Oneco	do	1915	9791	do	Biotite granite						16,640	18.3	8				
Do	do	do	1916	11098	do	do	2.63	.3				23,290	18.7	6				
Do	do	do	1916	11099	do	Gneissoid granite	2.61	.4				20,200	18.7	6				
Do	do	do	1916	11148	do	do	2.62	.3	4.6			20,820	18.7	7				
Do	Plainfield	do	1897	206	do	Diabase			1.8									
Do	Thompson	Local	1937	44236	Gravel	GGnQS				30.6	A							
Do	Willimantic	Prosp	1906	1616	Stone	Biotite granite	2.65	.7					13.6	6				

DELAWARE

New Castle	Ashland	Prosp	1909	3490	Stone	Hornblende schist	3.00	0.1	4.3				17.2	9				
Do	do	do	1917	12511	do	Biotite gneiss	2.71	.8	7.0				17.3					
Do	Elsmere	do	1917	12555	do	do	2.69	.2	3.1				18.7	14				
Do	Elsmere Junction.	do	1919	13893	do	Plagioclase gneiss	2.70	.1	3.6				18.7	9				
Do	Faulkland	do	1918	12839	do	Hypersthene gneiss.	2.90	.0	4.0				18.0	14				
Do	do	do	1918	13838	do	Hornblende gneiss	2.90	.2	3.7				18.7	12				
Do	Green Bank	do	1903	858	do	Quartzite	3.00	.0	2.7				18.4	30				
Do	do	do	1903	862	do	do	2.70	.1	2.6									
Do	Hochessin	do	1909	3533	do	Biotite gneiss	2.75	.3	12.8				17.3	7				
Do	do	do	1919	14114	do	Hornblende gneiss	3.10	.1	3.1				17.2	11				
Do	Marshallton	do	1909	3534	do	do	3.05	.0	5.6				18.0	12				
Do	do	do	1909	3535	do	Hornblende schist	3.05	.1	5.2				17.8	11				
Do	Mill Creek Hundred.	do	1907	2012	do	Biotite schist	2.70	.5	6.6									
Do	do	do	1915	8736	do	Biotite gneiss	2.80	.1	4.5				18.2	7				
Do	Mount Cuba	do	1917	12513	do	Hornblende gneiss	2.90	.5	4.8									
Do	Newark	do	1912	5875	do	Hornblende schist	3.00	.2	2.6				17.7	11				
Do	do	do	1915	8919	do	Biotite gneiss	2.75	.3	5.0				15.0	5				
Do	Stoney Battery	do	1919	14025	do	Hornblende schist	3.07	.1	3.6				17.7	8				
Do	Wilmington	Comm	1903	864	do	Pyroxene quartzite.	3.05	.1	2.2									
Do	do	do	1905	1363	do	Amphibolite	2.75	.1	1.0				18.6	18				
Do	do	do	1905	1364	do	Pyroxene quartzite.	2.90	.1	2.1				18.5	24				

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

DELAWARE—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
New Castle	Wilmington	Prosp	1909	3452	Stone	Serpentine		2.35	3.8	15.1				0.0	3				
Do	do	do	1909	3998	do	Hypersthene gabbro.		3.00	.1	3.7				18.0	9				
Do	do	do	1910	4615	do	Biotite schist		2.80	.2	5.4				17.2	11				
Do	do	do	1910	4921	do	Biotite gneiss		2.80	.2	4.4				17.0	7				
Do	do	do	1911	5711	do	Feldspathic quartzite.		2.70	.2	2.5				18.7	21				
Do	do	do	1911	5712	do	Dolomitic marble		2.85	.2	4.2				14.3	6				
Do	do	do	1911	5713	do	Biotite gneiss		2.75	.1	4.8				18.0	8				
Do	do	do	1917	11722	do	Feldspathic quartzite.							21,060	18.6	10				
Do	do	Comm	1919	15367	do	Pyroxene quartzite.		2.81	.4	3.3				18.7	12				
Do	do	do	1919	15401	do	do		2.84	.1	3.3				18.7	13				
Do	do	do	1931	34068	do	Feldspathic quartzite.		2.72	.3										
Do	do	do	1934	40060	do	Gabbro		2.86	.1	3.2				19.3	13				
Do	do	do	1934	40079	do	Diabase					21.6	A							
Do	do	do	1938	46049	do	Amphibolite		2.83	.2		22.8	A							
Do	do	do	1938	46054	do	Quartzite		2.68	.2		25.6	A							
Do	do	do	1938	46339	do	Pyroxene quartzite.					20.2	A							
Do	do	do	1939	46440	do						22.2	B							
Do	do	do	1944	64760	do	Granite					39.2	A							
Do	do	do	1944	64761	do	Biotite schist					30.7	A							
Do	do	do	1944	64762	do	do					33.8	A							
Do	do	do	1944	64763	do	Granite					31.3	A							
Do	do	do	1944	64764	do	Biotite gneiss					30.8	A							
Do	Wooddale	Local	1903	863	do	Hornblende schist.		3.15	.1	3.0									
Do	do	do	1903	865	do	Granite		2.65	.1	3.4									
Do	do	Comm	1907	2029	do	Biotite schist		2.80	.8	3.3									
Do	do	do	1908	2515	do	Biotite gneiss		2.80	.1	3.9									
Do	do	do	1908	2574	do	Hornblende schist.		3.15	.1	2.8				17.4	19				
Do	do	do	1909	4032	do	Biotite granite		2.70	.2	5.1				18.3	8				
Do	do	do	1909	4033	do	Biotite schist		2.80	.1	4.5				17.8	10				
Do	Yorklyn	Local	1917	12512	do	Biotite gneiss		2.73	.4	5.2				10.3					
Do	do	Prosp	1918	13033	do	Hornblende gneiss		2.78	.1	3.2				18.3	10				
Sussex	Seaford	do	1911	5444	do	Hornblende schist								16.8	23				

DISTRICT OF COLUMBIA

Washington	Prosp	1906	1625	Stone	Mica schist		2.70	0.6	5.8				6.8	6				
do	do	1906	1648	do	Quartzite		2.65	.2	3.6									
do	do	1906	1864	do	Biotite gneiss				5.3				17.5	13				
do	do	1909	3462	do	Mica schist		2.80	.1	4.5				17.0	8				
do	do	1910	4668	do	Biotite gneiss		2.70	.2	7.9				16.3	5				
do	do	1912	6437	do	Mica gneiss								17.7	10				
do	do	1914	8158	do	Granite gneiss		2.80	.2	3.0				18.8	5				
do	do	1921	19620	do	Mica gneiss		2.78	.2	4.2				17.3	8				
do	do	1921	20320	do	do		2.82	.2	6.0				17.7	7				
do	do	1924	26072	do	Mica schist							13,910						
do	do	1929	31631	do	Sericite schist		2.79	.2	5.2			18,400	17.3	9				
do	do	1939	46733	do	Biotite gneiss		2.79	.4		33.0	A	14,880					S	1½–1
do	do	1940	49732	do	Granite					26.9	A						S	1½–1
Washington (Potomac River).	Comm	1923	23801	Gravel	QScSGn	2½			8.7		A								
do	do	1923	23821	do	QSQzCGn	2½			6.8		A								
do	do	1926	28153	do	QGGnSc	1½			8.9		B								
do	do	1926	28349	do	QzCQ	2½			9.9		A								
do	do	1927	29364	do	QSG	2			9.9		A								
do	do	1928	30279	do	QCS	2			9.0		A								
do	do	1929	32035	do		2½			9.7		A								
do	do	1929	32041	do		2½	2.60	.9	8.8		A								

| | | |

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

FLORIDA

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Alachua	Gainesville	Prosp	1904	1129	Stone	Chert				13.9				14.9	2				
Brevard	Titusville	Local	1916	10192	do	Shell limestone		2.48	2.6	7.5				17.3	6				
Broward	Fort Lauderdale	Prosp	1916	10776	do	Siliceous limestone								14.0					
Charlotte	Punta Gorda	do	1921	18814	do	Limestone								9.7	6				
Citrus	Crystal River	Comm	1922	21892	do	do		2.34	3.1	18.5				18.7	4			Q	1½–1
Do	do	do	1924	24667	do	do		2.33	3.0	10.8									
Do	Floral City	Prosp	1905	1169	do	Siliceous limestone		2.45	4.5	17.6									
Do	do	do	1918	13788	do	Chert		1.99	8.6	17.9									
Dade	Miami	Comm	1932	34680	do	Limestone		2.45		10.4									
Do	do	do	1934	40127	do	do					28.8	A						S	1½–1
Do	Naranja	do	1931	34057	do	do													
Do	do	do	1932	34679	do	do		2.06		33.1									
Do	Ojus	do	1921	19248	do	do				21.0									
Do	do	do	1921	19249	do	do				16.1									
Do	do	do	1921	20060	do	do				17.8									
Do	do	do	1932	34681	do	do		2.09		33.6									
Do	do	do	1934	40128	do	do					39.9	A							
Gadsden	Chattahoochee (Flint River).	do	1923	23128	Gravel	Quartz	1									106	1–¼		
Do	Chattahoochee (Apalachicola River).	do	1932	34692	do	do	¾			15.6		D							
Do	do	do	1934	40662	do	Quartz-chert				12.2		C							
Do	do	do	1934	40662	do	do					53.2	B							
Gilchrist	Bell	Local	1950	80192	Stone	Limestone		1.74	17.8		85.1	A							
Hernando	Brooksville	Comm	1924	24606	do	do		2.52	1.1	8.1				12.0	4				
Do	do	do	1924	24607	do	do										88	2–¼		
Do	do	do	1924	26282	do	do								15.3	6				
Do	do	do	1926	28648	do	do				11.4					4			S	1½–1
Do	do	do	1926	28649	do	do				8.8					7			S	1½–1
Do	do	do	1927	29527	do	Dolomitic limestone.		2.63	.8	4.7				12.0	6				
Do	do	do	1927	29691	do	Limestone		2.48	2.9	7.0								U	1½–1
Do	do	do	1928	30242	do	do		2.52	.9	8.8								S	1½–1
Do	do	do	1932	34685	do	do		2.52		6.7									
Do	do	do	1934	40105	do	do					43.5	A							
Do	do	do	1934	40941	do	do					40.2	A							
Do	Conrock	do	1925	26619	do	do		2.57	.9	7.0				11.3	4			S	1½–1
Do	do	do	1925	26805	do	do		2.65	.5	6.2				16.0	6			S	1½–1
Do	do	do	1925	29433	do	do		2.49	1.8	8.3								S	1½–1
Do	do	do	1925	29471	do	do		2.50	1.8	8.2									
Hillsborough.	Tampa	Prosp	1902	702	do	Dolomite		2.60	3.0	18.6									
Do	do	do	1913	6963	do	Limestone		2.50	.1	9.4				5.6	3				
Lee	Fort Myers	do	1912	5974	do	Shell limestone		2.45	2.1	13.1				12.3	6				
Do	do	do	1921	18809	do	do								16.7					
Do	do	do	1921	18810	do	Siliceous limestone								14.7					
Do	do	do	1921	18811	do	do								14.0					
Do	do	do	1921	18812	do	Shell marl								14.0					
Do	do	do	1921	18813	do	Shell limestone								14.0					
Do	do	do	1921	18816	do	Argillaceous limestone.								9.3					
Levy	Montbrook	Comm	1915	9739	do	Chert		2.50	1.3	3.2									
Do	do	do	1915	9740	do	do		2.50	1.8	3.5									
Do	do	do	1918	13568	do	do		2.37	2.9	15.6				17.3	16				
Do	Morrison	do	1926	28321	do	Limestone								14.7	22				
Do	Raleigh	Prosp	1908	3018	do	Chert		2.45	1.1	7.1									
Do	Williston	Comm	1934	40099	do	do					19.9	B							
Manatee	Bradenton	do	1926	28443	do	Argillaceous dolomite.		2.41	4.1	7.2				10.7	4				
Marion	Kendrick	do	1926	28642	do	Limestone				33.0					3			U	1½–1
Do	do	do	1926	28643	do	do				40.6					2			Q	1½–1
Do	do	do	1926	28644	do	do				43.8					3			U	1½–1
Do	do	do	1926	28645	do	do				41.6					3			Q	1½–1
Do	Ocala	Local	1915	8387	do	Chert		2.30	.2	10.9				18.8	13				
Do	Standard	Comm	1926	28646	do	do				4.0								S	1½–1

Do	do	do	1926	28647	do	do				5.0					19			S	1½–1
Palm Beach	Boynton	Prosp	1916	10430	do	Shell limestone				37.2									
Do	Delray Beach	Local	1916	10411	do	do				50.9									
Do	Jupiter	Prosp	1916	10431	do	Siliceous limestone				12.5				14.7	5				
Pasco	Zephyrhills	do	1929	31284	do	do		2.50	1.7	4.8				18.7	29				
Suwannee	Live Oak	do	1913	7218	do	Limestone		2.60	.6					12.1	3				
Do	do	Local	1921	18149	do	do		2.33	3.2	15.6				.7	4				
Washington	Chipley	Prosp	1918	13301	do	do		2.52	1.5	12.3				14.4	5				

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Bartow	Cartersville	Prosp	1916	10398	Stone	Quartz schist		2.55	0.4	5.0				19.3	11				
Do	do	do	1916	10399	do	Sandstone		2.32	5.8	22.0									
Do	do	Comm	1942	55792	do	Dolomite		2.86	.1		20.2	B	40,600						
Do	Cass Station	Prosp	1916	10400	do	Sandstone		2.43	1.9					18.7	12				
Do	Ladds	Comm	1901	417	do	Dolomite		2.90	.4	8.2									
Do	do	do	1915	8692	do	do		2.85	.1					17.5	14				
Do	do	do	1918	12933	do	do		2.79	.6	3.9				16.0	8				
Do	do	do	1918	12956	do	do		2.81	.2	3.3				17.7	12				
Do	do	do	1918	12957	do	do		2.78	.2	3.9				18.0	6				
Do	do	do	1922	22503	do	do				3.2									
Do	do	do	1934	40059	do	do					27.2	A							
Do	do	do	1934	40084	do	do					25.2	B							
Do	White	do	1949	77049	do	Limestone		2.84	.3		19.9	A							
Do	do	do	1949	77773	do	Dolomite		2.84	.3		17.7	A							
Bibb	Holton	do	1914	8118	do	Biotite gneiss		2.70	.2	5.1				18.0	4				
Do	do	do	1915	9338A	do	do								16.2	4				
Do	do	do	1915	9338B	do	do		2.65	1.2	5.7				19.3	4				
Do	Macon	do	1918	13845	do	Granite gneiss		2.70	.7	5.9				18.0	9				
Carroll	Bowdon	Prosp	1916	10657	do	Amphibolite		3.01	.7	19.0				10.5	4				
Do	Carrollton	Comm	1916	10645	do	Biotite gneiss		2.79	.2	4.7				17.7	7				
Do	do	do	1916	10646	do	Granite gneiss		2.64	.4	4.5				18.7	5				
Do	do	Prosp	1916	10647	do	do		2.72	.3	4.6				18.5	6				
Do	do	do	1916	10648	do	do		2.71	.3	4.8				18.7	4				
Do	do	do	1916	10649	do	Biotite schist		2.70	.3	5.7				18.9	8				
Do	do	do	1916	10654	do	Biotite gneiss		2.65	.4					18.0	10				
Do	Mabry	do	1916	10651	do	Epidote hornblende schist.		3.07	.6	5.5				17.7	9				
Do	Roopville	do	1916	10653	do	Mica schist		2.69	.4					16.7	5				
Do	Temple	do	1916	10655	do	Biotite gneiss		2.71	.3	7.7				17.0	5				
Catoosa	Chickamauga	do	1947	73005	do	Limestone		2.68	.6		38.4	A						1.6	1½–#4
Do	Chickamauga Park.	Local	1901	424	do	do		2.70	.1	4.9									
Do	do	do	1934	40103	do	Argillaceous limestone.		2.71	.3	5.5					5			Q	1½–1
Do	Graysville	Prosp	1915	8721	do	Siliceous limestone		2.70	.2	5.5				14.7	7				
Do	Ringgold	Local	1934	40748	do	Sandstone		2.79	.2	3.4					8				
Do	do	do	1935	40803	do	Dolomite		2.77	1.1	3.5					10			S	1½–1
Do	do	do	1935	40859	do	Argillaceous limestone.		2.69	.5	4.4					7			S	1½–1
Do	do	do	1935	40860	do	Limestone		2.70	.2	4.8					5			S	1½–1
Do	do	Prosp	1935	42097	do	Chert				13.8									
Do	do	Local	1935	42437	do	Argillaceous limestone.				5.0					5			S	1½–1
Chattooga	Shackelton	Prosp	1915	8708	do	Limestone		2.70	.2	4.5				15.7	9				
Cherokee	Ball Ground	Comm	1915	9329	do	Marble		2.70	.2	7.7				11.2	2				
Do	do	do	1917	11512	do	do		2.71	.2	12.4				8.0	3				
Do	Canton	Prosp	1902	583	do	Eclogite		3.66	.1	2.9									
Do	Hollysprings	Comm	1917	11529	do	Serpentine marble		2.85	.2				21,850	12.6	6				
Clarke	Athens	Local	1916	10417	do	Biotite granite		2.64	.4	6.4				18.7	6				
Do	do	do	1916	10418	do	Granite gneiss		2.70	.4	7.5				17.7	6				
Do	do	do	1916	10420	do	Biotite granite		2.68	.3	5.9				18.7	4				
Do	do	Prosp	1916	10421	do	Biotite gneiss		2.68	.4					18.7	6				
Do	do	do	1916	10422	do	Biotite granite		2.61	.9					15.4	4				
Do	do	do	1916	10423	do	do		2.61	.4	4.4				17.8	9				
Cobb	Acworth	do	1916	10387	do	Biotite gneiss		2.81	.4	8.6				16.7	5				
Do	do	do	1916	10388	do	do		2.78	.3	10.1				16.7	5				
Do	Austell	Local	1916	10389	do	Granite gneiss		2.61	.3	7.4			12,890	18.7	5				
Do	Blackwells	do	1916	10393	do	Hornblende gneiss		2.95	.2	4.9			17,350	17.3	7				
Do	Gilmore	do	1916	10378	do	Biotite gneiss		2.65	.2	5.1				18.6	8				
Do	Kennesaw	Prosp	1916	10395	do	Amphibolite		3.06	.3	5.3				15.3	5				
Do	Lost Mountain	do	1916	10380	do	Hornblende gneiss		3.02	.5					13.3	4				
Do	Marietta	Local	1916	10377	do	Biotite gneiss		2.72	.4	6.5				17.3	6				
Do	do	Prosp	1916	10381	do	Gneiss		2.68	.4				18,500	18.7	6				
Do	do	do	1916	10382	do	Biotite gneiss		2.71	.3	5.6			14,000	17.3	6				
Do	do	do	1916	10394	do	Hornblende gneiss		2.89	.6					18.0	7				
Do	Smyrna	do	1916	10379	do	Magnetic quartzite.		2.76	.5					18.0	7				

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Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

GEORGIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Columbia	Appling	Prosp	1928	30273	Stone	Biotite granite		2.65	0.5	5.8									
Coweta	Newnan	do	1901	415	do	Diabase		3.10	.1	2.3									
Do	do	do	1915	9580	do	do		3.05	.2	2.4				18.7	28				
Do	do	do	1915	9581	do	do		3.05	.2	2.2				19.3	37				
DeKalb	Atlanta	Local	1915	9140	do	Hornblende gneiss		2.80	.5	5.1				16.8	6				
Do	Decatur	Prosp	1917	11204	do	Biotite gneiss		2.59	.4	3.8				18.0	12				
Do	do	Local	1917	11205	do	Granite		2.59	.7	7.3				18.0	6				
Do	do	Prosp	1917	11206	do	Biotite gneiss		2.69	.4	5.3				17.3	9				
Do	Lithonia	Comm	1901	421	do	Granite		2.70	.1	4.8									
Do	do	do	1915	9325	do	do		2.65	.1	4.6				18.5	5				
Do	do	do	1915	9326	do	do		2.65	.2	5.1				18.3	3				
Do	do	do	1915	9327	do	do		2.65	.2	4.5				18.8	4				
Do	do	do	1917	11940	do	do		2.61	.3	4.6				17.9	6				
Do	do	do	1917	11941	do	do		2.64	.4	3.2			21,280	18.0	12				
Do	do	do	1917	11942	do	do		2.62	.3	4.7			15,325	17.8	6				
Do	do	do	1917	11943	do	do		2.61	.4	4.0			17,830	18.2	7				
Do	do	do	1918	13502	do	do									8				
Do	do	do	1918	13533	do	do		2.63	.3	3.5					9				
Do	do	do	1918	13851	do	do				4.4				18.7	7				
Do	do	do	1921	19344	do	do		2.62	.3	5.6			27,250	17.3	9				
Do	do	do	1921	19940	do	do		2.62	.4	6.0			17,700	17.3	5				
Do	do	do	1921	19941	do	Biotite granite		2.61	.4	5.6			25,000	18.0	6				
Do	do	do	1921	19942	do	Muscovite granite		2.62	.3	5.6			24,860	17.7	7				
Do	do	do	1921	20001	do	Granite		2.62	.3	4.4			26,630	18.7	7				
Do	do	do	1921	20095	do	do		2.61	.3	5.5			20,620	17.7	7				
Do	do	do	1921	20121	do	do		2.60	.5	4.2			28,100	18.3	8				
Do	do	do	1921	20122	do	do		2.63	.3	4.7			23,080	18.3	5				
Do	do	do	1921	20151	do	do		2.62	.3	4.4			24,300	19.0	6				
Do	do	do	1923	23041	do	do		2.63	.3	4.1			28,260	18.7	7				
Do	do	do	1923	23774	do	do		2.66	.3				25,050	18.7	7				
Do	do	do	1923	23775	do	do		2.65	.2	4.7			23,220	18.3	7				
Do	do	do	1923	23855	do	do		2.64	.3					18.0	8				
Do	do	do	1923	23856	do	do		2.63	.4					18.3	6				
Do	do	do	1923	23857	do	do		2.64	.3					18.7	7				
Do	do	do	1923	23858	do	do		2.63	.4					18.7	7				
Do	do	do	1923	24380	do	do		2.62	.4	4.9			24,380	18.3	6				
Do	do	do	1923	24405	do	do		2.65	.2	4.7			24,940	18.0	7				
Do	do	do	1923	24406	do	do		2.64	.2				23,820	18.3	7				
Do	do	do	1924	25096	do	do		2.62	.3	5.4			30,540	18.7	7				
Do	do	do	1924	25097	do	do		2.63	.3	3.6			26,140	17.3	6				
Do	do	do	1925	27587	do	do		2.62	.3	4.2			30,290	18.3	9				
Do	do	do	1925	27588	do	Biotite granite		2.63	.2	4.5			27,300	18.3	9				
Do	do	do	1925	27595	do	Granite		2.62	.2	4.0			28,350	18.7	9				
Do	do	do	1928	30640	do	do				4.8				18.7	8				
Do	do	do	1928	30641	do	do				3.8				18.7	7				
Do	do	do	1929	32122	do	do		2.64	.4	3.8				17.7	9				
Do	do	do	1929	32123	do	do		2.64	.4	3.8				17.3	9				
Do	do	do	1929	32124	do	do		2.62	.4	3.8				18.3	8				
Do	do	do	1929	32125	do	do		2.63	.4	3.9				18.0	8				
Do	do	do	1930	33070	do	Biotite granite		2.61	.4	4.7				18.3	9				
Do	do	do	1930	33071	do	do		2.64	.4	7.4				18.0	6				
Do	do	do	1930	33074	do	do		2.63	.4	4.2				18.7	9				
Do	do	do	1930	33213	do	do				5.2				18.7	9				
Do	do	do	1930	33287	do	Granite							24,270						
Do	do	do	1932	34636	do	Gneissoid granite									7				
Do	do	do	1934	40056	do	Biotite granite					65.2	A							
Do	do	do	1943	61773	do	Granite		2.63	.3		59.5	B							
Do	Pine Mountain	do	1940	49300	do	do				4.3									
Do	Stone Mountain.	do	1901	423	do	do		2.60	.1	5.3									
Do	do	do	1915	9579	do	Muscovite granite		2.65	.2	4.4				18.5	6				
Do	do	do	1917	12078	do	Granite		2.63	.4	4.5			11,220	17.3	7				
Do	do	do	1925	27586	do	Muscovite granite		2.63	.3	4.2			24,370	18.7	9				
Do	do	do	1932	34704	do	do				4.8	67.4	A							
Dougherty	Albany	do	1948	75453	do	Fossiliferous limestone.					41.1	B							
Elbert	Elberton	Prosp	1901	416	do	Granite		2.70	.1	3.0									

Do	do	do	1920	17641	do	Biotite granite		2.64	.2	3.6			28,360	18.7	12			
Do	do	Comm	1921	19521	do	do		2.64	.0	4.1			27,940	18.7	9			
Do	do	do	1923	22751	do	do		2.63	.3	3.0			27,160	18.7	11			
Do	do	do	1942	55929	do	Granite					34.2	B						
Do	do	do	1942	55930	do	do		2.63	.5				31,900		9			
Do	Oglesby	Prosp	1914	7941	do	Biotite granite		2.65	.3				26,400	18.4	9			
Do	do	Local	1923	23474	do	do		2.64	.3	2.2				18.7	10			
Do	do	do	1923	23483	do	do		2.65	.2	2.7			30,300	18.7	11			
Floyd	Armuchee	do	1916	10221	do	Crystalline limestone.		2.69	.2	5.5				15.0	6			
Do	do	do	1916	10222	do	Oolitic limestone		2.69	.1	4.2				16.0	8			
Do	do	do	1916	10223	do	Limestone		2.69	.7	3.8				16.7	8			
Do	do	do	1916	10224	do	Argillaceous limestone.		2.68	.4	4.0				17.3	16			
Do	Berry Gap	Prosp	1916	10199	do	Sandstone		2.62	.9					17.7	29			
Do	Huffaker Station.	do	1916	10198	do	Limestone		2.72	.1	3.6				16.0	6			
Do	Pinson	Local	1916	10203	do	do		2.71	.1	4.9				15.3	5			
Do	Robinson	Prosp	1916	10197	do	Calcareous shale		2.61	1.3					10.7	8			
Do	Rome	do	1915	8691	do	Limestone		2.70	.1	6.1				15.5	4			
Do	do	Local	1916	10200	do	Argillaceous limestone.		2.69	.1	5.1				15.7	8			
Do	do	do	1916	10211	do	do		2.68	.6	5.6				14.7	13			
Do	do	Comm	1942	55793	do	do		2.71	.4		13.6	B	43,200					
Do	Shannon	Prosp	1916	10202	do	Limestone		2.73	.3	5.1				15.7	4			
Fulton	Atlanta	do	1901	422	do	Hornblende gneiss		3.00	.5	3.9								
Do	do	Local	1913	7020	do	Sericite schist		2.70	.1	4.0				17.8	10			
Do	do	Comm	1915	9137	do	Granite		2.65	.2	4.1				18.3	6			
Do	do	do	1915	9138	do	Granite gneiss		2.75	.2	2.8				18.2	7			
Do	do	Local	1915	9139	do	do		2.65	.2	3.2				18.3	10			
Do	do	do	1915	9141	do	do		2.65	.6	4.3				18.3	5			
Do	do	do	1915	9142	do	Biotite hornblende gneiss.		2.75	.3	4.1				19.0	7			
Do	do	do	1915	9143	do	Biotite granite		2.75	.2	5.1				17.7	6			
Do	do	do	1915	9144	do	Granite		2.65	.3	4.8				18.3	7			
Do	do	do	1915	9145	do	Biotite gneiss		2.75	.3	4.3				18.5	9			
Do	do	do	1915	9147	do	Biotite granite		2.70	.2	7.7				18.5	7			
Do	do	do	1915	9148	do	Biotite gneiss		2.65	.4	11.8								
Do	do	do	1915	9149	do	Biotite granite		2.70	.2	8.6				17.0	4			
Do	do	do	1915	9150	do	do		2.65	.3	7.4				14.6	5			
Do	do	do	1915	9151	do	Biotite gneiss		2.75	.3	5.6				18.5	6			
Do	do	do	1915	9152	do	do		2.75	.3	3.2				16.7	6			
Do	do	do	1915	9153	do	Orthoclase biotite schist.		2.70	.3	3.1				18.0	14			
Do	do	do	1915	9154	do	Granite gneiss		2.70	.2	3.8				17.7	7			
Do	do	do	1915	9155	do	do		2.70	.4	4.5				18.0	7			
Do	do	do	1915	9156	do	Biotite gneiss		2.70	.2	5.7				18.5	7			
Do	do	do	1915	9157	do	do		2.70	.2	3.4				18.3	10			
Do	do	do	1915	9175	do	do		2.75	.4	4.2				18.5	6			
Do	do	do	1915	9176	do	Granite gneiss		2.70	.2	3.3				18.7	13			
Do	do	do	1915	9177	do	Biotite schist		2.70	.4	8.6								
Do	do	do	1915	9178	do	Mica schist		2.70	.3	6.1				18.3				
Do	do	do	1915	9179	do	Granite gneiss		2.65	.2	3.2				18.3	9			
Do	do	do	1915	9180	do	Hornblende schist		3.00	.3	4.3				17.7	6			
Do	do	do	1915	9181	do	Granite gneiss		2.70	.3	2.9				18.7	6			
Do	do	do	1915	9182	do	Biotite schist		2.85	.3	4.6				16.5	9			
Do	do	do	1915	9183	do	Granite		2.65	.1	3.4				18.7	16			
Do	do	do	1915	9184	do	Biotite granite		2.70	.2	4.8				17.2	5			
Do	do	do	1915	9185	do	Biotite gneiss		2.70	.2	5.7				18.7	11			
Do	do	do	1915	9186	do	Granite gneiss		2.70	.1	5.6				17.8	11			
Do	do	do	1915	9187	do	Hornblende gneiss		2.70	.2	5.5				16.3	8			
Do	do	do	1915	9188	do	Biotite gneiss		2.95	.1	5.1								
Do	do	do	1915	9189	do	do		2.70	.2	3.8				19.0	12			
Do	do	do	1915	9190	do	do		2.80	.2	7.6								
Do	do	do	1915	9191	do	do		2.70	.1	4.1				18.5	8			
Do	do	do	1915	9192	do	Granite gneiss		2.70	.2	8.7				18.0	7			
Do	do	do	1915	9193	do	do		2.65	.4	3.9				18.5	7			
Do	do	do	1915	9194	do	Sericite gneiss		2.65	.4	4.8				18.0	8			
Do	do	do	1915	9195	do	Hornblende schist		3.00	.3	5.3				18.3	10			
Do	do	do	1915	9196	do	Granite gneiss		2.65	.2	4.9				18.0	7			
Do	do	do	1915	9197	do	Hornblende epidote schist.		2.95	.2	6.5				17.7	15			
Do	do	do	1915	9198	do	do		3.00	.1	5.3				17.7	9			
Do	do	do	1915	9199	do	Muscovite granite		2.60	.3	7.2				17.7	5			
Do	do	do	1915	9200	do	Granite gneiss		2.70	.2	3.9				18.3	11			
Do	do	do	1915	9201	do	do		2.65	.3	4.4								
Do	do	do	1915	9298	do	Biotite gneiss		2.80	.3	12.9				17.8	9			
Do	do	do	1915	9299	do	do		2.70	.2	4.3				17.3	5			
Do	do	do	1915	9300	do	do		2.65	.2	3.7				17.8	11			
Do	do	do	1915	9301	do	Granite porphyry		2.55	1.5	6.9								
Do	do	do	1915	9302	do	Biotite schist		2.70	.3	7.0					8			
Do	do	do	1915	9303	do	Granite gneiss		2.70	.2	4.8				18.7				

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

GEORGIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Fulton	Atlanta	Local	1915	9304	Stone	Biotite schist		2.70	1.0	7.6									
Do	do	do	1915	9305	do	Biotite gneiss		2.75	.2	4.6				17.5	6				
Do	do	do	1915	9306	do	do		2.70	.3	3.8				15.7	9				
Do	do	do	1915	9307	do	Fieldspathic quartzite.		2.65	.2	2.8				19.0	16				
Do	do	do	1915	9308	do	Biotite schist		2.75	.2	6.1				18.3	15				
Do	do	do	1915	9309	do	Hornblende gneiss.		2.75	.1	13.6				18.2	6				
Do	do	do	1915	9310	do	Granite gneiss		2.70	.3	6.6				18.0	7				
Do	do	do	1915	9311	do	Granite		2.70	.2	6.8				17.7	5				
Do	do	do	1915	9312	do	Biotite gneiss		2.70	.2	4.1				17.7	8				
Do	do	do	1915	9313	do	Biotite granite		2.65	.2	6.8				18.5	3				
Do	do	do	1915	9314	do	Biotite gneiss		2.70	.2	3.7				17.3	5				
Do	do	do	1915	9315	do	Granite [1]		2.65	.7	13.4				14.3	5				
Do	do	do	1915	9316	do	Biotite granite		2.70	.2	7.3				17.3	4				
Do	do	do	1915	9317	do	do		2.65	.4	12.8				15.0	4				
Do	do	do	1915	9318	do	Biotite gneiss		2.70	.3	4.4				18.8	10				
Do	do	do	1915	9319	do	do		2.80	.3	7.5				17.5					
Do	do	do	1915	9320	do	Biotite schist		2.80	.2	5.4				15.5	16				
Do	do	do	1915	9321	do	Fieldspathic quartzite.		2.60	.3	5.1				18.5	20				
Do	do	do	1915	9322	do	Biotite gneiss		2.80	.3	7.4				17.2	4				
Do	do	do	1915	9323	do	do		2.75	.1	5.6				17.5	5				
Do	do	do	1915	9324	do	do		2.80	.1	5.0				17.8	5				
Do	do	do	1915	9574	do	Biotite granite		2.65	.4	5.1				18.7	5				
Do	do	do	1915	9575	do	do		2.65	.3	3.1				18.5	9				
Do	do	do	1915	9576	do	Biotite schist		2.70	.4	6.4				17.7	7				
Do	do	do	1915	9582	do	Granite		2.70	.2	5.0				19.0	8				
Do	do	do	1915	9583	do	Gneissoid granite		2.60	.3	7.8				19.0	5				
Do	do	do	1915	9584	do	Biotite gneiss		2.80	.3	6.9				18.7	6				
Do	do	do	1915	9585	do	Altered granite porphyry.		2.60	.4	7.9									
Do	do	do	1915	9586	do	Biotite granite		2.70	.4	8.1				17.7	6				
Do	do	do	1915	9587	do	do		2.70	.2	6.4				19.0	7				
Do	do	do	1915	9588	do	Muscovite gneiss		2.65	.2	6.5				17.8	8				
Do	do	do	1915	9589	do	Biotite epidote schist.		2.85	.2	3.5				18.0	4				
Do	do	do	1915	9590	do	Granite gneiss		2.65	.2	4.4				18.7	7				
Do	do	do	1915	9591	do	Schistose quartzite		2.75	.2	3.5				18.8	11				
Do	do	do	1916	9751	do	Biotite granite		2.70	.2	3.7				18.3	8				
Do	do	do	1916	9752	do	Granite gneiss		2.65	.3					18.7	9				
Do	do	do	1916	9753	do	Gneissoid granite		2.69	.2	3.8									
Do	do	do	1916	9754	do	Biotite gneiss		2.65	.2	8.4				17.3	7				
Do	do	do	1916	9755	do	Mica gneiss		2.65	.6	3.0				18.7	10				
Do	do	do	1916	9756	do	Granite gneiss		2.65	.2	4.3				18.7	7				
Do	do	do	1916	9757	do	do		2.65	.6					17.2	7				
Do	do	do	1916	9758	do	do		2.65	.2	4.1				19.3	13				
Do	do	do	1916	9759	do	do		2.70	.2	3.8				18.3	13				
Do	do	do	1916	9760	do	do		2.65	.2	3.5				18.3	9				
Do	do	do	1916	9761	do	Gneissoid granite		2.65	.2	4.7				18.0	7				
Do	do	do	1916	9762	do	Biotite gneiss		2.75	.6					14.7	4				
Do	do	do	1916	9763	do	Hornblende gneiss.		2.95	.4	11.8				18.0	7				
Do	do	do	1916	9764	do	Gneissoid granite		2.60	.5					18.7	8				
Do	do	do	1916	9765	do	Biotite gneiss		2.65	.1	5.0				18.7	6				
Do	do	do	1916	9766	do	Granite gneiss		2.65	.2	3.4				18.0	9				
Do	do	do	1916	9767	do	Hornblende biotite gneiss.		2.80	.2	4.4				16.7	6				
Do	College Park	do	1915	9146	do	Biotite gneiss		2.85	.4	10.5				17.0	4				
Do	Union City	do	1915	9577	do	Granite		2.65	.2	3.0				18.5	6				
Gordon	Fair Mount	Prosp	1916	10396	do	Limestone		2.70	.2	5.3				14.7	5				
Do	do	do	1916	10397	do	do		2.73	.0	4.1				15.3	6				
Greene	Greensboro	Local	1929	31273	do	Biotite granite		2.63	.5	5.4			27,780	18.7	8				
Do	do	do	1929	31274	do	do		2.66	.4	4.4			28,150	18.7	7				
Gwinnett	Grayson	Prosp	1916	10559	do	do		2.54	.4	5.7				18.0	5				
Do	do	do	1916	10561	do	Gneissoid granite		2.59	.4	5.2				17.5	4				
Do	do	do	1916	10563	do	Granite		2.61	.5	5.5				18.3	6				
Do	do	Local	1922	21023	do	Gneissoid granite biotite.		2.60	.4	4.5			26,460	18.0	7				

Do	Lawrenceville	Prosp	1916	10547	do	Biotite hornblende schist.		2.94	.3					15.7	5				
Do	do	Local	1916	10553	do	Granite gneiss		2.55	.4	4.4				17.0	5				
Do	do	Prosp	1916	10554	do	Granite		2.64	.2	5.9				19.2	6				
Do	do	do	1916	10555	do	do		2.59	.5					17.7	4				
Do	do	do	1916	10556	do	Hornblende schist		3.16	.3	6.6									
Do	do	Local	1916	10557	do	Granite		2.60	.4	4.9				18.4	6				
Do	do	do	1916	10558	do	do		2.59	.4	4.6				18.0	5				
Do	do	Prosp	1916	10650	do	Amphibolite		3.04	.2	3.4				18.0	13				
Do	Rosebud	do	1916	10564	do	Biotite gneiss		2.60	.4	5.6				18.9	6				
Do	Snellville	do	1916	10565	do	do		2.59	.4	5.5				17.7	3				
Do	do	Local	1916	10566	do	Granite		2.60	.4	4.0				18.3	6				
Hall	Gainesville	do	1906	1639	do	Dolomitic marble		2.85	.2	7.0				13.7	7				
Do	do	do	1906	1640	do	do		2.85	.1	4.1				9.6	5				
Do	do	do	1906	1641	do	do		2.80	.3	6.7				13.8	4				
Do	do	Prosp	1908	2469	do	Granite gneiss								19.3	11				
Do	do	do	1908	2470	do	do								18.2	8				
Do	do	do	1908	2471	do	Mica schist								15.5	6				
Hancock	Granite Hill	Comm	1930	33072	do	Biotite granite		2.62	.4	3.8				18.0	8				
Harris	Cataula	Prosp	1915	9203	do	Biotite gneiss		2.75	.2	4.5				17.8	7				
Do	do	do	1915	9204	do	Granite gneiss		2.65	.2	4.6				18.7	7				
Henry	Stockbridge	Comm	1915	9331	do	Granite		2.60	.6	2.6				19.9	7				
Do	do	do	1915	9333	do	do		2.60	.4	6.8				19.2	6				
Do	do	do	1915	9336	do	do		2.70	.2	6.5				18.3	4				
Do	do	do	1915	9337	do	Gneissoid granite		2.65	.2	6.0									
Jackson	Holders	Local	1916	10545	do	Hornblende gneiss		2.65	.3	4.0				18.3	7				
Do	Jefferson	do	1916	10546	do	Granite		2.62	.4	5.6				18.3	5				
Do	do	do	1916	10656	do	Hornblende schist		3.05	.0					17.0	4				
Do	Pendergrass	Prosp	1916	10543	do	Olivine diabase		2.95	.0	3.6				19.0	16				
Do	Talmo	do	1916	10544	do	Granite gneiss		2.59	.7	7.6					5				
Jones	Roberts	do	1901	420	do	Diabase		3.00	2.2	2.6									
Do	do	do	1916	10897	do	Argillaceous sandstone.		1.68	18.8	12.2									
Laurens	Dublin	do	1920	16655	do	Chert		2.40	2.7	8.2				20.0	6				
Lumpkin	Blairsville	do	1950	80279	do	Biotite schist					39.2	A							
Do	do	do	1950	80280A	do	do					33.5	A							
Do	do	do	1950	80280B	do	do					56.0	A							
Meriwether	Greenville	do	1915	9578	do	Granite		2.65	.3	3.5				18.7	6				
Do	Harris	Comm	1915	9328	do	do		2.60	.2	7.7				18.0	4				
Monroe	Bolingbroke	do	1927	28750	do	Biotite gneiss		2.68	.3	4.4									
Do	do	do	1927	28751	do	do		2.67	.6	8.8			18,160	17.0	6				
Do	Juliette	Prosp	1915	9332	do	Quartzite		2.70	.2	2.3				18.0	15				
Do	do	do	1915	9334	do	Hornblende gneiss		2.95	.2	6.1				16.5	4				
Do	do	do	1915	9335	do	Aplitic granite		2.65	.1	3.9				17.8	5				
Muscogee	Columbus	do	1916	10858	do	Hornblende gneiss		2.87	.1	4.5				16.7	5				
Do	do	do	1916	10859	do	do		2.87	.2	5.0				16.7	5				
Do	do	do	1916	10864	do	Granite gneiss		2.62	.5	4.3				18.7	7				
Do	do	do	1916	10881	do	do		2.66	.2	3.9				18.7	7				
Do	do	do	1922	21037	do	Opaline sandstone		1.99	8.0	25.6				13.3	4				
Do	Columbus (Bull Creek)	Comm	1924	25429	Gravel	Quartz	2			20.4		A							
Do	do	do	1932	34625	do	do	1½			13.8		B							
Do	do	do	1932	34746	do	do	1½			19.0		A							
Do	do	do	1934	40661	do	do	1½				56.0	A							
Do	Fortson	Prosp	1916	10860	Stone	Biotite gneiss		2.69	.2	4.2				19.3	8				
Do	do	do	1916	10861	do	do		2.68	.3	3.7				18.7	10				
Do	do	do	1916	10862	do	do		2.63	.5	5.3				18.7	9				
Do	Gentian	do	1916	10863	do	do		2.61	.3	3.6				18.7	9				
Do	do	do	1916	10865	do	Hornblende gneiss		2.61	.4	3.7				18.7	10				
Newton	Covington	Local	1915	9539	do	Biotite granite		2.60	.5	5.9									
Do	do	Prosp	1915	9542	do	Gneissoid granite		2.65	.4	4.0				18.2	7				
Do	do	Local	1915	9543	do	Altered chert		2.60	.8	10.5									
Do	Oxford	do	1915	9540	do	Granite		2.60	.5	9.1				18.5	4				
Do	do	do	1915	9541	do	do		2.65	.3	8.1									
Oglethorpe	Lexington	Comm	1922	22685	do	Biotite granite		2.63	.5	3.1			20,410	17.3	6				
Pickens	Marblehill	Prosp	1917	11518	do	Marble		2.72	.1	15.7				11.3	2				
Do	Tate	Comm	1915	9019	do	do		2.70	.2	10.2				12.7	4				
Do	do	do	1915	9020	do	do		2.70	.3					8.7	4				
Do	do	do	1915	9330	do	do		2.75	.2	12.3				12.0	4				
Do	do	do	1917	11513	do	do		2.71	.1	13.2				9.3	2				
Do	do	do	1917	11514	do	do		2.71	.2	12.0				10.3	2				
Do	do	do	1917	11515	do	do		2.71	.2	17.0				3.9	3				
Do	do	do	1917	11516	do	do		2.74	.2	10.6			11,340	10.3	2				
Do	do	do	1917	11517	do	do		2.71	.2				8,735	8.6	3				
Do	do	do	1920	15757	do	do		2.70	.3	12.5				11.3	3				
Do	do	do	1932	34671	do	do		2.73	.2	6.2	58.3	A			3				
Do	do	do	1932	34672	do	do		2.71	.2	5.4	50.4	A			4				
Do	do	do	1932	34673	do	do		2.70	.3	12.8	72.2	A			3				
Do	do	do	1932	34674	do	do		2.71	.2	12.0	74.4	A			3				
Do	do	do	1932	34675	do	Dolomitic marble		2.85	.2	7.2	45.5	A			3				
Do	do	do	1937	44571	do	Marble					49.7	A							

[1] Weathered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

GEORGIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Pickens	Tate	Comm	1937	44572	Stone	Marble					68.4	A							
Do	do	do	1937	44573	do	do					71.9	A							
Do	do	do	1937	44574	do	do					67.1	A							
Do	do	do	1937	44575	do	do					61.1	A							
Do	do	do	1937	44576	do	do					64.8	A							
Do	do	do	1950	80352A	do	do					60.8	A							
Do	do	do	1950	80352B	do	do					64.0	B							
Do	do	do	1950	80352C	do	do					58.3	C							
Do	Whitestone	do	1932	34676	do	Dolomitic marble		2.85	0.2	5.0	39.2	A							
Do	do	do	1933	40058	do	do					44.2	A							
Do	do	do	1934	40085	do	do					41.9	A							
Do	do	do	1935	40925	do	do					33.4	A							
Polk	Portland	do	1913	6918	do	Siliceous limestone.		2.75	.1	3.5				17.1	10				
Do	do	do	1915	8688	do	Limestone		2.75	.2	4.5				15.2	6				
Do	Rockmart	do	1915	8687	do	Dolomitic limestone.		2.85	.1	3.4				15.7	10				
Do	do	do	1942	55791	do	Limestone		2.84	.1		24.9	B	53,900						
Do	do	do	1943	61771	do	Dolomitic limestone.		2.78	.3		17.9	B							
Richmond	Augusta	Prosp	1901	419	do	Granite gneiss		2.65	.2	2.6									
Do	do	Comm	1922	21803	Gravel	Quartz	1½			19.1		A							
Russell	Dixieland	do	1943	61772	do	Q(QzS)	1	2.64	.3		40.8	C							
Rockdale	Conyers	do	1909	3733	Stone	Granite		2.65	.2	4.4				18.6	9				
Do	do	Local	1915	9500	do	do		2.65	.2	5.4				18.5	5				
Do	do	do	1915	9501	do	Gneissoid granite		2.65	.3	5.7				18.0	3				
Do	do	do	1915	9502	do	Granite		2.65	.4	4.7				18.7	5				
Do	do	do	1915	9503	do	Biotite gneiss		2.65	.2	5.8				18.0	4				
Do	do	do	1915	9504	do	Granite		2.60	.4	4.5				18.3	3				
Do	do	do	1915	9505	do	do		2.60	.3	3.7				18.7	3				
Do	do	Comm	1924	25285	do	Biotite granite		2.60	.2	4.2			19,760						
Do	do	do	1924	25452	do	Granite		2.61	.4	4.2			25,130	18.7	8				
Seminole	Lela	Prosp	1916	9869	do	Siliceous shell limestone.		2.00	2.0	22.2				19.3	5				
Stephens	Toccoa	Comm	1901	468	do	Gneiss		2.60	.1	5.2									
Talbot	Talbotton	Prosp	1919	15378	do	Diabase		3.01	.2	1.7				18.7	27				
Walker	Blowing Spring	do	1901	413	do	Limestone		2.60	2.1	3.8									
Do	Chickamauga	Local	1934	40784	do	Argillaceous limestone.		2.76	.4	3.6					9				
Do	do	do	1934	40785	do	do		2.73	.1	5.4					5				
Do	do	do	1938	44889	do	Limestone					30.1	A	26,940						
Do	do	do	1938	44890	do	Argillaceous limestone.					21.7	A	35,820						
Do	do	Prosp	1938	46285	do	do		2.72	.2	6.6	26.1	A							
Do	do	Local	1941	53111	do	Siliceous limestone.					25.3	A						S	1½–1
Do	do	do	1941	53112	do	Argillaceous limestone.					22.4	A						S	1½–1
Do	do	do	1941	53113	do	do					26.3	A						S	1½–1
Do	do	Prosp	1946	72263	do	Limestone		2.73	.2		26.5	A						0.4	1½–#4
Do	do	Local	1946	72265	do	do		2.73	.2		26.7	A						.9	1½–#4
Do	Rossville	Comm	1946	72264	do	do		2.74	.5		25.2	A						2.6	1½–#4
Warren	Camak	do	1932	34637	do	Gneissoid granite									7				
Do	do	do	1932	34775	do	do									6				
Do	do	do	1933	34932	do	Biotite granite									6				
Do	do	do	1933	34933	do	do									7				
Do	do	do	1933	34934	do	do									5				
Do	do	do	1933	34935	do	do									6				
Do	do	do	1933	34952	do	do		2.66	.4	3.9					7				
Do	do	do	1933	34953	do	do		2.66	.4	4.1					6				
Do	do	do	1934	40057	do	do					47.7	A							
Do	do	do	1934	40926	do	do					39.7	A							
Do	do	do	1938	44830	do	do				4.1	34.8	A							
Do	do	do	1938	46225	do	Gneissoid granite					36.9	A							
Do	do	do	1940	50556	do	Biotite granite					35.4	B							
Do	do	do	1943	61774	do	Granite		2.67	.4		31.4	B							

IDAHO

Ada	Boise	Prosp	1905	1261	Stone	Rhyolite		2.15	4.4	6.1				15.3	6				
Do	do	do	1905	1263	do	Basalt		2.75	1.1	7.6				18.1	9				
Do	do	Local	1905	1264	do	do		2.90	.6	2.7				14.9	12				
Bannock	Arimo	do	1945	67080	Gravel	QL	2½											4.3	1–#4
Do	Pocatello	Prosp	1912	6162	Stone	Olivine basalt		2.85	.8	4.8				16.3	11				
Do	do	Local	1912	6163	do	Feldspathic sandstone.		2.70	.4					16.7	6				
Do	do	Prosp	1912	6164	do	Feldspathic quartzite.		2.65	.2	3.1				19.2	9				
Bingham	Blackfoot	Local	1945	67092	Gravel	QS	2½											1.0	1½–#4
Bonneville	Idaho Falls	Comm	1945	67083	do	QSLG	1½											1.0	1½–⅜
Fremont	Saint Anthony	Prosp	1916	10462	Stone	Basalt		2.55	2.6	7.2				16.7	4				
Do	Teton	Local	1945	67089	Gravel	GQz(QRL)	3½											13.8	1½–#4
Jefferson	Menan	do	1945	67094	do	QzSF(QG)	2½											2.3	1½–#4
Kootenai	Coeur d'Alene	Prosp	1910	4394	Stone	Basalt		2.85	.6	2.1				19.0	32				
Latah	Moscow	Local	1905	1271	do	do		2.45	3.4	7.7				5.9	6				
Do	do	do	1905	1273	do	do		2.85	.8	4.6									
Madison	Rexburg	do	1945	67100	Gravel	RG(BQSQz)	2											13.5	1½–#4
Minidoka	Rupert	do	1945	67096	do	RL(SQzQ)	1											4.7	1–#4
Power	Pocatello	do	1945	67081	do	QSQz(BR)	1½											1.2	1½–#4
Do	do	do	1945	67098	do	Qz(SQ)	2½											1.5	1–#4
Twin Falls	Buhl	Comm	1945	67082	do	Fe(GQBO)	2											2.7	1½–#4
Do	Filer	Prosp	1920	17329	Stone	Olivine basalt		2.80	.8	4.6				16.3	12				

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Adams	Quincy	Prosp	1906	1522	Stone	Limestone		2.65	1.0	7.6				10.6	6				
Do	do	Comm	1907	2396	do	Marble		2.70	.6	6.0				13.2	6				
Do	do	Local	1907	2397	do	Chert and limestone.		2.70	.3	5.3				12.7	5				
Do	do	do	1922	20990	do	Crystalline limestone.		2.67	.4	7.2				11.3	5				
Do	do	do	1922	20991	do	do		2.65	.3	8.0				11.7	5				
Do	do	Comm	1925	27395	do	Cherty limestone		2.51	1.9	5.2								U	1½–1
Alexander	Elco	do	1901	437	do	Chert		2.50	2.1	5.9									
Do	do	do	1902	584	do	do		2.40	2.8	2.7									
Do	Olive Branch	Prosp	1913	7148	do	do		2.40	1.1	12.0									
Do	do	Comm	1920	15938	do	do		2.38	1.3	9.7									
Do	do	do	1921	20515	Gravel	do				10.1		A							
Do	do	do	1921	20516	Stone	do				4.0									
Do	do	do	1921	20517	do	do				4.0									
Do	do	do	1922	21315	do	do				9.1									
Do	Ullin	Local	1905	1443	do	do		2.60	.3	5.8				19.4	7				
Carroll	Brookville	do	1913	7213	do	Argillaceous dolomite.		2.75	.5	6.4				10.6	3				
Do	do	do	1914	7421	do	do		2.65	1.6	5.4				15.0	7				
Do	do	do	1914	7422	do	do		2.65	2.1	6.1			18,640	14.2	5				
Do	do	do	1914	7423	do	do		2.65	1.6	5.2			18,180	13.6	7				
Clark	Casey	Prosp	1907	2392	do	Limestone		2.70	.4	5.2				15.7	3				
Do	do	do	1912	5846	do	do		2.70	.4	4.8				15.0	8				
Do	Marshall	do	1907	2391	do	do		2.65	.6	3.7				14.8	5				
Coles	Embarrass	Local	1910	4422	do	do		2.70	.8	4.2			17,300	14.2	6				
Do	Loxa	do	1914	7615	do	Argillaceous limestone.		2.70	.3	4.8				15.0	7				
Cook	Bellwood	Comm	1914	7739	do	Argillaceous dolomite.		2.70	1.3	4.5				15.8	9				
Do	do	do	1924	26311	do	Dolomite												U	1½–1
Do	do	do	1924	26312	do	do												U	1½–1
Do	do	do	1924	26313	do	do												U	1½–1
Do	Chicago	Local	1903	756	do	do		2.70	.5	5.8									
Do	do	Prosp	1911	5742	do	Limestone		2.70	.4	3.1				15.9	9				
Do	do	Comm	1937	43173	Gravel	DoDiD					30.3	A							
Do	Hillside	do	1915	8711	Stone	Argillaceous dolomite.		2.60	2.5	4.2				14.7	4				
Do	Hodgkins	do	1903	716	do	Dolomite		2.70	.4	4.4									
Do	do	do	1914	7733	do	do		2.70	.6	4.2				13.8	7				
Do	Irondale	do	1921	18739	Slag	Blast furnace		2.02	.9	19.9									
Do	La Grange	do	1914	8069	Stone	Dolomite		2.70	1.0	6.5				16.0	6				
Do	do	do	1931	33274	do	do		2.59	1.2	5.9				13.7	6				
Do	Lemont	do	1914	7737	do	do		2.70	.5	5.1				16.0	11				
Do	Lyons	do	1933	34959	do	do												S	1½–¾
Do	McCook	do	1910	4126	do	do		2.75	.5	6.0				15.1	8				
Do	do	do	1914	7768	do	do		2.75	.4	4.8				15.8	10				
Do	do	do	1917	11224	do	do		2.54	1.5	6.0									
Do	do	do	1930	33261	do	do									12				
Do	do	do	1931	33284	do	do									8				

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

ILLINOIS—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Cook	South Chicago	Comm.	1907	2165	Slag	Blast furnace				12.7				15.8	4				
Do	do	do	1907	2166	do	do				12.7				14.8	3				
Do	do	do	1907	2408	do	do				6.9									
Do	do	do	1919	14426	do	do		2.26	2.5	9.1				14.3	6				
Do	South Deering	do	1907	2167	do	do				9.4				15.0	8				
Do	do	do	1907	2316	do	do		2.85	.2	13.5				17.5					
Do	do	do	1937	44375	do	do					27.7	A				100			
Do	Thornton	do	1911	5509	Stone	Dolomite		2.60	1.3	4.9			23,500	13.5	7				
Do	do	do	1912	5755	do	Siliceous dolomite		2.50	2.8	5.3				13.0	6				
Do	do	do	1912	5772	do	Dolomite		2.55	.4	5.3				15.2	8				
Do	do	do	1912	6053	do	do		2.75	.6	6.1			16,880	12.7	7				
Do	do	do	1912	6083	do	do		2.65	.9	5.5				13.7	5				
Do	do	do	1914	7754	do	do		2.70	1.0	4.5				13.9	10				
Do	do	do	1917	11226	do	do		2.52	1.6	6.8									
Do	do	do	1917	11872	do	Argillaceous dolomite.		2.59	1.4	5.5				13.6	6				
Do	do	do	1920	16039	do	Dolomite		2.55	2.0	4.5				14.0	7				
Do	do	do	1924	26299	do	do												U	1½–1
Do	do	do	1924	26300	do	do												U	1½–1
Do	do	do	1925	27393	do	do												U	1½–1
Do	do	do	1934	40120	do	do					31.3	A							
Do	do	do	1935	42335	do	do					29.7	A							
DuPage	Elmhurst	do	1912	5798	do	Argillaceous dolomite.		2.65	.2	4.6			25,230	17.0	8				
Do	Naperville	Prosp.	1908	2678	do	Dolomite		2.60	1.0	9.1				14.2	6				
Edgar	Cherry Point	Local	1908	2424	do	Limestone		2.70	.4	6.6				15.7	4				
Do	Paris	Prosp.	1907	2389	do	do		2.70	.6	5.4				13.7	7				
Do	do	do	1907	2390	do	do		2.65	.5	5.3				15.2	6				
Effingham	Gilmore	Local	1912	6370	do	do		2.70	.4	9.2				16.0	8				
Hancock	Hamilton	Prosp.	1907	2402	do	do		2.55	.3	6.5				17.2	5				
Do	Pontoosuc	do	1907	2401	do	Argillaceous limestone.		2.55	3.1	8.0				8.7	4				
Henderson	Biggsville	do	1909	3258	do	Limestone		2.60	1.5	4.9				18.1	6				
Do	Gladstone	do	1907	2400	do	do		2.60	.8	9.1				9.7	5				
Jersey	Grafton	Local	1915	9228	do	Argillaceous dolomite.		2.55	2.4	6.1				12.5	5				
Do	do	Comm.	1915	9229	do	do		2.50	1.3	7.7				12.7	4				
Do	do	do	1915	9230	do	do		2.60	1.1	7.1				16.5	4				
Jo Daviess	Menominee	Prosp.	1901	452	do	Limestone		2.70	1.1	13.1									
Johnson	Reevesville	do	1914	7509	do	Argillaceous limestone.		2.70	.2	5.1			25,780	15.7	6				
Do	do	do	1914	7510	do	do		2.70	.2	4.1			28,400	16.3	6				
Do	Tunnel Hill	Local	1910	4660	do	Sandstone		2.40	2.0	4.4			19,150	15.9	6				
Do	Vienna	Prosp.	1913	6598	do	Argillaceous limestone.		2.65	.4	3.8				17.8	20				
Do	Whitehill	Comm.	1913	7007	do	Fossiliferous limestone.		2.70	.2	6.8				13.9	4				
Do	do	do	1914	7617	do	Argillaceous limestone.		2.70	.4	3.9				15.2	7				
Do	do	do	1917	12236	do	Siliceous limestone		2.68	.3	4.9				14.7	12				
Kane	Aurora	Local	1908	2543	Slag	Smelter		3.45	.3	2.7									
Do	do	do	1915	8464	do	do		3.50	.2	2.8				18.0	15				
Do	do	do	1915	9750	do	do		3.55	.1	2.2									
Do	Batavia	do	1908	2638	Stone	Limestone		2.75	.6	4.9				13.1	6				
Do	do	do	1911	5096	do	Dolomite		2.65	1.9	6.3				12.1	9				
Do	do	do	1911	5097	do	do		2.65	2.1	5.3				13.9	8				
Do	do	do	1911	5098	do	do		2.70	1.4	4.3				15.4	9				
Do	Carpentersville	Comm.	1935	42332	Gravel	DoBC	1½			8.3	28.8	A						[1] 4.2 [2] 2.3	1½–#4 1½–#4
Do	Elgin	Local	1914	7558	Stone	Dolomite		2.75	.9	4.3				16.0	16				
Do	do	Comm.	1935	42331	Gravel	Dolomite-chert	2											9.3 [2] 7.7	2–#4 2–#4
Do	do	do	1935	42333	do	do	2			5.7	31.6	A						11.6 [2] 6.8	2–#4 2–#4
Do	North Aurora	do	1935	42330	do	Do(CGB)	2			10.8	33.6	A						11.8 [2] 5.3	2–#4 2–#4

Do	do	do	1937	43176	do	LDo					32.9	A							
Kankakee	Bonfield	Prosp	1913	7029	Stone	Dolomite		2.70	1.6	5.2				13.2	7				
Do	Kankakee	Comm	1911	5550	do	do		2.65	1.4	6.9				13.3	5				
Do	do	do	1912	6165	do	do		2.60	2.3	5.7			11,660	13.0	4				
Do	do	do	1912	6443	do	Argillaceous dolomite.		2.70	1.8	9.0			16,650	11.7	5				
Do	do	do	1913	6865	do	Dolomite		2.60	1.1	6.0			13,500	13.8	4				
Do	do	Local	1913	7023	do	do		2.55	1.4	7.2				9.0	4				
Do	do	Comm	1913	7028	do	do		2.60	.8	6.5				9.5	4				
Do	do	do	1913	7072	do	Argillaceous limestone.		2.65	2.0	6.8				10.7	5				
Do	do	do	1914	7736	do	Dolomite		2.70	.8	4.8				15.3	9				
Do	do	do	1916	10367	do	do		2.54	1.3	8.4			11,180	16.0	5				
Do	Lehigh	do	1910	4764	do	do		2.70	1.5	4.4			20,610	12.9	7				
Do	do	do	1913	7025	do	Argillaceous dolomite.		2.65	2.0	5.3				9.2	6				
Do	do	do	1913	7071	do	Dolomite		2.65	1.7	6.0				11.3	4				
Do	do	do	1913	7298	do	Argillaceous dolomite.		2.70	1.1	4.8			25,850	14.3	10				
Do	do	do	1913	7299	do	do		2.65	2.0	4.9			20,000	13.9	7				
Do	do	do	1913	7300	do	do		2.70	4.2	4.5			19,800	14.5	6				
Do	do	do	1913	7301	do	Dolomite		2.60	1.4	5.5			19,700	14.3	8				
Do	do	do	1913	7302	do	do		2.60	1.2	7.0			17,050	14.5	7				
Do	do	do	1914	7525	do	Argillaceous dolomite.		2.60	3.1	5.2				10.8	5				
Do	do	do	1914	7526	do	Dolomite		2.65	1.8	4.2				13.8	6				
Do	do	do	1914	7871	do	Argillaceous dolomite.		2.70	1.3	3.7			16,700	14.7	7				
Do	do	do	1917	11790	do	do		2.52	2.0	7.0				14.3	7				
Do	do	do	1918	13297	do	Dolomite		2.59	1.6	4.6				12.7	7				
Do	Manteno	Prosp	1913	7027	do	do		2.75	.5	7.2				14.0	4				
Do	Tucker	do	1913	7026	do	do		2.70	.6	7.7				14.2	8				
Kendall	Fox Township	do	1916	10208	do	do		2.71	1.0	4.9				13.3	8				
La Salle	Eagle Township	do	1903	787	do	Sandstone		2.55	1.4	21.0									
Lee	Dixon	Local	1912	5954	do	Dolomite		2.75	.8	4.7				16.7	4				
Do	do	Prosp	1915	9509	do	Argillaceous limestone.		2.70	1.2	8.5									
Livingston	Pontiac	do	1916	11133	do	do		2.51	1.8	12.9									
McHenry	Algonquin	Comm	1924	26306	Gravel	DoSQCGD	1			8.1		C							
Madison	Alton	do	1910	4421	Stone	Limestone		2.70	.5	5.7			15,100	14.0	7				
Do	do	do	1917	11780	do	do		2.67	.6	5.9				12.7	4				
Montgomery.	Hillsboro	do	1909	3118	do	do		2.75	1.5	6.0				14.4	6				
Ogle	Oregon	Prosp	1906	1585	do	Chert		2.40	3.8	17.1									
Peoria	Maxwell	do	1907	2394	do	Limestone		2.65	.9	5.0				13.5	8				
Do	do	do	1907	2395	do	do		2.60	1.1	5.3				10.7	6				
Do	Peoria	Comm	1941	53241	do	Argillaceous limestone.				4.6							U	1½–1	
Do	Princeville	Prosp	1907	2393	do	Limestone		2.65	1.0	4.0				16.0	5				
Perry	Du Quoin	do	1926	28219	do	Siliceous limestone		2.41	2.9	4.0			17,920	11.7	15				
Do	do	do	1926	28220	do	do		2.51	2.7	3.6			24,430	15.0	12				
Do	do	do	1926	28221	do	do		2.58	1.7	6.0			24,860	15.3	9				
Pulaski	Ullin	do	1901	450	do	do		2.50	2.4	5.6									
Randolph	Chester	Local	1905	1292	do	Limestone		2.70	.5	3.8				14.0	6				
Do	do	do	1905	1293	do	Fossiliferous limestone.		2.55	1.8	4.5				2.2	4				
Rock Island	Moline	Comm	1907	2398	do	Limestone		2.65	.6	5.0				14.0	6				
Do	Port Byron	do	1907	2399	do	Dolomite		2.80	.5	5.8				14.3	8				
Saint Clair	Columbia	do	1913	7214	do	Limestone		2.60	1.6	3.4				11.9	5				
Do	Falling Spring	do	1914	7734	do	do		2.70	.3	4.3				14.3	8				
Do	do	do	1922	21312	do	do		2.69	.2	4.9				13.3	6				
Do	Smithton	Prosp	1903	770	do	do		2.70	.2	4.4									
Do	do	do	1903	786	do	do		2.70	.1	5.9									
Do	Stolle	Comm	1914	7622	do	do		2.70	.2	4.3				14.7	7				
Scott	Winchester	Local	1914	7652	do	Argillaceous limestone.		2.75	.4	5.6				14.5	3				
Union	Anna	Prosp	1909	3225	do	Limestone		2.70	.4	4.2									
Do	do	Local	1911	5549	do	do		2.70	.2	3.3				14.3	9				
Do	do	Prosp	1914	7623	do	do		2.65	.6	5.0				15.3	5				
Do	Cobden	do	1921	19451	do	Argillaceous limestone.		2.68	.2	3.5			35,320	16.3	9				
Do	do	do	1921	20002	do	Limestone		2.69	.2	4.0			22,570	16.0	10				
Do	do	do	1922	21171	do	do		2.71	.2	3.9			20,660	14.7	9				
Do	Kaolin	do	1922	21019	do	do		2.67	.2	5.5			16,960	14.0	5				
Vermilion	Fairmount	Comm	1907	2388	do	do		2.65	.7	5.1				14.0	8				
Will	Aurora	do	1916	10772	Slag	Smelter		3.45	.0	7.3				18.7	7				
Do	Joliet	Local	1905	1298	Stone	Dolomite		2.70	1.5	4.3				12.9	6				
Do	do	Prosp	1908	2773	do	Chert		2.45	2.5	7.1				19.2	22				
Do	do	do	1908	2774	do	Dolomite		2.65	.8	5.8				15.4	5				

[1] 30 cycles, freezing and thawing.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

ILLINOIS—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Will	Joliet	Prosp	1908	2775	Stone	Dolomite		2.65	1.1	5.2				15.0	8				
Do	do	do	1908	2776	do	do		2.75	1.7	4.7				15.7	9				
Do	do	do	1908	2777	do	do		2.70	1.3	4.7				14.3	10				
Do	do	Local	1916	9827	do	do		2.70	.7	4.9				15.0	8				
Do	do	Comm	1921	18861	Slag	Blast furnace		2.39	1.7	10.1									
Do	do	do	1945	67464	Gravel	Dolomite					28.1	A						[3] 36.5	1½–#4
Do	Lockport	do	1935	42326	do	do	2											[2] 24.3 [2] 13.6	2–¾ 2–⅜
Do	do	do	1935	42327	do	do	2			15.3	33.7	A						[2] 19.0 [2] 11.7	2½–#8 2½–#4
Do	Millsdale	do	1926	28070	do	do	2			24.4		A							
Do	Plainfield	do	1922	21094	do	do	2			9.3		A							
Do	do	do	1924	26302	do	do	2			8.7		A							
Do	do	do	1932	34724	do	do				5.3	33.2	A							
Do	do	do	1935	42329	do	do	2				30.8	A						[2] 11.7 [2] 8.7	2–#4 2–#4
Do	Rockdale	do	1925	28017	do	do	1½			9.6		A							
Do	do	do	1927	29674	do	do		2.78	1.7	9.8		A							
Do	do	do	1935	42328	do	do	2			13.7	33.3	A						[2] 11.5 [2] 6.7	2–#4 2–#4
Winnebago	South Beloit	do	1924	26309	do	DoGC	2½			6.0		A							

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Adams	Berne	Comm	1929	31369	Stone	Argillaceous dolomite.		2.75	0.8	4.8				16.7	13			Q	1½–1
Do	do	do	1929	31370	do	do		2.73	1.0	4.8				14.7	16			S	1½–1
Do	do	do	1929	31371	do	do		2.68	1.6	4.2				14.7	9			Q	1½–1
Do	do	do	1929	31372	do	do		2.70	1.2	6.0				14.7	10			Q	1½–1
Do	do	do	1929	31373	do	do		2.66	1.2	7.0				14.7	8			S	1½–1
Do	do	do	1929	31517	do	Dolomite												1.7	1½–1
Do	Pleasant Mills	do	1905	1346	do	Dolomitic limestone.		2.55	2.2	10.2									
Allen	Fort Wayne	Prosp	1914	7744	do	Hornblende granite.		2.70	.3	2.4									
Bartholomew	Burnsville	do	1905	1384	do	Limestone		2.65	.6	6.0				7.3	5				
Do	Columbus	Comm	1946	70717	do	do		2.41	4.5		33.0	A						52.8	2–¾
Do	do	do	1946	70718	do	do		2.43	4.3									37.7	1–#4
Do	do	do	1946	71794	do	do												24.5	1½–¾
Do	do	do	1946	72227	do	do												25.6	1½–#4
Do	Elizabethtown	do	1944	66647	do	do					31.6	A							
Do	do	do	1944	66892	do	do		2.45	4.3									27.8	½–#4
Do	Grammer	Local	1905	1416	do	do		2.55	.9	6.2				14.8	8				
Do	Hope	do	1905	1382	do	do		2.75	1.0	5.9				10.2	5				
Blackford	Hartford City	Prosp	1915	9342	do	Dolomitic limestone.		2.70	1.6	3.3				14.8	11				
Do	Montpelier	Local	1905	1378	do	do		2.65	1.8	3.7				15.2					
Do	do	Prosp	1907	2077	do	Dolomite		2.75	.7	6.4									
Carroll	Camden	do	1905	1344	do	Limestone		2.75	.3	8.7				16.2	21				
Do	Delphi	do	1905	1206	do	do		2.75	.4	5.1				15.3	14				
Do	do	Local	1922	21051	do	Dolomite		2.70	.5	7.2			22,250	14.0	9				
Cass	Logansport	Comm	1908	2851	do	Cherty limestone		2.70	.1	9.1				14.0	3				
Do	do	Prosp	1909	3865	do	Dolomite		2.70	.2	4.1				16.1	9				
Do	do	Comm	1911	5534	do	Limestone		2.70	.2	5.1			20,350	13.8	5				
Do	do	do	1939	48612	Gravel	DoGCLQ	1½											[4] 4.9 [4] 5.1 [5] 14.9	1½–#4 1½–#4 1½–#4
Do	do	do	1939	48614	Stone	Dolomite												[4] 8.4	1½–#4
Clark	Charlestown	Local	1905	1457	do	Limestone		2.60	.9	5.6				12.8	8				
Do	Henryville	Prosp	1919	15352	do	Dolomitic limestone.		2.84	.6	3.5				17.0	13				

Do	Jefferson Township.	Comm	1936	42062	do	Limestone					37.6	A						3.6	2½-#4
Do	do	do	1936	42066	do	Argillaceous limestone.					27.6	A						[4] 1.8 3.2 [4] 3.0	2½-#4 2½-#4 2½-#4
Do	Jeffersonville	Local	1905	1490	do	Limestone		2.65	.8	3.4				12.5	7				
Do	Pekin	Prosp	1915	9688	do	Argillaceous dolomite.		2.40	3.5	10.3				.0	3				
Do	Speed	Comm	1944	66891	do	Limestone		2.63	1.1									13.1	½-#4
Clay	Brazil	Prosp	1916	11082	do	do		2.79	.4	4.3				17.3	11				
Crawford	Marengo	Comm	1905	1495	do	do		2.65	1.0	3.7				15.0	9				
Do	do	do	1912	5986	do	do		2.70	.2	4.9				15.3	10				
Do	Milltown	do	1905	1468	do	do		2.65	.3	3.4				15.5	8				
Do	do	do	1911	5418	do	do		2.70	.3	3.6				12.7	8				
Do	do	Prosp	1915	9136	do	do		2.70	.3	3.9				13.5	7				
Do	do	Comm	1916	11018	do	do		2.69	.3	3.3				16.3	11				
Do	do	do	1916	11019	do	do		2.69	.4	3.6				15.0	7				
Do	do	do	1916	11020	do	do		2.68	.4	3.5				15.3	11				
Do	do	do	1916	11021	do	Argillaceous limestone.		2.69	.7	3.0				15.3	11				
Do	do	do	1916	11022	do	Limestone		2.69	.2	4.5				16.7	6				
Do	do	do	1916	11023	do	do		2.69	.4	4.4				15.7	7				
Do	do	do	1916	11024	do	Pisolitic limestone		2.54	1.8	5.2				8.7	4				
Do	do	do	1916	11025	do	Limestone		2.59	1.6	4.5				14.7	8				
Dearborn	Dillsboro	Prosp	1905	1417	do	do		2.70	.5	4.8				15.4	7				
Do	Weisburg	do	1905	1418	do	do		2.70	.4	4.8				12.1	8				
Decatur	Greensburg	Local	1905	1420	do	do		2.55	1.9	4.7				11.3	9				
Do	do	Comm	1905	1421	do	do		2.70	.8	4.5				16.4	8				
Do	do	do	1910	4655	do	Dolomite		2.80	.4	4.8			17,960	14.9	6				
Do	New Point	do	1905	1419	do	Limestone		2.75	.5	3.5				15.0	10				
Do	Saint Paul	Prosp	1909	3139	do	do		2.70	.5	3.6				13.8	7				
Do	do	do	1909	3140	do	Siliceous limestone		2.55	2.0	8.3									
Do	do	Comm	1910	4658	do	Limestone		2.70	.9	5.1			18,400	14.3	5				
Do	do	do	1910	4659	do	Dolomitic limestone.		2.70	.7	4.8			20,510	14.7	6				
Do	do	do	1911	5088	do	Limestone							19,800	15.5	8				
Do	do	do	1912	6120	do	Crystalline limestone.		2.70	.5	4.2				13.2	7				
Do	do	Prosp	1916	9859	do	Argillaceous limestone.		2.70	1.2	4.4				14.0	5				
Do	do	Comm	1916	10114	do	do		2.69	.6	4.0				13.3	5				
Do	do	do	1917	11778	do	Limestone		2.67	1.0	4.7				12.3	6				
Do	Westport	Local	1910	4690	do	Dolomitic limestone.		2.70	.4	7.4			20,000	13.3	6				
Delaware	Eaton	do	1919	14871	do	Dolomite		2.71	.8	5.8				15.7	6				
Do	Muncie	Prosp	1908	2578	do	Dolomitic limestone.		2.65	1.2	4.3				16.3	13				
Do	do	Comm	1914	8271	do	Dolomite		2.60	1.0	5.6				14.7	6				
Do	do	Prosp	1923	22736	do	do		2.65	1.5	6.4				15.0	5				
Dubois	Holland	do	1907	1926	do	Limestone		2.75	.5	3.9				15.0	10				
Do	do	do	1907	1927	do	do		2.75	1.0	3.7				16.0	11				
Do	Jasper	do	1908	3086	do	do		2.65	1.0					15.0	11				
Do	do	do	1909	3173	do	do		2.65	.7	3.8				15.0	9				
Do	Johnsburg	do	1907	1928	do	do		2.70	.4	3.5				15.3	7				
Do	Saint Anthony	do	1921	19578	do	Sandstone		2.17	4.3	10.2			11,250	6.7	4				
Do	do	do	1921	19579	do	do		2.23	4.9	10.7			11,980	10.7	4				
Do	Schnellville	do	1916	11066	do	Siliceous limestone		2.71	.2	3.8				15.3	12				
Elkhart	New Paris	Comm	1920	16723	do			2.66	.1	4.0				12.0	9				
Floyd	Edwardsville	Local	1905	1491	do	Limestone		2.65	.8	4.4				18.0	9				
Do	Floyds Knobs	Prosp	1919	15374	do	do		2.62	1.5	4.7				13.3	6				
Do	do	do	1919	15375	do	Feldspathic sandstone.		2.12	7.3	11.8				3.7	4				
Do	do	do	1919	15376	do	do		2.14	7.3	10.9				.0	3				
Do	New Albany (Ohio River).	Comm	1939	48607	Gravel	DiBQzCDoQ	1½											3.4	1½-#4
Do	do	do	1939	48610	do	DiBQzCDoQ												[4] 3.4 [5] 3.7	1½-#4 1½-#4
Do	do	do	1939	48611	do	DiBQzCDoQ													
Fountain	Attica	Local	1905	1426	Stone	Chert		2.50	1.8	3.0									
Do	do	Comm	1937	43157	Gravel	DoQzG					29.2	A							
Do	do	do	1937	43159	do	LDoQzG					29.9	A							
Do	Veedersburg	Prosp	1914	8214	Stone	Argillaceous limestone.		2.65	1.2	3.6				16.7	3				
Franklin	Andersonville	Comm	1936	42070	do	do					31.4	A						2.2 [4] 5.0	2½-#4 2½-#4
Grant	Marion	Prosp	1905	1383	do	Limestone		2.55	3.0	5.2				12.4	15				
Do	do	do	1913	6549	do	Argillaceous limestone.		2.65	.9					13.0	10				
Greene	Bloomfield	Local	1905	1424	do	Limestone		2.70	.7	3.0				16.8	10				
Hamilton	Noblesville	Prosp	1905	1389	do	Dolomite		2.75	.6	4.9				17.1	9				

[2] 30 cycles, freezing and thawing. [3] 20 cycles, freezing and thawing. [4] Magnesium sulfate test. [5] 60 cycles, freezing and thawing; loss determined with half-size sieves.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

INDIANA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Harrison	Corydon	Prosp	1905	1487	Stone	Dolomitic limestone.		2.50	1.3	4.5				17.3	11				
Do	do	do	1909	3446	do	Limestone		2.70	.3	3.7				16.7	9				
Do	do	do	1909	3447	do	Argillaceous dolomite.		2.30	6.6	8.6				1.8	4				
Do	Keisinger's Corner.	Local	1936	42065	do	Limestone					50.0	A						{ 13.2 [4] 32.8	2½–#4 2½–#4
Howard	Kokomo	Prosp	1905	1340	do	Dolomitic limestone.		2.45	4.2	4.1				13.8	17				
Do	do	Local	1906	1520	do	Limestone		2.45	4.1	4.2				11.6	8				
Do	do	Comm	1911	5232	do	do		2.70	.2	5.8				15.2	6				
Huntington	Huntington	do	1907	2286	do	Cherty dolomite		2.65	1.8	5.2				13.6	7				
Do	do	do	1908	2816	do	Dolomite		2.60	2.7	4.6				12.0	10				
Do	do	do	1912	5951	do	do		2.60	2.5	5.7				12.3	6				
Do	do	Prosp	1912	6031	do	do		2.75	.3	6.0				15.1	8				
Do	do	do	1912	6032	do	Limestone		2.70	.5	6.9				14.4	8				
Do	do	do	1912	6038	do	Cherty limestone		2.65	.6	6.0				15.0	8				
Do	do	Comm	1913	6871	do	Siliceous dolomite		2.65	1.9	4.5				9.9	8				
Do	do	Prosp	1916	11183	do	Dolomite		2.61	1.3	4.1			25,420	14.0	7				
Do	do	Comm	1921	17944	do	Argillaceous dolomite.		2.58	3.6	7.1									
Do	do	do	1924	25055	do	Dolomite		2.61	2.1	7.1				13.7	7			Q	1½–1
Do	do	do	1924	25056	do	Argillaceous dolomite.		2.49	2.7	6.0				12.3	8			U	1½–1
Do	do	do	1924	25057	do	do		2.60	2.3	5.1				12.0	10			U	1½–1
Do	do	do	1935	42060	do	Argillaceous limestone.					33.1	A						{ 24.0 [4] 54.5	2½–#4 2½–#4
Do	do	do	1935	42069	do	Dolomite					36.7	A						{ 1.5 [4] 7.9	2½–#4 2½–#4
Do	do	do	1935	42153	do	do				10.0					4			S	1½–1
Do	do	do	1935	42259	do	do				5.9					5			S	1½–1
Do	do	do	1935	42260	do	do				6.2					5			S	1½–1
Do	do	do	1935	42261	do	do				6.3					7			S	1½–1
Do	Markle	do	1912	6066	do	do		2.70	.8	14.2				14.3	5				
Do	do	do	1913	6873	do	do		2.70	.5	6.7				13.3	6				
Jackson	Rockford	Prosp	1905	1388	do	do		2.65	2.0	5.1				16.8	14				
Jay	Portland	do	1905	1376	do	do		2.70	.4	7.0				13.0	8				
Jefferson	Deputy	do	1905	1413	do	Dolomitic limestone.		2.70	.3	4.7				10.9	7				
Do	do	do	1910	4699	do	Limestone		2.70	.3	5.0				15.3	9				
Do	do	do	1916	10325	do	do		2.66	.4	5.5									
Do	Hanover	do	1905	1414	do	Dolomite		2.55[3]	2.2	12.3				4.4	7				
Do	North Madison	do	1905	1412	do	Limestone		2.65	2.0	5.2				12.3	12				
Jennings	Brewersville	do	1905	1488	do	Dolomitic limestone.[11]		2.70	.3	3.7				13.8	8				
Do	Hayden	Local	1905	1458	do	Limestone		2.70	.6	3.2				14.9	9				
Do	North Vernon	Prosp	1910	4702	do	Dolomitic limestone.		2.60	2.3	4.4			24,790	14.9	8				
Do	do	Comm	1944	66890	do	Limestone		2.61	2.0									11.2	½–#4
Do	Vernon	Prosp	1916	9811	do	Dolomite		2.55	2.7	5.0				15.3	9				
Do	do	Comm	1916	10834	do	Limestone		2.69	1.2	3.9				15.3	9				
Do	do	do	1916	10847	do	Dolomite		2.39	4.6	8.1				12.0	4				
Do	do	do	1917	11235	do	Argillaceous dolomite.		2.60	2.3	4.8			24,150	12.3	6				
Do	do	do	1917	11236	do	Dolomite		2.64	.9	5.7			27,490	14.7	11				
Do	do	do	1917	11237	do	Limestone		2.67	.6	4.5			15,330	13.3	6				
Do	do	do	1917	11238	do	Argillaceous limestone.		2.27	.7	10.9			14,840	8.0	5				
Knox	Bicknell	Prosp	1902	540	do	Dolomitic limestone.		2.70	.5	4.0									
Do	Freelandville	Local	1902	515	do	Limestone		2.75	.4	3.8									
Do	do	do	1902	588	do	Sandy dolomite		2.80	.7	2.5									
Lawrence	Bedford	do	1910	4697	do	Limestone		2.55	1.9	6.2			13,860	10.3	6				
Do	do	do	1911	5027	do	do		2.50	1.9	6.4			6,900	8.5	4				
Do	do	do	1911	5028	do	do		2.65	.5	4.2				15.3	9				
Do	do	do	1911	5029	do	do		2.50	1.6	7.6			6,450	8.3	5				
Do	do	do	1918	12889	do	do		2.30	5.4					.0	4				

Do	do	Comm	1922	21105	do	do		2.24	4.6	12.3				8.0	3				
Do	do	do	1932	34632	do	do		2.24	5.6	14.9									
Do	do	do	1936	42063	do	do					53.6	A						10.0	2½-#4
																		[4] 19.6	2½-#4
																		6.0	2½-#4
Do	do	do	1936	42064	do	Argillaceous limestone.												[4] 15.0	2½-#4
Do	do	do	1944	66893	do	Limestone		2.50	3.1									17.8	½-#4
Do	Lawrenceport	Prosp	1910	4698	do	do		2.50	1.6	13.3			5,020	5.7	3				
Do	Mitchell	Comm	1905	1423	do	do		2.60	1.0	4.6				13.0	9				
Do	do	Prosp	1910	4197	do	Argillaceous dolomite.		2.45	3.8	8.1			12, 250	2.7	4				
Do	Williams	do	1905	1489	do	Dolomitic limestone.		2.70	.4	4.1				16.4	8				
Madison	Alexandria	Local	1905	1380	do	Limestone		2.65	.8	4.3				11.8	7				
Do	do	Prosp	1924	25980	do	Dolomite		2.58	1.7	6.1				12.0	7				
Do	Anderson	do	1915	8752	do	Limestone		2.70	.2	4.5				17.0	4				
Do	Frankton	do	1905	1381	do	do		2.65	1.0	4.4				14.5	7				
Do	Ingalls	Local	1905	1379	do	do		2.70	.2	5.6				14.6	5				
Do	do	Comm	1906	1714	do	do		2.70	.2	5.8				14.5	8				
Do	do	do	1906	1715	do	do		2.70	.8	5.8				10.7	5				
Do	Pendleton	do	1936	42061	do	Siliceous limestone					29.3	A						20.0	2½-#4
																		[4] 38.7	2½-#4
																		10.5	2½-#4
Do	do	do	1936	42068	do	Argillaceous limestone.					36.4	A						[4] 30.8	2½-#4
																		6.0	1½-#4
Marion	Indianapolis	do	1937	43124	Gravel		2											[3] 11.5	1½-#4
Martin	Shoals	Prosp	1905	1459	Stone	Limestone		2.60	1.2	3.2				14.9	9				
Miami	Peru	do	1904	994	do	Dolomite		2.80	.4	5.6									
Do	do	Comm	1937	44280	do	Cherty limestone					24.3	B							
Do	do	do	1942	56075	Gravel	DoLCQz(GB)		2.64	1.6									5.9	1½-#4
Monroe	Bloomington	Local	1905	1463	Stone	Limestone		2.60	1.3	3.5				15.8	12				
Do	do	Comm	1905	1464	do	do		2.40	3.0	10.8				.0	4				
Do	do	Local	1905	1465	do	do		2.75	2.0	10.6				3.9	6				
Do	do	do	1905	1466	do	do		2.65	.6	5.3				9.7	7				
Do	do	do	1905	1467	do	do		2.65	1.0	3.0				15.2	13				
Do	do	Prosp	1914	8181	do	do		2.70	.3	5.0				15.2	5				
Do	do	do	1916	10256	do	do								12.0	5				
Do	do	do	1916	10257	do	Argillaceous limestone.								14.6	5				
Do	do	do	1916	10493	do	Limestone			.6	4.8				14.7	7				
Do	Victor	Comm	1915	9450	do	do		2.60	1.2	9.9				11.8	5				
Do	do	do	1915	9452	do	do								15.0	6				
Montgomery.	Parkersburg	Local	1924	25163	do	do		2.61	1.0	7.3				16.7	4				
Do	Waveland	do	1905	1386	do	do		2.60	1.2	3.9				8.7	5				
Newton	Kentland	do	1905	1348	do	do		2.70	.2	4.1				16.4	12				
Do	do	do	1915	8761	do	do		2.70	.4	3.8				14.8	5				
Ohio	Rising Sun	do	1905	1409	do	do		2.70	.3	5.5				13.1	9				
Orange	Orleans	do	1905	1462	do	do		2.55	1.9	4.4				14.8	5				
Owen	Spencer	Comm	1902	516	do	do		2.65	.6	3.5									
Do	do	do	1905	1341	do	do		2.70	.5	3.7				13.8	10				
Do	do	do	1905	1422	do	do		2.60	1.8	3.4				9.4	9				
Pike	Petersburg	Prosp	1905	1461	do	Calcareous shale		2.75	.5	4.9				.2	9				
Do	do	do	1908	2980	do	Ferruginous sandstone.		2.40	2.4	39.0				.0	2				
Do	do	do	1908	2981	do	Feldspathic sandstone.		2.35	4.3	10.7				.0	5				
Do	do	do	1908	2982	do	Siliceous limestone		2.65	1.4	4.4				18.8	6				
Do	do	do	1912	6454	do	Carbonaceous limestone.		2.80	.8	2.7				17.2	20				
Posey	Mount Vernon	do	1905	1492	do	Limestone		2.70	.5	1.8				15.4	8				
Do	do	do	1905	1493	do	Dolomitic limestone.		2.70	1.0	3.5				16.2	15				
Putnam	Fillmore	Local	1916	10519	do	Argillaceous limestone.		2.55	1.4					11.2	6				
Do	do	do	1916	10520	do	do		2.59	1.2					12.0	6				
Do	Greencastle	do	1905	1210	do	Limestone		2.65	.7	3.9				13.9	8				
Do	do	do	1905	1212	do	do		2.70	.3	3.2				14.2	12				
Do	do	do	1905	1342	do	do		2.70	.3	4.3				12.9	7				
Do	do	do	1905	1343	do	do		2.70	.5	3.9				17.3	11				
Do	do	Prosp	1905	1347	do	do		2.65	.9	4.5				15.5	8				
Do	do	Local	1907	2111	do	do		2.70	.5	4.2				15.0	7				
Do	do	do	1907	2112	do	do		2.70	.4	3.4				13.0	8				
Do	do	Prosp	1909	3368	do	do		2.70	.4	3.2			16,010	15.8	11				
Do	do	Comm	1916	9860	do	do		2.70	.4					16.7	5				
Do	do	Prosp	1916	10727	do	do		2.57	.7	7.3				9.0	3				
Do	do	Comm	1917	11818	do	do		2.69	.4	6.9				15.3	5				
Do	do	do	1946	70124	do	do												20.6	½-⅜
Do	do	do	1946	71597	do	do		2.67	.7		29.7	A						7.0	1½-#4

[3] 30 cycles, freezing and thawing. [4] Magnesium sulfate test.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

INDIANA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu ft.*	*In.*	*Pct.*	*In.*
Putnam	Greencastle	Comm	1946	72226	Stone	Limestone		2.65	0.6	4.4				13.7	9			9.1	1½-#4
Do	Russellville	Local	1905	1345	do	do		2.65	.5	7.2				7.9	6				
Randolph	Ridgeville	do	1905	1350	do	Dolomitic limestone.		2.70	1.3	8.7				16.7	9				
Do	do	do	1906	1659	do	Dolomite		2.65	1.1	7.7				14.3	7				
Do	do	Comm	1912	5869	do	do		2.70	.5	4.6			19,470	12.9	6				
Ripley	Holton	do	1910	4700	do	Dolomitic limestone.		2.70	.4	4.0				14.2	8				
Do	do	do	1911	5565	do	Limestone					29.3	A						{ 6.5 4 12.7	2½-#4 2½-#4
Do	Napoleon	do	1936	42067	do	Argillaceous limestone.		2.70	.4	5.0			20,190	13.5	7				
Do	Osgood	Local	1910	4701	do	Dolomite		2.70	.6	8.1			14,470	13.7	9				
Do	do	do	1911	5737	do	Limestone		2.70	.2	4.8			16,480	15.7	5				
Do	do	Comm	1923	23824	do	do		2.35	5.4		45.5	A						9.8	1½-#4
Rush	Moscow	do	1950	81225	do	Siliceous limestone.		2.60	1.4	12.7				13.0	5				
Do	New Salem	Local	1905	1438	do	Dolomite		2.70	1.3	2.7				8.6	6				
Do	Rushville	Prosp	1905	1410	do	Limestone		2.65	1.4	3.3				12.2	9				
Scott	Lexington	Local	1905	1456	do	do												{ 6.8 4 7.4	2½-#4 2½-#4
Do	do	Comm	1936	42071	do	do		2.60	1.6	5.6				15.7	11				
Shelby	Shelbyville	Prosp	1907	2006	do	do		2.70	1.1	4.0				11.7	6				
Do	do	do	1907	2007	do	do		2.60	1.5	4.2				7.7	5				
Do	Waldron	do	1907	2005	do	do				7.0		C							
Spencer	Rockport	Comm	1936	42951	Gravel	SC		2.65	.8	3.8				15.2	7				
Sullivan	Wilfred	Prosp	1915	9135	Stone	Argillaceous dolomite.		2.70	.3	5.4				12.8	8				
Switzerland	Vevay	do	1905	1415	do	Limestone		2.70	.8	4.0				15.8	8				
Vanderburgh.	Evansville	do	1905	1494	do	Dolomitic limestone.													
Do	Evansville (Ohio River).	Comm	1939	48608	Gravel	CSQzG	2											5.2	1½-#4
Do	do	do	1939	48609	do													4 4.5	1½-#4
Do	do	do	1939	48617	do													5 7.2	1½-#4
Vermillion	Cayuga	do	1937	43160	do	LDSGQz					24.2	A							
Wabash	Wabash	Local	1905	1349	Stone	Limestone		2.55	1.5	4.6									
Do	do	do	1905	1390	do	do		2.60	2.0	3.8				15.3	10				
Do	do	Comm	1905	1391	do	Dolomitic limestone.		2.75	.2	3.3				16.0	9				
Do	do	do	1906	1647	do	Limestone		2.65	.7	4.3				15.0	6				
Do	do	Local	1910	4657	do	Dolomitic limestone.		2.70	.5	3.9			18,790	14.5	6				
Do	do	Comm	1939	48564	do	Dolomite				6.1	37.7	A						11.9	1½-#4
Warren	Williamsport	Prosp	1904	880	do	Calcareous sandstone.		2.50	3.3	7.0									
Do	do	Comm	1922	21038	Gravel	LDCS	1½			9.4		A							
Warrick	Boonville	Local	1905	1460	Stone	Limestone		2.70	.6	3.3				17.2	11				
Do	Elberfeld	do	1916	10020	do	do		2.55	2.4	4.5				15.3	9				
Washington.	Salem	Prosp	1921	19127	do	Sandstone				8.6									
Wayne	Richmond	do	1905	1385	do	Limestone		2.70	.5	4.5				15.3	6				
Do	do	do	1913	6876	do	Argillaceous dolomite.		2.75	.7	5.7				15.2	4				
Wells	Bluffton	Local	1905	1377	do	Dolomite		2.72	1.0	6.3				15.8	13				
Do	do	do	1905	1387	do	do		2.75	.3	5.8				17.0	8				
Do	do	Comm	1913	6872	do	Argillaceous dolomite.		2.70	1.1	6.9				16.4	4				
Do	do	do	1916	9935	do	Dolomite		2.65	1.8	6.2				15.0	8				
Do	do	do	1924	24673	do	do		2.62	2.0	5.0			14,310	15.3	6				
Do	do	do	1924	25058	do	Argillaceous dolomite.		2.66	1.8	5.2				15.3	8			Q	1½-1
Do	do	do	1924	25059	do	do		2.55	2.8	6.0				13.3	8			U	1½-1
Do	do	do	1924	25060	do	do		2.68	1.6	4.8				16.7	9			U	1½-1
White	Monon	do	1905	1469	do	Dolomite		2.70	.6					14.3	9				

Do	do	do	1919	14730	do	do		2.73	.2	5.6				15.7	7			
Do	do	do	1929	32363	do	do				5.4								
Whitley	Columbia City	do	1915	9007	do	Limestone		2.70	.3	5.2				11.9	4			
Do	do	do	1915	9008	do	Argillaceous dolomite.		2.75	.8	4.6				17.0	8			

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Black Hawk.	Glory Station	Comm	1919	13913	Stone	Limestone		2.58	0.2	4.7				15.0	4			
Do	do	do	1922	21066	do	Argillaceous dolomite.		2.44	4.1	6.4				9.3	6			
Do	Raymond	Prosp	1901	462	do	Dolomite		2.70	.4	4.5								
Cerro Gordo.	Mason City	do	1915	8912	do	Limestone		2.70	.4	6.0				13.0	2			
Do	do	do	1915	8913	do	Dolomite		2.80	.7	3.8				13.7	6			
Do	do	do	1915	8914	do	Limestone		2.65	.9	5.7				13.0	3			
Dubuque	Center Grove	do	1914	7704	do	Argillaceous dolomite.		2.75	.9	14.6				13.6	6			
Do	Dubuque	Comm	1915	8922	do	do		2.75	.9	4.7				13.7	9			
Do	do	do	1917	11783	do	do		2.72	.9	5.7				15.0	7			
Do	do	do	1923	22785	do	Dolomite		2.68	1.1	3.0				13.3	8			
Do	Dyersville	Prosp	1914	7854	do	Argillaceous dolomite.		2.70	.8	13.8				10.8	4			
Do	Farley	Local	1914	7855	do	do		2.69	2.5	11.3				5.1	4			
Do	Peosta	Prosp	1901	455	do	Dolomite		2.55	2.1	11.6								
Jones	Stone City	Comm	1914	7859A	do	Dolomite (white)		2.45						2.2	4			
Do	do	do	1914	7859B	do	Dolomite (gray)		2.70		7.6				15.7	7			
Do	do	do	1919	13903	do	Dolomite		2.12	9.0	14.5				.0	4			
Do	do	do	1922	21829	do	Argillaceous dolomite.				16.3								
Lee	Ballinger	do	1912	5972	do	Limestone		2.60	1.3	5.5				9.2	4			
Linn	Cedar Rapids	Prosp	1911	5525	do	Dolomitic limestone.		2.75	.8	6.7			19,950	16.8	11			
Do	do	do	1912	6102	do	Dolomite		2.50	2.4	14.9				.0	3			
Do	do	do	1912	6103	do	Limestone		2.70	1.0	4.6				10.0	8			
Lyon	Klondike	Comm	1937	44350	Gravel	DoGQS	2				28.7	A						
Do	do	do	1937	44522	do	DoGQzQ	2				27.1	A						
Madison	Peru	do	1912	5973	Stone	Limestone		2.65	.9	4.6				15.6	8			
Marshall	Legrand	Prosp	1911	5526	do	do		2.65	1.3	4.6			14,850	15.3	6			
Mills	Council Bluffs	do	1917	11614	do	do		2.67	.3	5.4				15.7	5			
Scott	Buffalo	Comm	1913	7121	do	do		2.65	1.5	5.1				7.9	3			
Do	do	do	1922	21283	do	Argillaceous limestone.		2.62	1.1	8.1				12.0	4		U	1½–1
Do	Linwood	do	1922	21284	do	do		2.56	1.8	8.6				8.7	6		U	1½–1
Do	do	do	1922	21285	do	do		2.64	1.3	7.0				7.3	4		U	1½–1
Do	do	do	1922	21286	do	do		2.63	.8	5.6				14.3	7		S	1½–1
Sioux	Hawarden	do	1930	32474	Gravel	GQSLDi	2			6.1		A						
Do	do	do	1930	32500	do		2½			8.1		A						
Do	do	do	1931	33976	do	LQDoGD	1½			6.9		B						
Tama	Montour	Prosp	1901	384	Stone	Limestone		2.60	1.0	6.7								

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Allen	Humboldt	Comm	1931	34164	Stone	Limestone		2.38	4.2	15.0	43.4	A		12.4	2			
Do	do	do	1931	34165	do	do		2.39	3.9	14.4	43.0	A		10.3	3			
Do	do	do	1931	34166	do	do		2.41	3.8	13.0	40.1	A		13.3	3			
Do	do	do	1931	34167	do	do		2.35	4.5	15.2	41.7	A		12.4	2			
Atchison	Atchison	do	1924	24883	do	Siliceous limestone.		2.71	.2	4.2				15.3	10		S	1½–1
Do	do	do	1924	24884	do	do		2.50	2.7	5.7				9.0	7		Q	1½–1
Do	do	do	1924	24885	do	Argillaceous limestone.		2.39	4.2	8.0				9.7	6		U	1½–1
Bourbon	Fort Scott	Prosp	1915	9599	do	Limestone breccia		2.35	3.5	12.5			7,380	5.0	3			
Butler	Douglass	Comm	1931	34542	Gravel	Chert		2.47	1.9	7.5		A						
Do	El Dorado	Prosp	1925	26831	Stone	Argillaceous limestone.		2.28	4.8	7.4				11.7	3		Q	1½–1
Do	do	Comm	1926	28399	do	do		2.31	5.2	8.2				.0	3		U	1½–1
Do	do	do	1926	28400	do	do		2.35	4.1	7.8				.3	4		U	1½–1
Do	do	do	1926	28401	do	do		2.21	6.4	13.4				.0	5		U	1½–1
Do	do	do	1926	28402	do	do		2.23	5.6	13.0				9.3	4		U	1½–1
Do	do	do	1927	29636	do	do		2.29	5.3	8.9				.0	4			
Do	do	do	1927	29673	do	do		2.31	4.4	6.8								
Do	do	do	1928	30209	do	do		2.19	6.6	10.4								
Do	do	do	1932	34629	do	do		2.23	6.4	10.5								
Chautauqua	Sedan	Prosp	1920	15939	do	do		2.49	2.4	9.2				8.7	4			

[4] Magnesium sulfate test.

[5] 60 cycles, freezing and thawing; loss determined with half-size sieves.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

KANSAS—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Cherokee	Baxter Springs	Local	1918	12649	Gravel	Chert	2			10.3		A		0.0	3				
Cowley	Arkansas City	Prosp	1904	1109	Stone	Limestone		2.40	2.7	14.9									
Do	do	do	1904	1111	do	do		2.45	3.4					3.1	3				
Do	do	do	1920	15493	Gravel	Chert	2			7.1		A							
Do	do	Comm	1929	31635	do	do	2	2.56	1.1	10.2		A							
Do	do	do	1929	32026	do	do	1½	2.52	.5	8.6		A							
Doniphan	Wathena	Local	1922	21024	Stone	Argillaceous limestone.		2.57	1.6	5.6				11.7	4				
Do	do	do	1922	21025	do	Limestone		2.57	2.0	8.0				11.7	4				
Do	do	do	1922	21026	do	Ferruginous limestone.		2.43	2.8	9.8				12.3	5				
Douglas	Lawrence	Prosp	1917	11683	do	Argillaceous limestone.		2.46	2.9	10.7				14.7	6				
Do	do	do	1917	11684	do	do		2.44	2.6	7.6				4.0	4				
Do	do	do	1917	11687	do	do		2.54	1.5	6.1				8.7	4				
Do	Lecompton	do	1917	11689	do	Cherty limestone		2.53	.6	9.3				12.0	5				
Elk	Moline	Comm	1911	5248	do	Limestone		2.55	1.0	7.2				10.8	5				
Do	do	do	1920	16671	do	do		2.54	1.8	8.7				11.3	4				
Do	do	do	1927	29546	do	Argillaceous limestone.		2.49	2.5	7.0				11.3	4				
Do	do	do	1930	33272	do	do		2.59	1.2	3.5				14.4	6				
Do	do	do	1934	40260	do	do					49.0	A							
Geary	Junction City	do	1917	11681	do	do		1.92	10.4	31.8				.0	3				
Do	do	do	1917	11682	do	Cherty limestone		2.14	7.6	13.0				14.0	2				
Do	do	Local	1917	11695	do	Argillaceous limestone.		2.39	3.6	13.7									
Do	do	do	1917	11696	do	do		2.63	.9	5.7				14.3	7				
Labette	Oswego	do	1906	1765	do	Limestone		2.70	.4	9.2				13.3	6				
Leavenworth	Fort Leavenworth.	Prosp	1910	4127	do	Quartzite		2.65	.2	2.2				19.3	25				
Do	do	do	1910	4186	do	Argillaceous limestone.		2.60	1.5	4.6				15.1	7				
Do	do	do	1910	4187	do	Limestone		2.65	.7	4.0				15.6	11				
Do	Neely	do	1917	11692	do	do		2.49	1.7	8.3				15.7	6				
Do	Tonganoxie	Local	1917	11686	do	Argillaceous limestone.		2.50	1.9	7.6				11.3	5				
Marshall	Blue Rapids	Prosp	1908	2689	do	Limestone		2.50	2.1	6.3				9.0	4				
Do	do	do	1908	2690	do	do		2.40	3.8	9.6				15.0	3				
Mitchell	Beloit	do	1916	9780	do	Argillaceous limestone.		2.30	4.7	18.2				4.3	4				
Morris	Council Grove	do	1917	11693	do	do		2.45	2.4	9.0				11.7	3				
Do	do	do	1917	11694	do	Chert		2.46	1.6	4.6									
Do	Helmick	do	1917	11677	do	Argillaceous limestone.		2.11	6.6	11.5				16.7	2				
Do	do	do	1917	11678	do	do		1.96	7.5	30.1				2.7	3				
Do	do	do	1917	11679	do	do		2.29	4.6	15.0				.0	3				
Do	do	do	1917	11680	do	do		2.15	6.9	19.5				.0	3				
Do	do	Local	1920	16179	do	Limestone		2.21	6.7	9.5				15.7	3				
Phillips	Woodruff	Prosp	1919	14882	do	Sandstone		2.32	1.2	5.7				18.7	7				
Reno	Hutchinson (Arkansas River).	Local	1928	31216	Gravel		½	2.63								112	½–#100		
Riley	Manhattan	do	1931	34543	Stone	Argillaceous limestone.		2.17	6.2	12.8	42.9	A		12.5	4				
Do	Stockdale	Prosp	1908	2691	do	Limestone		2.40	4.1	8.6				11.7	3				
Sedgwick	Wichita	Comm	1928	31217	Gravel		½	2.64								112	½–#100		
Shawnee	Tevis	Prosp	1917	11676	Stone	Limestone		2.64	.8	5.1				13.3	8				
Do	do	do	1917	11688	do	do		2.51	2.0	7.7				16.5	6				
Do	Topeka	do	1917	11685	do	Argillaceous limestone.		2.44	3.1	8.7				10.3	6				
Do	do	do	1917	11690	do	do		2.43	3.3	7.7				12.0	5				
Do	do	do	1917	11691	do	do		2.30	5.4	7.2				13.3	3				
Do	do	do	1917	11697	do	do		2.57	1.5	6.7				13.0	6				
Wilson	Fredonia	do	1915	9267	do	Argillaceous dolomite.		2.70	.6	9.0				12.8	4				
Wyandotte	Morris	Comm	1923	23051	do	do		2.40	5.3	8.1				4.0	6				

KENTUCKY

Barren	Glasgow	Prosp	1911	5748	Stone	Crystalline limestone.		2.70	0.4	3.8				13.0	5			
Do	do	do	1922	22524	do	Limestone		2.69	.3	4.3				14.3	6			
Do	do	do	1922	22525	do	do		2.67	.5	4.9				14.0	7			
Do	Park City	Local	1946	72516	do	do		2.71	.8		19.8	A	20,500		9			5.1	1½–#4
Bell	Blackmont	do	1926	28439	do	Sandstone		2.44	2.0	6.0				16.7	8			S	1½–1
Do	do	do	1926	28440	do	do		2.47	1.8	5.4				16.7	8			S	1½–1
Boyd	Ashland	Comm	1948	74717	Slag	Blast furnace		2.22	7.6		37.4	A				74	3–⅜		
Do	Catlettsburg	Prosp	1907	1993	Stone	Sandstone		2.50	1.1	6.2				13.2	7				
Breathitt	Jackson	do	1920	16746	do	Feldspathic sandstone.		2.46	3.0	8.6					5				
Bullitt	Mount Washington.	Local	1923	24220	do	Argillaceous limestone.		2.77	.4	5.0				10.0	4				
Caldwell	Cedar Bluff	Prosp	1901	461	do	Dolomitic limestone.		2.20	2.3	4.5									
Do	do	Comm	1911	5552	do	do		2.70	1.0	5.1			23,860	14.1	12				
Do	do	do	1913	6575	do	Limestone		2.70	.6	4.3				16.1	10				
Do	do	do	1914	7688	do	Argillaceous limestone.		2.70	.3	4.7			25,720	15.3	9				
Do	do	do	1917	11343	do	Cherty limestone		2.62	.3	4.5				16.7	8				
Do	do	do	1920	16192	do	Limestone		2.68	.3	6.0									
Do	Princeton	Prosp	1916	10824	do	do								15.0	7				
Carter	Carter	Local	1912	5922	do	Siliceous limestone.		2.70	.4	3.3			13,400	14.6	7				
Do	Grayson	Prosp	1918	12754	do	Limestone		2.68	.1	5.1				15.0	11				
Do	Limestone	Comm	1906	1631A	do	do		2.65	.8	4.3				14.3	7				
Do	do	do	1906	1631B	do	do		2.65	.6					12.1	6				
Do	do	do	1906	1631C	do	do		2.65	.1					18.2	14				
Do	do	do	1912	5921	do	do		2.65	.4	4.2			14,900						
Do	Olive Hill	do	1920	17060	do	do		2.71	.1	5.1				15.3	6				
Do	do	Prosp	1920	17075	do	Ferruginous sandstone.				17.6				.7					
Do	do	do	1920	17093	do	Limestone		2.68	.4	4.5				15.3	8				
Do	do	Comm	1920	17158	do	do		2.68	.4	4.9				14.0	6				
Cumberland.	Burkesville	Local	1931	34087	do	Argillaceous dolomite.		2.71	1.4	4.8				10.7	7			U	1½–1
Do	do	do	1931	34177	do	do		2.68	.8	4.1				17.3	6			U	1½–1
Daviess	Owensboro (Ohio River).	Comm	1940	51650	Gravel	CQQz(RS)	1½	2.61	.9		27.0	A							
Edmondson	Mammoth Cave	Local	1946	72515	Stone	Limestone		2.70	.4		18.9	A	31,750		9			1.4	1½–#4
Do	do	do	1946	72518	do	Feldspathic sandstone.							16,100		6			15.7	1½–#4
Fayette	Lexington	do	1901	446	do	Limestone		2.70	.4	6.2									
Do	do	do	1901	447	do	do		2.60	2.2	7.4									
Do	do	do	1916	10134	do	Argillaceous limestone.		2.70	.1	6.1				16.0	4				
Do	do	do	1916	10136	do	do		2.70	.1	5.5				12.7	4				
Hardin	Colesburg	Prosp	1945	70074	do	Argillaceous dolomite.		2.53	3.6		29.5	A	13,550					73.2	1½–⅜
Do	do	do	1945	70075	do	do		2.45	4.6		30.7	A	15,790		5			61.0	1½–⅜
Do	Elizabethtown	do	1924	26128	do	Argillaceous limestone.		2.46	1.8	6.2				14.7	8				
Do	do	do	1924	26129	do	Limestone		2.49	1.9	5.0				14.7	6				
Do	Fort Knox	do	1945	68312	do	do									8				
Do	do	do	1945	68313	do	do									4				
Do	do	do	1945	70072	do	Argillaceous limestone.		2.65	1.3		27.7	A	23,460		6			12.6	1½–⅜
Do	do	do	1945	70073	do	Limestone		2.56	2.4		28.3	A	21,240		5			26.7	1½–⅜
Do	Rineyville	do	1945	70078	do	do		2.67	.4		19.7	A	35,000		8			1.8	1½–⅜
Do	do	do	1945	70079	do	Argillaceous limestone.		2.60	1.8		21.0	A	22,700		7			35.8	1½–⅜
Do	do	do	1945	70080	do	Limestone		2.66	.7		23.0	A	33,400		6			1.6	1½–⅜
Henry	Eminence	Comm	1908	2452	do	do		2.64	.6	6.1									
Do	do	Local	1908	2453	do	do		2.69	.5	7.0									
Hopkins	Nortonville	Prosp	1907	2409	Slag	Blast furnace		2.85	.6	9.6				17.6	10				
Jefferson	Louisville	Local	1915	8335	Stone	Argillaceous dolomite.		2.65	2.3	5.0				8.3	6				
Do	do	Prosp	1915	8336	do	Argillaceous limestone.		2.70	.5	4.7				13.5	7				
Do	do	do	1915	8337	do	Limestone		2.70	.6	4.1				15.2	7				
Do	Louisville (Ohio River).	Comm	1919	14677	Gravel	QzSCG	1½			4.5		A							
Do	do	do	1922	21623	do	SDoDQC	1½			5.2		A							
Do	do	do	1934	40738	do	QzDiDoCQ	1½			3.2	26.0	A							
Do	Seatonsville	Prosp	1915	8338	Stone	Argillaceous limestone.		2.70	.7	5.3				13.2	7				

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

KENTUCKY—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Jefferson	Tucker	Comm	1911	5635	Stone	Dolomite		2.75	0.1	3.7				13.9	9				
Do	do	do	1912	6134	do	do		2.75	.9	3.4				15.7	11				
Do	do	do	1912	6135	do	Dolomitic marble		2.70	1.0	5.2				14.8	9				
Do	do	Local	1915	8334	do	Dolomite		2.65	1.1	5.1				16.2	11				
Jessamine	High Bridge	Comm	1922	21176	do	Limestone		2.69	.1	4.5				14.3	5				
Do	do	do	1922	21177	do	Dolomitic limestone.		2.71	1.0	3.2				13.7	8				
Do	Nicholasville	Prosp	1920	16637	do	Argillaceous limestone.		2.75	.7	7.0					6				
Do	do	do	1920	17257	do	Limestone		2.68	.7	5.3				14.0	5				
Johnson	Paintsville	do	1906	1654	do	Feldspathic sandstone.		2.65	1.0	2.1				16.7	10				
Kenton	Ludlow	Comm	1920	16932	Gravel	LDo(C)	2			7.0		A							
Knox	Heidrick	Prosp	1924	25987	Stone	Feldspathic sandstone.		2.48	2.9	6.8			10,930	12.0	5			U	1½–1
Do	do	do	1924	25988	do	do		2.52	2.2	6.2			15,020	13.3	6			U	1½–1
Do	do	do	1924	25989	do	do		2.45	2.6	7.2			11,210	14.7	5			U	1½–1
Laurel	East Bernstadt	do	1920	17061	do	do		2.30	3.2	9.9				.7	3				
Lincoln	Walnut Flat	Local	1931	34059	do	Siliceous limestone.		2.70	.7	4.7				11.7	8			U	1½–1
Do	do	do	1931	34113	do	do		2.70	.3	4.6				14.0	7			Q	1½–1
Do	do	do	1931	34114	do	do		2.70	.4	4.8				15.0	6			U	1½–1
Do	do	do	1931	34115	do	Argillaceous limestone.		2.72	.6	5.2				11.7	6			U	1½–1
Lyon	Kuttawa	Prosp	1901	457	do	Sandstone		2.40	5.5	17.8									
Do	Star Lime Works	Comm	1938	46154	do	Limestone					26.3	A							
Do	do	do	1938	46155	do	do					28.0	A							
Do	do	do	1938	46156	do	do					40.5	A							
McCracken	Paducah	do	1939	46805	Gravel	Chert	1½				21.0	A						12.5	2–#4
Madison	Berea	Prosp	1910	4919	Stone	Dolomite		2.80	.4	5.7				15.8	10				
Do	do	do	1910	4983	do	Limestone		2.65	.5	3.9				16.3	8				
Meade	Brandenburg	Local	1920	16778	do	Argillaceous limestone.		2.29	5.1	9.5				.0	5				
Do	Garnetsville	Prosp	1945	70081	do	Crystalline limestone.		2.63	.9		34.1	A	19,200		4			7.4	1½–⅜
Do	Guston	Local	1945	70082	do	Limestone		2.67	.4		22.1	A	29,900		7			2.2	1½–⅜
Do	Rock Haven	Prosp	1945	70076	do	Argillaceous limestone.		2.68	.6		21.3	A	39,850		11			15.2	1½–⅜
Do	do	do	1945	70077	do	do		2.67	.7		20.4	A	39,400		8			11.4	1½–⅜
Menifee	Wellington	Local	1923	24440	do	Sandstone		2.40	2.6	5.8									
Do	do	do	1923	24441	do	do		2.36	3.2	6.4									
Mercer	Harrodsburg	do	1920	17011	do	Crystalline limestone.		2.71	.2	8.1				8.0	4				
Do	do	do	1920	17658	do	Limestone		2.71	.1	6.0				16.7	5				
Montgomery.	Mount Sterling	Prosp	1913	7180	do	Crystalline limestone.		2.70	.3	6.6				11.0	6				
Do	do	do	1913	7181	do	do		2.70	.4	8.0				13.8	8				
Do	do	do	1913	7182	do	Siliceous limestone.		2.65	.8	5.0				14.2	11				
Do	do	do	1913	7183	do	do		2.65	.5					10.0	4				
Do	do	do	1913	7189	do	do		2.70	.5	4.2				13.0	9				
Do	do	do	1913	7190	do	do		2.65	.8	4.3				12.4	10				
Do	do	do	1913	7292	do	do		2.65	.6	3.6				15.3	9				
Do	do	do	1913	7293	do	Fossiliferous limestone.		2.70	.4	7.0				13.3	3				
Do	do	do	1914	7545	do	Siliceous limestone.		2.65	.8	3.9				13.0	9				
Do	do	do	1914	7546	do	Argillaceous limestone.		2.70	.6	6.3				8.5	6				
Ohio	Narrows	do	1905	1225	do	Limestone		2.70	.2	3.7				15.0	10				
Rockcastle	Livingston	do	1920	17073	do	Siliceous dolomite		2.72	1.3	3.4				13.0	12				
Do	Mount Vernon	Comm	1924	26100	do	Limestone				6.4								Q	1½–1
Do	do	do	1947	72621	do	do		2.70	.6		43.0	A						8.6	1½–#4
Do	Withers	do	1947	72622	do	do		2.71	.5		19.8	A						1.2	1½–#4
Rowan	Bluestone	do	1920	16313	do	Sandstone		2.36	3.5	5.8					11				
Do	Morehead	Prosp	1921	19599	do	Feldspathic sandstone.		2.36	3.6	5.4				3.3	7				

Russell	Jamestown	do	1919	14949	do	Fossiliferous limestone.		2.66	.7	6.0				18.3	10			
Todd	Elkton	do	1920	16416	do	Limestone		2.62	.4	5.2					7			
Trigg	Cerulean	Local	1909	3163	do	do		2.70	.4	4.4				15.5	5			
Do	do	do	1916	10451	do	Argillaceous limestone.		2.67	.3	4.7				14.2	6			

LOUISIANA

East Baton Rouge.	Baton Rouge	Comm	1943	61838	Gravel	Chert	1	2.54	1.1		17.4	B						
Evangeline	Turkey Creek	do	1921	19088	do	do	1½			5.4		A						
Natchitoches.	Natchitoches	Local	1920	16877	do	C(Q)	2			6.7		A						
Orleans	New Orleans	Prosp	1917	11241	Stone	Argillaceous sandstone.		2.05	8.9	19.1				14.7	6			
Do	do	Comm	1935	42575	Gravel	Chert	1½	2.56	1.2	2.8		B						
Do	do	do	1936	42626	do	do	1	2.54	1.5	3.4		B						
Do	do	do	1936	42796	do	do	1½	2.48	2.2	3.0		B						
Do	do	do	1936	42797	do	do	1½	2.48	2.0	4.2		B						
Do	do	do	1936	42798	do	do	1	2.48	2.1	4.2		B						
Do	do	do	1936	42799	do	C(Q)	1½	2.50	1.9	4.1		B						
Do	do	do	1936	42800	do	C(Q)	1	2.48	2.1	4.2		B						
Do	do	do	1936	42801	do	C(Q)	1½	2.49	2.0	4.3		B						
Ouachita	West Monroe	do	1920	17734	do	Chert	1½			6.3		A						
Do	do	do	1921	18147	do	C(Q)	1½			6.3		A						
Do	do	do	1921	18676	do	Chert	1½			5.4		B						
Rapides	Alexandria	do	1921	20587	do	C(Q)	2			7.4		A						
Do	do	do	1921	20590	do	C(Q)	2			7.7		A						
Do	De Lode Bluffs	Prosp	1910	4316	Stone	Quartzite		2.35	1.0	3.8				15.3	8			
Do	Lecompte	Comm	1920	17256	Gravel	Chert	1½			5.8		A						
Do	do	do	1921	18681	do	do	1½			4.8		A						
Do	Valde Rouge	do	1921	17939	do	do	1½			4.5		A						
Do	do	do	1921	18017	do	CQ	2			4.6		A						
Sabine	Florien	Prosp	1921	18145	Stone	Sandstone		2.16	4.7	7.0				16.3	9			
Do	Many	do	1913	6664	do	Siliceous limestone.		2.65	1.3	4.7				12.1	10			
Tangipahoa.	Amite	Comm	1943	61837	Gravel	Chert	1	2.51	1.6		17.5	B						
Do	Kentwood	Prosp	1913	7024	Stone	Sandstone		2.45	2.4	30.3				14.7	2			
Winn	Atlanta	do	1924	25173	do	Siliceous limestone.		2.58	1.1	3.7				18.0	9		Q	1½–1
Do	Winnfield	Comm	1909	3736	do	Marble		2.70	.2	7.2				10.7	5			
Do	do	do	1924	24854	do	do		2.65	.3	10.4				9.0	3			
Do	do	do	1925	27523	do	do		2.68	.2	9.0				12.0	5		Q	1½–1
Do	do	do	1928	31276	do	Limestone		2.66	.8	8.4							S	1½–1
Do	do	do	1932	34683	do	Marble				7.6								
Do	do	do	1932	34684	do	do				7.0								

MAINE

Androscoggin.	Auburn	Comm	1917	11483	Stone	Biotite gneiss		2.73	0.3	4.4				18.0	8			
Do	Leeds Junction	do	1934	40187	Gravel	GSScQ	2			8.4		A						
Do	Rumford Junction.	Prosp	1913	6467	Stone	Biotite gneiss		2.70	.3	5.7				17.8	7			
Do	do	do	1913	6469	do	do		2.75	.3	5.4								
Cumberland.	Brunswick	do	1914	7574	do	do		2.75	.2	6.9				18.0	7			
Do	do	do	1914	7575	do	Granite		2.60	.3	7.0				18.1	6			
Do	do	do	1914	7576	do	do		2.60	.3	3.9				18.7	7			
Do	Cumberland	do	1914	7569	do	Biotite granite		2.70	.2	3.8				17.8	10			
Do	do	do	1914	7649	do	Altered diabase		2.95	.2	2.5				18.4	18			
Do	do	do	1914	8031	do	Biotite gneiss		2.75	.5	10.7				16.2	5			
Do	Deering Junction.	do	1909	3433	do	Granite gneiss		2.65	.2	3.5				18.7	11			
Do	do	do	1910	4411	do	Gneiss		2.70	.4	3.5				17.3	12			
Do	Falmouth	do	1914	7566	do	Granite		2.60	.2	4.9				18.9	7			
Do	do	do	1914	7567	do	Biotite granite		2.95	.2	3.1				17.9	14			
Do	do	do	1914	7568	do	Granite		2.60	.3	4.3				18.7	9			
Do	do	do	1914	7577	do	Diabase		3.00	.1	3.0				19.0	24			
Do	Freeport	do	1914	7570	do	Granite		2.65	.2	3.4				18.6	14			
Do	do	do	1914	7571	do	do		2.60	.2	4.5				18.8	8			
Do	do	do	1914	7572	do	Micaceous quartzite.		2.70	.2	6.0				18.1	7			
Do	do	do	1914	7573	do	Biotite gneiss		2.70	.4	6.2				17.7	7			
Do	Harpswell Center.	do	1907	2310	do	Diabase		3.00	.2	2.1				18.4	30			
Do	Portland	do	1907	2235	do	Quartzite schist		2.75	.2	2.6				17.7	14			

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MAINE—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Cumberland.	Portland	Prosp	1908	2958	Stone	Gneiss		2.65	0.4					17.8	12				
Do	do	do	1914	7552	do	Altered diabase		2.85	.4	3.4				16.6	11				
Do	do	Comm	1914	7612	do	Amphibole quartzite.		2.75	.2	2.5				18.4	10				
Do	do	Prosp	1918	12755	do	Sericite schist		2.73	.1	4.1				17.3	14				
Do	do	do	1918	12756	do	Granite		2.65	.1	3.8				18.0	10				
Do	do	Comm	1941	55423	do	do		2.61	.5		37.1	B	33,800		8				
Do	Standish	Prosp	1907	2233	do	Biotite schist		2.75	.2	4.0				10.8	7				
Do	Westbrook	do	1912	5766	do	do		2.75	.2	4.3				17.0	7				
Do	do	do	1923	24349	do	Schistose quartzite		2.65	.6	6.0				18.3	4				
Do	Yarmouth	do	1911	5310	do	Basalt		2.95	.1	3.0				18.1	29				
Do	do	do	1911	5587	do	Biotite gneiss		2.75	.1	4.0				18.7	10				
Do	do	do	1913	6990	do	Altered diabase porphyry.		2.95	.0	2.4				16.8	25				
Do	do	do	1914	7578	do	Granite		2.65	.3	6.3				18.8	6				
Do	do	do	1915	8505	do	do		2.65	.2	3.4				19.0	6				
Do	do	Comm	1915	9093	do	Biotite schist		2.75	.4	6.1				18.0	8				
Do	do	do	1915	9094	do	Altered diabase porphyry.		2.95	.2	2.3				18.3	18				
Franklin	North Jay	do	1907	2313	do	Granite		2.65	.2	2.3									
Do	do	do	1916	10219	do	do		2.62	.5	2.7			21,260	19.3	7				
Do	do	do	1917	11416	do	Biotite granite							25,090	17.3	7				
Do	do	do	1917	12283	do	Granite		2.61	.4	4.4				18.8	11				
Do	do	do	1918	13848	do	do				4.4				18.0	7				
Do	do	do	1925	27373	do	do		2.64	.3	2.8				18.7	10				
Hancock	Bar Harbor	Prosp	1928	30229	do	Aplitic granite		2.67	.2	2.2				18.7	26				
Do	do	do	1928	30230	do	Granite		2.63	.2	4.6				18.7	10				
Do	do	do	1931	33280	do	do		2.61	.8	4.6				18.7	7				
Do	do	do	1907	33281	do	do		2.57	1.1	4.6				18.7	6				
Do	do	Local	1907	33282	do	Micaceous quartzite.		2.74	.3	2.6				18.3	8				
Do	do	Prosp	1907	33999	do	Granite		2.59	1.1	4.2				18.7	8				
Do	do	do	1935	40929	do	do		2.64	.4	2.3					14				
Do	Brooksville	do	1907	2304	do	Altered andesite		2.95	.1	2.1				16.5	15				
Do	McKinley	do	1916	10988	do	Granite		2.65	.1				28,650	19.3	18				
Do	do	do	1916	10989	do	do		2.61	.2				26,500	18.7	13				
Do	do	do	1916	10990	do	do		2.63	.3				32,450	19.3	16				
Do	Mount Desert	Comm	1916	9997	do	do		2.65	.1	3.4			19,770	19.7	9				
Do	do	do	1916	10233	do	do		2.60	.6	4.1			19,220	18.7	8				
Do	do	do	1916	10234	do	do		2.57	.4	3.2			24,700	18.7	12				
Do	do	do	1919	13862	do	do				3.7				18.7	10				
Do	do	do	1920	16304	do	do		2.63	.3	3.3				17.3	12				
Do	South Brooksville.	Prosp	1907	2303	do	Altered rhyolite		2.80	.4	3.3				18.1	8				
Do	Sullivan	Comm	1923	24119	do	Granite		2.64	.3	5.4			29,900	18.7	10				
Do	Swans Island	do	1914	7438	do	Biotite granite		2.60	.3	5.0			18,400	18.8	8				
Do	do	do	1920	17439	do	do		2.61	.3	3.4			36,030	18.7	13				
Do	Winter Harbor	Prosp	1932	34601	do	Graphic granite		2.60	.7	2.6				18.7	15				
Do	do	do	1935	40928	do	Granite		2.64	.2	3.2					11				
Kennebec	Hallowell	Comm	1907	2312	do	do		2.55	1.1	3.1				18.7	9				
Do	do	do	1917	11327	do	do		2.59	.5	3.0			25,380	18.7	8				
Do	do	do	1917	11486	do	do		2.62	.4	3.2			27,760	18.7	7				
Do	do	do	1922	21117	do	do		2.63	.4	3.7			27,720	18.3	8				
Do	do	do	1922	22307	do	do				2.7									
Do	do	do	1922	22506	do	do				2.7									
Do	do	do	1923	22799	do	Muscovite granite		2.65	.4	3.3			26,780	18.7	9				
Do	Litchfield	Prosp	1917	11408	do	Biotite gneiss		2.69	2.4	4.0				19.3	6				
Do	Monmouth	Comm	1946	72345	Gravel	GScSyQz	2	2.70	.8		33.8	A						1.6	2–3/8
Do	Winslow	Prosp	1917	11468	Stone	Mica schist		2.79	.3	4.1				15.0	8				
Knox	Camden	do	1907	2302	do	Feldspathic quartzite.		2.70	.1	2.7				18.8	8				
Do	do	Comm	1917	11215	do	Micaceous quartzite		2.77	.2	3.4			18,040	16.7	11				
Do	Camden Hills	Prosp	1937	43178	do	Argillite				3.3	14.9	A							
Do	Clark Island	Comm	1920	17022	do	Biotite granite		2.70	.4	2.6			24,920	19.0	11				
Do	do	do	1920	17023	do	do		2.69	.4	2.6			22,320	18.7	12				

Do	do	do	1920	17024	do	do		2.71	.3	2.5			30,820	18.0	12						
Do	do	do	1925	27559	do	Granite		2.70	.2	2.8			22,240	18.7	10						
Do	Longcove	Local	1907	2308	do	Hornblende gabbro.		3.00	.2	2.8				17.8	12						
Do	do	Comm	1912	5915	do	Biotite granite		2.65	.3	2.2				18.7	12						
Do	do	do	1914	7507	do	Granite		2.65	.1	2.8				19.3	9						
Do	do	do	1916	9996	do	do		2.70	.1	3.3			17,540	19.2	10						
Do	do	do	1916	10249	do	Biotite granite		2.65	.5	3.0			22,500	19.3	13						
Do	do	do	1916	10250	do	Granite		2.66	.5	3.5			22,330	19.3	8						
Do	do	do	1919	13868	do	Biotite granite				3.4				18.7	10						
Do	do	do	1919	13869	do	do				3.3				18.7	10						
Do	North Haven	Prosp	1907	2305	do	Altered andesite		2.95	.2	2.7				17.6	12						
Do	do	do	1907	2306	do	Fragmental rhyolite.		2.70	.3	3.2				18.0	7						
Do	Rockland	Local	1903	784	do	Hornblende quartzite.		2.80	.1	2.6											
Do	do	Prosp	1907	2300	do	Feldspathic quartzite.		2.65	.3	2.6				18.8	20						
Do	do	Comm	1907	2301	do	Marble		2.70	.2	5.6				10.5	5						
Do	do	do	1915	9706	do	do		2.80	.2	4.3				17.0	4						
Do	Rockport	Prosp	1895	53	do	Limestone				4.9											
Do	do	do	1895	54	do	do				4.5											
Do	do	do	1895	55	do	Quartzite				2.7											
Do	do	do	1897	123	do	Biotite schist				4.2											
Do	do	Comm	1917	11411	do	Granite							31,580	18.0	8						
Do	Saint George	do	1915	8768	do	do							22,800		9						
Do	do	do	1915	9781	do	do							18,780		12						
Do	do	do	1916	9865	do	do							17,150	18.8	9						
Do	do	do	1916	10366	do	do							27,050								
Do	do	do	1917	11418	do	Biotite granite							25,180	18.0	10						
Do	do	do	1918	13846	do	Granite				3.1				18.7	10						
Do	do	do	1919	13866	do	Biotite granite				3.4				18.0	10						
Do	do	do	1921	19144	do	do		2.65	.4	3.1				19.0	13						
Do	Tenant's Harbor.	do	1941	55428	do	Granite		2.68	.4				35,070		9						
Do	do	do	1941	55751	do	do					24.7	B									
Do	Vinalhaven	do	1907	2307	do	Olivine diabase		3.00	.2	2.3				18.2	12						
Do	do	do	1914	7435	do	Granite		2.65	.3	3.4				19.3	12						
Do	do	do	1915	8745	do	do		2.65	.2	2.9				18.8	10						
Do	do	do	1915	8769	do	do							20,930		10						
Do	do	do	1915	9445	do	Biotite granite		2.65	.2	3.1			21,220	19.0	13						
Do	do	do	1916	10019	do	do		2.65	.2	3.1			21,650	19.3	14						
Do	do	do	1917	11414	do	do							32,090	19.3	11						
Do	do	do	1918	13854	do	Granite				3.3				18.7	13						
Do	do	do	1918	13855	do	do				3.5				18.0	14						
Do	do	do	1921	19212	do	Biotite granite		2.65	.3	3.4			33,480	19.0	11						
Do	do	Prosp	1921	20946	do	do		2.61	.2	2.4			34,450	18.7	14						
Lincoln	Waldoboro	do	1925	27513	do	Granite		2.64	.3	2.8			29,110	18.7	14						
Penobscot	Corinna	do	1922	21806	do	Quartzite				3.3											
Do	Hampden	Comm	1942	57564	Gravel	ScQS		2.67	.8		19.7	B									
Do	Orono	Local	1922	22621	do	Diabase	3			1.4		A									
Do	Stillwater	Comm	1942	57565	do	SScGRQz		2.64	.8		17.7	B									
Sagadahoc	Bowdoinham	Prosp	1917	11406	Stone	Biotite gneiss		2.64	.5	9.5				17.3	3						
Do	do	do	1917	11421	do	Gneissoid granite		2.54	1.0	7.1											
Do	do	do	1917	11422	do	Biotite gneiss		2.61	1.1	12.4											
Do	Richmond	do	1917	11404	do	do		2.61	1.1	11.4				17.0	5						
Do	do	do	1917	11405	do	Granite		2.62	.5	4.1				18.0	5						
Do	do	do	1917	11407	do	Biotite gneiss		2.73	.8	8.4				17.3	3						
Do	Topsham	Local	1907	2311	do	Pegmatite		2.65	.3	10.7											
Do	Woolwich	Prosp	1907	2309	do	Gneissoid granite		2.85	.2	4.1				18.8	8						
Waldo	Frankfort	Comm	1914	7439	do	Biotite granite		2.65	.2	5.2			20,600	18.8	6						
Washington	Calais	Local	1922	22281	do	do				1.9											
Do	Cutler	Prosp	1944	63522	Gravel	Rhyolite					9.1	B									
Do	Eastport	do	1907	2285	Stone	Altered diabase		2.85	.4	2.0				18.2	20						
Do	Machias	do	1903	866	do	Diabase		2.95	.2	2.9											
Do	do	do	1907	2236	do	Altered diabase		2.90	.1	2.8				16.9	11						
Do	do	do	1907	2237	do	do		2.90	.3	1.6				17.9	27						
Do	Starboard	do	1942	57566	Gravel	Rhyolite	4	2.69	.2		9.0	B									
York	Alfred	do	1911	5724	Stone	Hypersthene granite.		2.90	.2	4.1				17.7	9						
Do	Kennebunk	do	1910	4228	do	Diabase		3.00	.2	1.8				18.8	37						
Do	Kittery	do	1907	2231	do	Gabbro		2.85	.6	3.2				17.8	11						
Do	do	do	1907	2232	do	Quartzite schist		2.75	.3	2.3				16.5	18						
Do	do	do	1910	4229	do	Calcareous sandstone.		2.80	.1	3.4				18.0	22						
Do	Ogunquit	do	1904	1040	do	Altered diabase		3.00	.0	2.3				18.5	36						
Do	Saco	do	1907	2229	do	Diabase porphyry		2.95	.2	2.6				16.2	11						
Do	do	do	1907	2234	do	Quartzite		2.80	.2	2.5				18.5	53						
Do	Wells Beach	do	1907	2230	do	Gabbroitic diabase		2.95	.3	2.0				17.5	17						
Do	York Harbor	do	1912	5906	do	Quartzite		2.75	.1					19.2	58						

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MARYLAND

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Allegany	Corriganville	Comm	1935	40895	Stone	Calcareous sandstone.				4.2					5				
Do	do	do	1937	44365	do					3.5	21.0	A							
Do	do	do	1937	44607	do	Sandstone					81.8	B			7				
Do	do	do	1937	44608	do	Limestone				5.2	23.4	B							
Do	do	do	1945	69649	do	Crystalline limestone.					15.0	A			12				
Do	do	do	1945	69650	do	do					21.7	A							
Do	Cresaptown	Local	1935	40882	do					3.7	25.8	A							
Do	Cumberland	Prosp	1901	427	do	Sandstone		2.00	7.7	8.2					8				
Do	do	do	1901	428	do	Calcareous shale		2.70	1.1	16.2									
Do	do	do	1901	429	do	Ferruginous sandstone.		2.70	1.2	11.7									
Do	do	do	1901	430	do	do		2.70	1.0	13.4									
Do	do	do	1910	4954	do	Limestone		2.70	.1	4.0				16.5	12				
Do	do	Comm	1934	40580	do	Calcareous sandstone.									8				
Do	do	do	1935	40894	do					3.5	72.9	A			7				
Do	do	Local	1935	40915	do					3.1					9				
Do	do	do	1937	44362	do	Argillaceous limestone.				5.4	26.5	A			5				
Do	do	Comm	1945	69646	do	Crystalline limestone.					24.4	A							
Do	do	do	1945	69647	do	do					27.8	A							
Do	do	do	1945	69648	do	Argillaceous limestone.					25.6	A							
Do	do	do	1945	69651	Gravel	SLQzF					41.8	A							
Do	Dawson	do	1935	40910	Stone					3.5					8				
Do	Mount Savage	do	1935	40883	do					2.6	23.8	A			9				
Do	Mount Savage Junction.	Prosp	1911	5611	do	Siliceous limestone.		2.65	.1	3.0			34,930	17.5	23				
Anne Arundel	Patapsco	Comm	1938	44970	Gravel	QQzGn					37.8	A							
Do	Patuxent	do	1943	61614	do	QQzS	¾	2.62	.4		33.1	B							
Do	do	do	1943	61748	do	QQzS	¾	2.62	.4		32.5	B							
Baltimore	Ashland	Prosp	1912	5818	Slag	Blast furnace		2.85	.3	4.0									
Do	do	Comm	1920	16850	do	do		2.59	1.3	6.7									
Do	do	do	1920	16851	do	do		2.21	7.2	19.0				15.3	6				
Do	do	do	1920	16852	do	do		2.66	2.1	6.5					6				
Do	do	do	1920	16853	do	do		2.80	.3	4.6									
Do	Big Gunpowder	Prosp	1908	2544	Stone	Hornblende schist		3.15	.1	1.9				17.3	15				
Do	do	do	1908	2992	do	do		3.05	.2	3.6				18.1	16				
Do	Blue Mount	Comm	1933	35000	do	Serpentine				6.1									
Do	do	do	1935	40821	do	do				5.1	21.5	A			5				
Do	do	do	1935	43094	do	do				5.1	21.6	A							
Do	do	do	1937	44346	do	do					17.7	A							
Do	do	do	1938	46010	do	Amphibolite				6.4					7				
Do	do	do	1938	46050	do	Serpentine		2.59	.6		20.0	A							
Do	do	do	1941	53425	do	do					18.8	D							
Do	do	do	1941	53426	do	do					20.0	C							
Do	do	do	1941	53427	do	do					18.6	C							
Do	do	do	1941	53428	do	do					18.2	C							
Do	do	do	1943	61615	do	do					15.7	B							
Do	Butler	Local	1921	20558	do	Muscovite gneiss		2.60	1.0										
Do	do	do	1923	23050	do	Quartzite		2.69	.3	5.1				18.7	8				
Do	do	Comm	1939	46496	do	Granite gneiss		2.67	.1	4.1				18.7	9				
Do	Cockeysville	Prosp	1921	19028	do	Marble					38.6	A			9				
Do	do	Comm	1927	29224	do	do		2.61	.1	5.6				14.0	6				
Do	Cowenton	do	1935	40810	do	Amphibolite		2.71	.1	8.4								S	1½-1
Do	do	do	1937	44361	do	do		3.22	.1	2.4	36.8	A			16				
Do	do	do	1942	55821	do	do				1.8	27.2	A			20				
Do	Granite	do	1910	4104	do	Granite		2.70	.3	2.4	21.6	B	48,900						
Do	do	do	1915	8351	do	Biotite granite		2.70	.2	3.0				18.5	10				
Do	do	do	1937	44661	do	do				4.2			16,700	18.7	9				
Do	do	do	1937	44662	do	do				9.3			14,500		7			S	1½-1
Do	Gwynns Falls	do	1935	40809	do	Granite gneiss		2.66	.3	2.9	44.6	A			5			Q	1½-1
Do	do	do	1937	44372	do	do				2.5	34.0	A			11				
															18				

Do	do	do	1938	46135	do	Gneiss					32.5	A							
Do	do	do	1939	46428	do	do					31.4	A							
Do	Kingsville	Local	1918	13669	do	Amphibolite		3.06	.2	4.0				17.3	10				
Do	Loreley	Prosp	1912	5976	do	Augite diorite		3.05	.1	2.4				17.8	10				
Do	Loch Raven	Local	1922	21146	do	Dolomitic marble		2.85	.2	7.4				11.7	4				
Do	Phoenix	Prosp	1924	25101	do	Gneissoid granite		2.77	.5	6.2					8				
Do	do	do	1924	25102	do	do		2.63	1.6	25.6					5				
Do	Powhatan	do	1904	873	do	Diabase				2.2					12				
Do	Reckford	Comm	1935	40823	do	Amphibolite				1.6	29.5	A			17				
Do	do	do	1937	44370	do	do				1.9	18.7	A			16				
Do	Rockdale	Prosp	1932	34594	do	do		3.02	.1	2.7				19.3	17				
Do	do	do	1932	34595	do	do		3.07	.1	2.2				19.3	19				
Do	Ruxton	do	1907	2206	do	Biotite gneiss		2.80	.3	3.8				16.3	8				
Do	Sparks	Comm	1905	1328	do	do		2.85	.1	4.0				17.7	11				
Do	do	Local	1921	20116	do	do		2.71	.7	6.9				18.3	5				
Do	do	do	1921	20167	do	Biotite granite		2.72	.7	8.4				17.0	6				
Do	Sparrows Point	Comm	1927	29689	Slag	Blast furnace		1.75	4.4	18.4									
Do	do	do	1929	31280	do	do		1.83	6.4	22.5									
Do	do	do	1930	33124	do	do		2.40	2.6	9.3									
Do	do	do	1931	34052	do	do										72	3–1		
Do	do	do	1931	34053	do	do										76	3–1		
Do	do	do	1931	34054	do	do										71	2½–1		
Do	do	do	1931	34055	do	do										74	3–1		
Do	do	do	1931	34529	do	do										70	3–¾		
Do	do	do	1931	34534	do	do										76	¾–¼		
Do	do	do	1931	34553	do	do				7.7									
Do	do	do	1932	34688	do	do		2.31	3.0	5.8									
Do	do	do	1934	40124	do	do					39.5	B							
Do	do	do	1934	40676	do	do					32.4	A							
Do	do	do	1934	40781	do	do					37.5	B							
Do	do	do	1937	44320	do	do					37.7	A				75			
Do	do	do	1940	50260	do	do					31.5	A							
Do	do	do	1944	66365	do	do					40.8	A				65	2–1		
Do	do	do	1947	73138	do	do		2.73	5.0		31.5	B							
Do	do	do	1947	73139	do	do					31.4	B							
Do	do	do	1947	74049	do	do					33.1	C				74	¾–#8		
Do	Texas	Prosp	1913	6867	Stone	Siliceous marble		2.70	.2	27.0				7.5	3				
Do	do	do	1913	6868	do	do		2.85	.1	18.8				4.5	2				
Do	do	do	1913	6869	do	do		2.75	.0	10.5				12.3	3				
Do	do	do	1921	18639	do	Marble		2.76	.1	7.6				14.0	6				
Do	do	Comm	1933	34780	do	Siliceous marble				4.9	52.8	A							
Do	do	do	1933	34925	do	Dolomitic marble		2.83	.2	5.4				15.0	5				
Do	do	do	1934	40113	do	do		2.79	.2	4.1									
Do	do	do	1934	40114	do	do					47.0	A							
Do	do	do	1934	40299	do	do									4				
Do	do	do	1935	40822	do	do				5.2	42.1	A			5				
Do	do	do	1937	44333	do	do				2.7	47.0	A			5				
Do	do	do	1938	46247	do	Marble					46.2	A							
Do	do	do	1943	61618	do	do		2.82	.3		47.2	B							
Do	do	do	1944	66256	do	do		2.66	.3		58.7	C				98	½–#4		
Do	Towson	Prosp	1908	3062	do	Dolomitic marble		2.85	.1	6.3				11.0	5				
Do	do	Local	1919	14646	do	Marble		2.81	.2	9.9				11.0	4				
Do	do	Comm	1919	15387	do	do		2.76	.2	5.4									
Do	do	Local	1921	19508	do	Micaceous marble		2.80	.1	4.2				16.0	8				
Do	do	Comm	1921	20114	do	Gneissoid granite		2.65	.4	4.9				19.3	10				
Do	White Hall	Prosp	1909	3187	do	Peridotite [6]		2.65	.4	3.0				15.0	12				
Do	do	Comm	1943	62112	Gravel	QQz(S)	1	2.65	.3		51.8	B							
Do	White Marsh	do	1937	44660	do	QQzGSc	2½				42.6	A							
Do	do	do	1947	72752	do	QQzG	2				38.7	A						3.3	2–½
Do	do	do	1947	72753	do	QQzG	2											.9	2–½
Do	do	do	1947	72813	do			2.63	.3		38.1	A						1.6	1½–#4
Do	do	do	1947	72818	do			2.63	.3									8.2	2–#4
Do	do	do	1947	73994	do	QS		2.63	.4		41.6	A						2.5	1½–#4
Do	do	do	1949	77282	do	QQzS	2	2.63	.4		37.1	A						1.7	2–#4
Do	Woodstock	do	1910	4105	Stone	Granite		2.65	.2	4.5				18.7	10				
	Baltimore	Local	1905	1339	do	Granite gneiss		2.65	.2	2.9				18.2	16				
	do	Prosp	1919	14167	Slag	Copper smelter		3.27	.5	5.5				17.3	13				
	do	do	1919	14179	do	do		3.29	.5	5.2				15.3	11				
	do	do	1919	14193	do	do		3.20	.4	3.1									
	do	Comm	1921	20319	Stone	Feldspathic quartzite.		2.71	.1					18.7	12				
	do	do	1928	30211	Gravel	QScGn		2.62	.2	15.0		A							
	do	do	1932	34701	do					18.6	53.7	A							
	do	do	1933	34926	Stone	Micaceous marble		2.72	.2	4.6				17.0	6				
	do	do	1935	40811	do	Mica gneiss		2.74	.2	3.9	37.9	A			5				
	do	do	1935	42416	Gravel	Quartz					40.0	A							
	do	do	1935	42417	do	do					42.7	A							
	do	do	1937	44371	Stone	Biotite syenite				4.0	39.1	A			5				
	do	do	1943	61616	Gravel	QQzG(S)	1	2.62	.5		47.8	B							
	do	do	1943	62117	Stone	Augite diorite		3.04	.4		20.4	B							

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MARYLAND—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
	Baltimore (Bare Hills).	Comm	1917	11556	Stone	Serpentine		2.59	0.6	7.7				12.3	5				
	Baltimore (Rapseburg).	do	1917	11335	do	Hornblende schist		2.98	.2	3.5				17.3	15				
	do	do	1917	11336	do	Hornblende gneiss		2.65	.5	6.7				15.0	7				
	Baltimore (Woodberry).	do	1935	40812	do	Amphibolite		3.14	.1	2.8	21.4	A			13				
	do	do	1943	61617	do	do		3.07	.4		13.7	B							
	do	do	1943	61682	do	do		3.06	.4		18.6	B							
Caroline	Federalsburg	do	1938	46056	Gravel	QC		2.55	1.1		41.1	A							
Carroll	Harney	do	1935	40960	Stone	Sandstone				2.6	24.7	A			21				
Do	do	do	1935	40964	do	do				2.9					20				
Do	Taneytown	Local	1934	40588	do	Argillaceous sandstone.		2.72	.9	3.3					12				
Do	do	do	1934	40591	do	Siliceous slate		2.74	.9	4.8									
Do	Union Bridge	Comm	1935	40845	do					5.0	26.5	A			5				
Do	do	do	1937	44368	do	Dolomitic marble				10.4	25.4	A			6				
Do	Wakefield	do	1935	40844	do	Marble				3.9	35.6	A			6				
Do	do	do	1937	44373	do	do				4.1	34.6	A			6				
Cecil	Conowingo	Prosp	1913	7291	do	Hypersthene diabase.		3.00	.3	2.6				18.4	8				
Do	Elkton	Comm	1930	33238	Gravel	QSQzC	2			21.5		A							
Do	do	do	1938	44837	do						51.9	A							
Do	do	do	1938	46057	do	Quartz		2.60	.5		45.9	A							
Do	North East	do	1919	13994	do	Quartz	2			27.0		A							
Do	do	do	1919	13995	do	do	2			16.1		A							
Do	do	do	1938	46055	do	do		2.62	.3		50.3	A							
Do	do	do	1943	62113	do	QQz(Gn)	1	2.64	.2		55.3	B							
Do	Port Deposit	do	1909	3459	Stone	Granite gneiss		2.70	.1	2.0				18.7	10				
Do	do	Prosp	1910	4673	do	Hornblende gneiss		3.05	.1	3.5									
Do	do	Comm	1913	6671	do	Quartzite		2.85	.2	2.0				18.9	24				
Do	do	do	1915	8420	do	Hornblende schist		2.75	.2	2.2				19.2	9				
Do	do	do	1917	12171	do	Granite gneiss		2.70	.2					19.3	12				
Do	do	do	1917	12552	do	Hornblende gneiss		2.91	.1	2.3				17.3	10				
Do	do	do	1918	12802	do	Hornblende schist		2.72	.1	2.8				17.3	17				
Do	do	do	1921	20318	do	Biotite gneiss		2.61	.4					18.3	9				
Do	do	Local	1921	20809	Gravel	QS	2½			30.5		A							
Do	do	Comm	1935	40840	Stone					3.2	31.3	A			10				
Do	do	do	1935	42080	do	Amphibolite				2.1					25				
Do	do	do	1935	42467	do	Gneissoid granite				3.2					8				
Do	do	do	1937	44724	do	Granite gneiss		2.68	.3	3.4			19, 260		8			S	1½–1
Do	do	do	1940	50251	Gravel	QQzS					51.0	A							
Do	do	do	1940	50332	do	do					52.0	B							
Do	Rising Sun	Prosp	1919	15161	Stone	Hypersthene granite.		2.95	1.1					18.0	10				
Charles	Indian Head	Local	1944	66300	Gravel	QQzC	1½				36.3	A							
Do	do	do	1945	67670	do	QQz	1½	2.57	.8		37.6	A							
Do	Mason Springs	do	1943	60842	do	QQzC	1½				39.3	A							
Do	Pomenky	do	1948	75594	do	Q(CS)	2				43.5	A							
Frederick	Catoctin	do	1928	30748	Stone	Dolomite				4.3									
Do	Emmitsburg	do	1934	40589	do	Siliceous slate		2.66	.9	4.4					8				
Do	do	do	1934	40590	do	do		2.50	2.8	4.1					10				
Do	do	do	1934	40592	do	do		2.37	4.3	5.6					12				
Do	Frederick	do	1901	439	do	Argillaceous limestone.		2.60	.1	5.9									
Do	do	do	1901	487	do	Limestone		2.70	.1	6.0									
Do	do	Comm	1905	1314	do	do		2.75	.1	2.8				14.6	12				
Do	do	do	1909	3836	do	do		2.70	.2	3.3									
Do	do	do	1910	4884	do	do		2.80	.1	4.1			17, 580	10.7	16				
Do	do	do	1911	5688	do	Dolomite		2.80	.1	3.1				16.3	15				
Do	do	do	1916	10105	do	Limestone		2.75		3.0				16.0	5				
Do	do	do	1920	16196	do	Siliceous limestone.		2.71	.2	2.9				16.7	11				
Do	do	do	1923	22767	do	do		2.71	.1	2.5				17.7	17				
Do	do	do	1923	24409	do	Siliceous dolomite				4.2									
Do	do	do	1925	27414	do	Siliceous limestone.		2.74	.0					18.7	20				

Do	do	do	1925	27415	do	Limestone		2.83	.0					14.7	3			
Do	do	do	1925	27416	do	do		2.74	.1					13.3	5			
Do	do	do	1926	28175	do	Siliceous limestone.		2.72	.1								S	1½–1
Do	do	do	1928	30153	do	do		2.75	.0	3.0								
Do	do	do	1935	40849	do	Limestone				3.5	22.2	A			11			
Do	do	do	1935	40854	do	do				4.1	22.8	A			9			
Do	do	do	1937	44203	do	Siliceous dolomite					22.6	A						
Do	do	do	1947	73203	do	Limestone		2.77	.4		18.0	B						
Do	do	do	1947	73206	do	do					17.7	B						
Do	do	do	1949	78084	do	do		2.75	.1						7		40.5	2½–1½
Do	Le Gore	do	1935	40958	do	do				3.5	25.8	A			8			
Do	Lime Kiln	do	1918	12930	do	Argillaceous limestone.		2.75	.1	2.6								
Do	do	do	1921	19692	do	Siliceous limestone.		2.72	.1	4.1				16.0	6			
Do	do	do	1926	28685	do	Quartzite		2.73	.3	2.4				18.0	26			
Do	New Market	Prosp	1901	343	do	Dolomite		2.85	.1	4.5								
Do	Point of Rocks	do	1911	5348	do	Diabase		3.05	.1	1.9				18.6	46			
Do	Sabillasville	Comm	1935	40957	do	Andesite				4.6	23.0	A			10			
Do	do	do	1937	44367	do	do				3.7					10			
Do	Washington Junction.	Prosp	1908	2473	do	Limestone		2.80	.1	3.9				15.7	7			
Do	do	do	1908	2474	do	Diabase		3.00	.?	1.1				18.8	21			
Do	Woodsboro	Comm	1935	40961	do	Limestone				4.1	32.5	A			5			
Do	do	do	1937	44366	do	do				3.8	24.3	A			5			
Garrett	Bloomington	Prosp	1909	3134	do	Feldspathic sandstone.		2.60	.5	3.7				18.8	8			
Do	Grantsville	Comm	1932	34741	do	Sandstone									7			
Do	do	do	1935	40912	do	do				3.9	46.7	A			7			
Do	do	do	1935	40914	do	do				4.0	38.8	A			8			
Do	do	do	1937	44363	do	do				3.7					11			
Do	do	do	1937	44364	do	do				4.0	44.8	A			10			
Do	Guard	Prosp	1907	2227	do	Limestone		2.70	.3	3.7				15.3	4			
Do	Sines	do	1935	40963	do					4.3					9			
Harford	Aberdeen	Comm	1937	44547	Gravel	Quartz	1½				48.0	A						
Do	Bel Air	do	1917	12360	Stone	Gabbroitic diabase.		3.03	.1	2.6				18.0	19			
Do	Churchville	do	1935	40846	do					3.2	38.7	A			11			
Do	do	do	1937	44369	do	Micaceous quartzite.				3.1	27.4	A			10			
Do	do	do	1938	46190	do	Mica schist					27.2	B						
Do	do	do	1943	61645	do	Hornblende schist		2.80	.8									
Do	Havre de Grace	do	1908	2668	do	do		2.95	.3	3.3				17.8	19			
Do	do	Local	1908	2991	do	do		2.90	.1	2.0				18.4	20			
Do	do	do	1909	3407	do	Diorite		2.90	.3	2.1				18.9	27			
Do	do	Prosp	1909	3408	do	Gneissoid granite		2.65	.8	4.2				18.5	12			
Do	do	Local	1909	3409	do	Quartz-hornblende schist.		2.75	.2	2.2				18.6	19			
Do	do	Comm	1909	3441	do	Granite gneiss		2.70	.2	3.0				18.6	16			
Do	do	Local	1909	3442	do	Diorite		3.10	.2	2.5				18.5	23			
Do	do	Comm	1909	3443	do	Hornblende schist		2.90	.1	3.1				17.3	34			
Do	do	Local	1910	4211	do	Granite gneiss		2.70	.1	3.2				18.8	12			
Do	do	do	1910	4212	do	Hornblende schist		2.95	.3	3.3				18.7	30			
Do	do	Comm	1910	4418	do	Schist		2.80	.1	2.9				18.2	44			
Do	do	do	1911	5293	do	Altered granite		2.70	.1	2.0				18.6	12			
Do	do	do	1911	5294	do	Hornblende schist		2.95	.1	1.4				18.8	32			
Do	do	Local	1911	5694	do	Gneissoid granite		2.69	.2	2.3			34,410	17.8	14			
Do	do	do	1911	5695	do	Sericite gneiss		2.70	.2	2.6			20,090	19.0	9			
Do	do	do	1911	5696	do	Gneissoid granite		2.69	.3	1.7			21,670	18.8	17			
Do	do	Prosp	1911	5697	do	Amphibolite		3.10	.1	1.5			34,380	18.7	40			
Do	do	Local	1911	5698	do	Gneissoid granite		2.70	.2	2.0			35,210	18.6	9			
Do	do	do	1911	5699	do	do		2.70	.1	2.2			22,190	18.3	10			
Do	do	Prosp	1913	6623	do	Quartz-hornblende schist.		2.75	.2	2.7								
Do	do	Comm	1913	6959	do	Gneissoid granite		2.70	.1	2.4				18.8	16			
Do	do	do	1917	12164	do	Granite		2.68	.2	3.0				18.7	10			
Do	do	do	1917	12165	do	Amphibolite		3.00	.1	4.0				16.7	12			
Do	do	do	1920	17448	do	Diabase				3.1								
Do	do	do	1921	20191	do	Hornblende schist		2.96	.1	2.9				17.7	16			
Do	do	do	1922	21106	do	do		2.94	.1	3.1			34,820	18.3	16			
Do	do	do	1922	21107	do	Biotite gneiss		2.69	.2	2.2			34,090	18.3	14			
Do	do	do	1930	33263	do	Granite		2.69	.2	2.0				19.1	16			
Do	do	do	1934	40743	do	do									23			
Do	do	do	1934	40744	do	do									15			
Do	do	do	1935	40839	do					1.9	27.1	A			17			
Do	do	do	1938	46047	do	Granite		2.69	.4		26.4	A						
Do	Hickory	do	1935	40847	do					2.4	21.4	A			15			
Do	Jarrettsville	Local	1920	17444	do	Serpentine				5.4								
Howard	Ellicott City	Prosp	1915	8642	do	Biotite gneiss				4.5				17.5	4			

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MARYLAND—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Howard	Guilford	Comm	1910	4132	Stone	Granite		2.65	0.2	2.8				19.0	8				
Do	Hollofield	do	1935	40852	do					8.7	30.1	A			8				
Do	North Laurel	Prosp	1916	10021	do	Amphibolite		3.20	.2	3.5				17.7	8				
Do	Savage	Local	1903	829	do	do		3.05	.0	1.6									
Do	do	Comm	1905	1319	do	Hornblende schist		3.10	.1	1.8				18.4	26				
Do	do	do	1905	1329	do	Granite		2.65	.2	3.0									
Do	do	do	1910	4168	do	Hornblende schist		3.05	.1	1.4				18.8	37				
Do	do	do	1915	8587	do	Amphibolite		3.10	.1	2.3				18.7	16				
Do	do	do	1921	20316	do	do		3.05	.2					17.7	14				
Do	do	do	1921	20388	do	do		3.05	.1	1.5				19.3	30				
Do	do	do	1922	21282	do	do		3.09		2.2				18.0	18				
Do	do	Prosp	1935	40225	do	Uralite diabase												S	1½–1
Do	do	Local	1941	53276	do						18.5	A	38,200					S	1½–1
Do	Simpsonville	do	1920	17458	do	Hornblende gneiss		2.67	.5	4.6				17.3	8				
Montgomery.	Bethesda	do	1918	12607	do	Mica gneiss		2.70	.2	3.4				18.7	9				
Do	do	Comm	1937	44521	do	Gneiss		2.64	1.0	13.4	68.3	A	6,720		4			Q	1½–1
Do	do	do	1937	44534	do	Biotite granite		2.71	.8	4.5	37.6	A	15,190		9			S	1½–1
Do	do	do	1937	44725	do	Biotite schist		2.76	.3	7.5			13,950		6			S	1½–1
Do	do	do	1938	44856	do	Biotite gneiss		2.77	.3				13,360					S	1½–1
Do	Brookeville	Local	1932	34602	do	Mica gneiss		2.74	.2	2.7				18.3	9				
Do	do	do	1934	40678	do	Sericite gneiss					33.1	B							
Do	do	do	1935	40916	do	Gneiss				3.5	30.9	A			12				
Do	Cabin John	do	1937	44674	do	Schist		2.79	.2	6.5			15,860		6			S	1½–1
Do	do	do	1937	44675	do	do		2.72	.6	11.1			4,460		4			S	1½–1
Do	do	do	1937	44676	do	do		2.83	.2	9.4			14,320		5			S	1½–1
Do	do	do	1937	44677	do	do		2.68	1.2	12.4			16,990		7				
Do	do	do	1937	44712	do	do		2.74	.5	9.1			13,880		3				
Do	do	do	1941	53275	do	Mica schist					26.4	A	13,950					S	1½–1
Do	Carderock	Prosp	1934	40757	do	do		2.79	.6	9.3					8			Q	1½–1
Do	Clopper	do	1910	4908	do	Gneiss		3.05	.2	5.5				16.8	12				
Do	Derwood	do	1909	3809	do	do		2.70	.2	4.2				17.8	15				
Do	do	do	1909	3820	do	do		2.85	.1	6.3				17.8	11				
Do	do	do	1909	3821	do	Quartz gneiss		2.85	.1	3.6				17.3	11				
Do	do	do	1909	3870	do	Diorite gneiss		3.00	.2	5.7				17.6	7				
Do	do	do	1911	5299	do	Mica schist		2.80	.2	3.3				17.3	14				
Do	do	do	1911	5300	do	do		2.75	.2	3.1				17.8	17				
Do	Dickerson	Local	1901	363	do	Diabase		3.00	.1	2.8									
Do	do	Comm	1905	1336	do	do		2.90	.3	2.2									
Do	do	do	1906	1626	do	do		3.00	.3	1.8									
Do	do	Prosp	1908	2494	do	do		3.00	.2	2.0				18.5	25				
Do	do	Comm	1913	7316	do	do		3.00	.2	1.9				19.2	28				
Do	do	do	1915	8583	do	do		3.00	.1	1.8				18.3	44				
Do	do	do	1916	10101	do	do		2.99		1.4				18.5	21				
Do	do	do	1918	12766	do	do		2.90	.2	2.6									
Do	do	do	1919	14264	do	do		3.00	.1					18.7	20				
Do	Gaithersburg	Prosp	1909	3837	do	Serpentine		2.65	.3	3.8				18.6	16				
Do	do	do	1912	6009	do	Feldspathic quartzite.		2.75	.0	5.7				18.1	15				
Do	Germantown	Local	1911	5722	do	Altered diabase		3.00	.3	1.8				18.0	18				
Do	do	Prosp	1911	5723	do	Quartz		2.65	.0	7.3									
Do	do	Local	1935	40956	do					2.0	30.2	A			20				
Do	Glen Echo	Prosp	1915	8289	do	Granite		2.70	.4	2.8				18.7	9				
Do	do	do	1915	8290	do	do.		2.70	.2	3.6				19.0	7				
Do	Halpine	do	1916	11152	do	Epidote-hornblende gneiss.		3.17	.3	3.1				16.0	11				
Do	do	Local	1916	11153	do	Biotite granite		2.74	.2	3.1				18.7	13				
Do	Laytonsville	Prosp	1907	2359	do	Hornblende serpentine.		2.65	.5	2.8				18.6	21				
Do	Potomac	do	1915	8622	do	Chlorite-sericite schist.		2.70	.3					18.7	4				
Do	do	Local	1925	26773	do	Sericite gneiss		2.72	1.0	11.3				16.7	3				
Do	do	do	1925	26774	do	do		2.70	1.2	13.3				16.7	3				
Do	Rockville	do	1910	4936	do	Serpentine		2.70	.1	2.5				18.4	17				
Do	do	Prosp	1911	5625	do	Sericite gneiss		2.90	.1	6.1				17.6	12				
Do	do	Local	1913	6953	do	Quartz		2.65	.1	10.9									
Do	do	do	1913	6957	do	Chlorite gneiss		2.80	.1	7.0				16.6	7				

Do	do	Comm	1945	69321	do	Biotite gneiss					22.0	A						.2	1½-1		
Do	Seneca	Prosp	1908	2844	do	Sandstone		2.70	.6	4.8				11.8	11						
Do	do	do	1908	2845	do	Ferruginous sandstone.		2.55	1.2					15.8	6						
Do	do	do	1911	5529	do	Mica schist		2.70	1.0	12.2											
Do	do	Local	1914	8136	do	Feldspathic sandstone.		2.50	1.2	4.8				15.5	5						
Do	do	do	1914	8137	do	do		2.55	.2	3.1				16.3	7						
Do	Silver Spring	Comm	1939	46759	Gravel	Quartz-quartzite	1½				42.8	A									
Do	Washington Grove	Local	1907	2360	Stone	Talc schist		2.65	.4	8.2				.9	3						
Do	do	do	1908	2454	do	Quartz		2.65	.1	14.9											
Do	do	do	1909	3405	do	Serpentine		2.65	.3	3.2				18.3	14						
Prince Georges.	Accokeek	Prosp	1945	67615	Gravel						40.5	A									
Do	Beltsville	do	1937	43200	do	QS	1			4.1		B									
Do	do	do	1938	46002	do	QQz	2			18.9		E									
Do	do	Local	1938	46265	do		2			4.6		A									
Do	do	do	1939	46464	do	QSQz	2				48.5	A									
Do	do	do	1940	49766	do	QQz	2½	2.62	.4		46.0	A									
Do	Bowie	Comm	1929	32198	do		2			18.7		A									
Do	do	do	1935	42480	do					7.2		C									
Do	do	do	1935	42481	do					9.6		A									
Do	Branchville	do	1934	40506	do	QQzC	1	2.61	.4	4.6		C									
Do	do	do	1945	68856	do	QQz(S)	2	2.57	1.0		46.1	A									
Do	do	do	1945	69261	do	do	2	2.57	1.1		49.2	A									
Do	do	do	1946	72368	do	QQzS	2½	2.56	1.0		48.6	A						7.8	1-⅜		
Do	Camp Springs	do	1943	62729	do	QQzC	1½				35.3	A									
Do	do	do	1943	62843	do	QSC					39.3	A									
Do	do	do	1943	62844	do	QSC					43.4	A									
Do	do	do	1943	63185	do						37.4	B									
Do	do	do	1943	63439	do	QQzSC	1½	2.56	1.2		34.7	B									
Do	do	do	1944	63804	do	QQzC	1½	2.54	1.3		37.9	B				101	1½-#4				
Do	do	do	1944	63806	do	QQzSC	1	2.54	1.0		35.9	B				103	1-#4				
Do	do	do	1944	64628	do	QQzC					38.0	A									
Do	do	do	1944	64674	do	QQz(S)	1½	2.52	1.6		42.0	A									
Do	do	do	1944	65636	do	QQzC	2				33.8	A									
Do	do	do	1944	65894	do	QQzC	1½	2.56	1.1		37.2	A									
Do	do	do	1949	79173	do	QQzCS	1	2.54	1.3									4.5	1-#4		
Do	Clinton	do	1943	63161	do						40.5	A									
Do	do	do	1946	71544	do	QQz(C)	1	2.56	.9		33.2	B									
Do	do	do	1946	71557	do	QQz(SC)	1½	2.56	.8		34.5	B									
Do	District Heights	do	1947	72833	do	CQ	1½	2.52	1.6		38.4	A									
Do	do	do	1949	77752	do	QCQzS	1½	2.55	.9		35.1	B						1.8	1½-#4		
Do	do	do	1949	79280	do	QCS	1½	2.54	1.2									3.8	1½-#4		
Do	Forestville	do	1943	63183	do						33.8	A									
Do	do	do	1943	63184	do						38.4	A									
Do	Hillside	do	1943	63378	do	QzC	2½	2.52	1.4		35.2	A				97	2½-1				
Do	do	do	1953	63379	do	QQzC(S)	1	2.56	1.0							102	1-#4				
Do	do	do	1944	64304	do	QC	1½	2.50	1.4		34.0	A									
Do	Lanham	do	1943	63162	do						38.8	A									
Do	do	do	1943	63163	do						46.2	A									
Do	Laurel	Prosp	1909	3217	Stone	Hornblende schist		3.05	.1	1.3				18.3	20						
Do	do	Comm	1934	40455	Gravel	Quartz	1			3.8		C									
Do	do	do	1940	49411	do	QS	1				31.6	B									
Do	do	do	1945	68436	do	QQz	2	2.60	.5		33.0	A									
Do	do	Local	1945	69652	Stone	Hornblendite					21.5	A									
Do	do	Comm	1946	72261	Gravel	QQzSC	2½	2.59	.5		29.1	A									
Do	Oxon Hill (Henson Creek).	Local	1935	40824	do	QSC				15.0		A									
Do	do	do	1935	40870	do	QSC				16.0		A									
Do	do	do	1935	40871	do	QSC				10.5		C									
Do	do	do	1935	40872	do	QSC				12.1		A									
Do	do	do	1935	40873	do	QSC				13.3		B									
Do	Piscataway	Comm	1933	34976	do	QSC	2			12.8		A									
Do	do	do	1934	40184	do	QC	1½			12.7		A									
Do	Silver Hill	do	1943	62426	do	QQz(SC)	1½	2.52	1.6		39.5	A									
Do	do	do	1943	62529	do	QSQzC	1½				37.8	A									
Do	do	do	1943	62841	do	QSQzC					37.5	A									
Do	do	do	1943	62842	do	QzSQ					38.3	A									
Do	do	do	1943	62918	do	QzQC	1½	2.53	1.4		39.0	A									
Do	do	do	1943	63186	do						38.5	A									
Do	do	do	1943	63830	do	QQzC	1½	2.51	1.7		38.8	A				104	1½-#4				
Do	do	do	1944	63949	do	QQzC	2½	2.50	1.6		38.9	A				98	2½-¾	10.4	2½-¾		
Do	do	do	1944	63950	do	Q(SQzC)												16.8	1½-#4		
Do	do	do	1944	64171	do	QQzSC	1½	2.53	1.6		40.3	A									
Do	do	do	1944	64676	do	QQzC	2	2.51	1.4		42.0	A									
Do	do	do	1944	66834	do	QQzSC	1½	2.54	1.4		38.1	A									
Do	do	do	1945	67238	do	QS(C)	1½	2.52	1.4		36.5	A									
Do	do	do	1945	68139	do	QQzSC	2½	2.54	1.0		37.1	A									

[1] Weathered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MARYLAND—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Prince Georges.	Silver Hill	Comm.	1945	68380	Gravel	QQzSC	1	2.55	1.0		36.4	B							
Do.	do	do.	1946	71214	do.	QQzC	1½	2.53	1.6		38.4	A							
Do.	do	do.	1946	72119	do.	QQzC	1½	2.52	1.5		37.6	B							
Do.	do	do.	1946	72120	do.		2	2.57	.8									8.8	1½–#4
Do.	do	do.	1946	72197	do.	QQzC	2½	2.54	1.5		38.0	A						8.9	2½–¾
Do.	do	do.	1947	73260	do.	QQzS	2½	2.56	1.0		39.6	A							
Do.	do	do.	1948	74978	do.	Q(S)	2½		1.5		42.6	A							
Do.	do	do.	1948	75128	do.	QCS	1½	2.51	1.8		44.5	A							
Do.	do	do.	1948	76270	do.	QCS	1½											13.9	1½–#4
Do.	do	do.	1948	76271	do.	QCS	2½				39.8	A						6.7	1½–#4
Do.	do	do.	1949	77585	do.		1				37.5	B						6.9	2½–#4
Do.	do	do.	1949	79258	do.	QQzCS	1½				38.6	A						3.4	¾–⅜
Do.	Suitland	Prosp.	1943	63182	do.						39.0	A						7.4	1½–#4
Talbot	Easton	do.	1914	7921	Stone.	Dolomitic marble				3.9									
Washington.	Cavetown	Local.	1917	11342	do.	Marble		2.73	.2	3.6				16.0	9				
Do.	do	Comm.	1935	40851	do.					3.3	19.8	A			15				
Do.	Hagerstown	Prosp.	1912	5826	do.	Limestone		2.70	.1	5.2				16.7	13				
Do.	do	Local.	1935	40850	do.					3.8	26.8	A			6				
Do.	do	do.	1935	40953	do.					4.3	28.4	A			6				
Do.	Hancock	Prosp.	1914	7505	do.	Ferruginous sandstone.		2.75	.4	2.7				18.2	18				
Do.	do	Comm.	1935	40884	do.					5.1	26.3	A			6				
Do.	Rohrersville	do.	1935	40917	do.					3.7	27.0	A			6				
Do.	Security	do.	1915	8445	do.	Limestone		2.70	.4	5.7				16.7	6				
Do.	do	do.	1915	8446	do.	do		2.70	.3	6.0				15.9	4				
Do.	do	do.	1916	10106	do.	do				4.3									
Do.	do	do.	1934	40081	do.	Argillaceous limestone.		2.71	.1	3.7	21.9	A			5				
Do.	do	do.	1934	40104	do.	do		2.72	.2	4.7					6			S	1½–1
Do.	do	do.	1934	40242	do.	do									9				
Do.	do	do.	1934	40243	do.	do				4.2					9				
Do.	do	do.	1935	40848	do.	Limestone				4.8	28.3	A			5				
Do.	do	do.	1935	42252	do.	Argillaceous limestone.					24.9	A							
Do.	do	do.	1935	42257	do.	do				4.0					6				
Do.	do	do.	1941	54019	do.	Limestone					22.4	A							
Do.	do	do.	1941	54126	do.	do					23.8	B							
Do.	do	do.	1943	63096	do.	do					22.6	C							
Do.	do	do.	1944	64960	do.	do					26.6	A							
Do.	do	do.	1944	66480	do.	do					21.2	B							
Do.	do	do.	1944	66504	do.	do					21.2	A							
Do.	do	do.	1944	66653	do.	do					18.9	A							
Do.	Weverton	Prosp.	1919	14424	do.	Quartzite		2.68	.2	3.1									
Do.	Williamsport	Comm.	1935	40885	do.					5.0	28.3	A			3				

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Barnstable	Barnstable	Prosp.	1899	325	Stone.	Field stone				3.5									
Do.	Bourne	Local.	1898	275	do.	do				3.8									
Do.	Brewster	Prosp.	1897	220	do.	do				2.5									
Do.	Dennis	do.	1897	180	do.	do				2.1									
Do.	do	do.	1897	221	do.	do				2.5									
Do.	do	do.	1898	258	do.	do				2.9									
Do.	Sandwich	do.	1897	200	do.	do				3.5									
Do.	Yarmouth	do.	1897	171	do.	do				3.3									
Do.	do	do.	1898	237	do.	do				2.4									
Berkshire	Ashley Falls	Comm.	1947	73522	Gravel.	QQzGnGSy	¾												
Do.	do	do.	1947	73523	do.	QQzGL	1½				36.4	A						3.4	1–#4
Do.	Becket	Prosp.	1904	1008	Stone.	Gneissoid granite		2.70	0.1	1.6				17.6	14			2.1	1½–#4
Do.	Florida	do.	1897	119	do.	Steatite				19.8									
Do.	do	do.	1897	120	do.	Field stone				6.0									
Do.	Great Barrington.	do.	1895	47	do.	Limestone				4.2									

	Do	do	do	1897	80	do	Gneiss				2.7										
	Do	do	do	1912	6118	do	Marble		2.85	.1	5.4				15.3	5					
	Do	do	Local	1916	10016	do	do		2.80	.2	5.6				15.3	4					
	Do	Lanesboro	Prosp	1899	326	Slag	Blast furnace		2.71		10.6										
	Do	Lee	do	1895	41	Stone	Schist				3.3										
	Do	do	do	1895	51	do	Gneiss				3.5										
	Do	do	do	1894	101	do	Marble		2.74		14.0										
	Do	do	do	1895	104	do	Quartzite		2.60		3.4										
	Do	do	do	1897	121	do	do				3.4										
	Do	do	do	1917	11508	do	Dolomitic marble		2.87	.2	7.2				11.2	2					
	Do	Lenox	do	1894	10	do	Schist		2.85		5.0										
	Do	do	do	1908	2928	do	Sericite schist		3.00	.1	4.1				16.8	7					
	Do	North Adams	do	1899	298	do	Limestone				4.7										
	Do	do	do	1915	8287	do	Biotite gneiss		3.00	.4	7.7				18.3	6					
	Do	do	do	1915	8440	do	Quartzite		2.65	.1	3.5										
	Do	Otis	do	1916	10288	do	Granite		2.66	.4	2.6			18,260	18.0	9					
	Do	Pittsfield	do	1896	69	do	Mica schist		2.76		4.1										
	Do	do	do	1895	102	do	Limestone		2.80		4.3										
	Do	Richmond Summit.	Comm	1924	24593	do	Dolomitic marble		2.82	.2	3.4			28,360	16.7	7					
	Do	West Pittsfield	Prosp	1920	15457	do	Marble		2.77	.4	5.1				13.3	7					
	Do	Williamstown	do	1898	273	do	Field stone				3.4										
	Do	Windsor	do	1917	12473	do	Quartzite		2.63	.2	3.9				18.7	12					
Bristol		Acushnet	do	1897	205	do	Field stone				4.3										
	Do	do	Local	1916	11017	do	Chlorite gneiss		2.68	.3	2.4				19.0	17					
	Do	Dartmouth	Prosp	1897	77	do	Granite				2.8										
	Do	Fall River	do	1916	9770	do	Biotite gneiss		2.85	.2	2.7				18.2	17					
	Do	New Bedford	do	1915	9485	do	Chlorite gneiss		2.70	.4	2.5				18.2	8					
	Do	North Westport	do	1897	81	do	Hornblende granite.				2.8										
	Do	Rehoboth	do	1897	224	do	Field stone				3.3										
	Do	Seekonk	Local	1916	10247	do	Feldspathic sandstone.		2.67	.5	4.0				18.7	12					
	Do	do	Prosp	1919	15178	do	do		2.65	.7	4.3				18.7	14					
	Do	do	do	1919	15179	do	Siliceous slate		2.63	1.1	3.9										
	Do	do	Comm	1937	44235	Gravel	GQzSC				[1] 4.5	20.9	A								
	Do	do	do	1942	57602	do	GDiScQz		2.67	.8		19.2	B								
	Do	Somerset	Prosp	1897	173	Stone					3.4										
	Do	do	do	1897	216	do	Field stone				3.5										
	Do	do	do	1899	321	do	do				4.5										
	Do	Swansea	Comm	1942	57603	Gravel	QzBDiQ		2.63	1.1		18.4	B								
	Do	Taunton	Prosp	1899	291	Stone	Field stone				3.4										
	Do	do	do	1899	317	do	do				3.7										
	Do	do	do	1901	445	do	Granite		2.69	1.0	4.1										
	Do	do	do	1919	14723	Gravel	QQz	1½			6.1		A								
	Do	Westport	do	1897	122	Stone	Field stone				2.8										
	Do	do	do	1898	262	do	do				3.5										
Dukes		Cottage City	do	1897	197	do	do				3.6										
	Do	Edgartown	do	1898	235	do	do				4.6										
	Do	Tisbury	do	1895	109	do	Granite				4.5										
	Do	West Tisbury	do	1897	175	do	Field stone				4.8										
	Do	do	do	1897	198	do	do				5.9										
Essex		Andover	do	1897	210	do	do				3.9										
	Do	Bay View	Comm	1920	17124	do	Granite							42,200							
	Do	do	do	1925	27531	do	do		2.65	.2	3.2			42,180	18.7	24					
	Do	Beverly	Local	1895	62	do	do		2.75		2.8										
	Do	do	Prosp	1897	74	do	do				1.9										
	Do	do	do	1897	89	do	do				2.3										
	Do	do	do	1897	117	do	Diorite				2.4										
	Do	do	Local	1898	271	do					2.1										
	Do	do	Prosp	1907	1945	do	Diorite		3.00	.2	2.8				17.3	16					
	Do	do	Comm	1917	11413	do	Hornblende granite.							28,580	19.3	9					
	Do	do	Prosp	1917	12289A	do	Biotite syenite		2.90	.5					17.0	24					
	Do	do	do	1917	12289B	do	Hornblende granite.		2.90	.5					19.0	15					
	Do	Beverly Farms	Local	1906	1550	do	do		2.70	.2	1.6				18.9	31					
	Do	Cliftondale	Prosp	1912	5825	do	Altered diabase		2.90	.2	2.0				17.6	21					
	Do	Danvers	Local	1921	20878	do	Diorite		2.98	.2	2.8				18.3	10					
	Do	Essex	Prosp	1921	19958	do	Granite		2.60	.3	4.8				18.7	8					
	Do	Gloucester	do	1895	26	do	do		2.64		3.6										
	Do	do	do	1895	30	do	Augite syenite		2.75		3.2										
	Do	do	do	1897	170	do	Field stone				3.0										
	Do	do	do	1898	272	do	do				3.5										
	Do	do	do	1906	1752	do	Granite			1.9	2.0				18.7	19					
	Do	do	Comm	1915	9649	do	do		2.65	.2	3.7			19,580	19.7	10					
	Do	do	do	1915	9650	do	do		2.65	.2	4.4			18,120	19.7	10					
	Do	do	do	1924	25172	do	Biotite granite		2.65	.1	4.0			30,410	18.7	10					
	Do	Haverhill	Local	1909	3543	do	Hornblende schist		2.75	.3	3.2				18.4	17					

[1] Grading C.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MASSACHUSETTS—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Essex	Ipswich	Prosp	1895	61	Stone	Diabase				1.7									
Do	do	do	1897	116	do	Granite				2.2									
Do	do	do	1921	19960	do	Altered diabase		2.89	0.2	3.9				18.0	6				
Do	Lawrence	do	1896	65	do	Limestone		2.76		2.3									
Do	do	do	1897	222	do	do				2.1									
Do	do	Local	1905	1190	do	Diabase		2.95	.3					17.9	24				
Do	do	Prosp	1905	1191	do	Gneissoid granite		2.60	.4					19.1	21				
Do	do	do	1905	1192	do	Granite gneiss		2.65	.2					19.0	12				
Do	Lynn	do	1895	16	do	Diabase		3.03		2.0									
Do	do	do	1895	21	do	do		3.03		2.0									
Do	do	do	1895	24	do	Felsite		2.66		2.7									
Do	do	do	1895	27	do	do		2.66		3.2									
Do	do	do	1895	29	do	Diabase		2.99		2.2									
Do	do	do	1917	11245	do	Rhyolite		2.64	.2	3.8									
Do	do	Local	1919	14987	do	Trachytic rhyolite		2.67	.1	3.1				19.3	15				
Do	do	Comm	1942	55866	do	Quartz syenite		2.76	.2		15.1	B	47,300						
Do	Marblehead	Prosp	1921	18930	do	Diorite		2.86	.1	2.5				18.0	20				
Do	Merrimac	do	1898	238	do	Field stone				2.8									
Do	do	do	1899	329	do	Quartzite				3.1									
Do	Methuen	do	1897	191	do	do				2.9									
Do	do	do	1897	226	do	do				2.1									
Do	Newbury	do	1895	31	do	Diabase		2.95		2.0									
Do	do	do	1895	35	do	Quartz diorite				2.8									
Do	do	do	1921	20812	do	Aplitic diorite		2.79	.4	3.0				18.7	13				
Do	Newburyport	do	1895	37	do	Diabase				2.5									
Do	do	do	1897	225	do					2.4									
Do	do	do	1917	12256A	do	Granodiorite		2.82	.2	3.6				17.6	10				
Do	do	do	1917	12256B	do	Diorite								18.6	10				
Do	do	do	1921	20397	do	Sericite-hornblende schist.		3.05	.1	3.1				18.3	12				
Do	do	Local	1921	20380	do	Amphibolite		2.79	.1	2.4				18.7	21				
Do	North Andover	Prosp	1924	24600	do	Aplitic granite		2.65	.3	3.1			29,560	18.3	9				
Do	Peabody	do	1905	1351	do	Augite diorite		2.95	.1	3.0				16.9	15				
Do	do	do	1905	1375	do	Gabbro		2.95	.1	2.9									
Do	do	Comm	1909	4012	do	Hornblende granite.		2.65	.0	4.5				19.0	8				
Do	do	do	1918	13566	do	Altered diorite		2.90	.1	2.9				18.0	16				
Do	Rockport	Prosp	1895	34	do	Granite		2.63		3.2									
Do	do	Comm	1913	6890	do	Biotite granite		2.65	.1	3.3			28,450	19.0	12				
Do	do	do	1913	6891	do	do		2.65	.1	4.0			22,380	18.9	10				
Do	do	do	1913	6892	do	do		2.65	.1	4.0			23,610	18.8	10				
Do	do	do	1913	6893	do	do		2.65	.2	3.8			22,670	18.8	10				
Do	do	do	1913	6894	do	do		2.65	.2	3.7			21,600	18.7	9				
Do	do	do	1915	8796	do	do							23,830		13				
Do	do	do	1915	9651	do	Granite		2.65	.2	4.9			22,380	19.3	7				
Do	do	do	1915	9652	do	do		2.65	.1	3.6			18,780	19.3	11				
Do	do	do	1918	13852	do	do				3.6				19.3	11				
Do	do	do	1918	13853	do	Biotite granite				3.2				18.7	11				
Do	do	do	1919	15174	do	Granite							34,200		11				
Do	do	do	1919	15175	do	do							31,220		10				
Do	do	do	1919	15176	do	do							24,280		8				
Do	do	do	1919	15177	do	do							32,120		10				
Do	do	do	1920	17123	do	do							31,600						
Do	do	do	1921	19959	do	do		2.61	.2	3.8				18.3	7				
Do	do	do	1925	27530	do	do		2.60	.2	4.0			26,700	18.7	16				
Do	Rowley	Prosp	1897	97	do	Felsite				3.2									
Do	do	do	1921	20556	do	Ferruginous chert		2.61	.3	4.9				18.7	11				
Do	do	Local	1922	21799	Gravel	DGS	2			10.5		A							
Do	Salem	Comm	1895	1	Stone	Augite diorite		2.92		3.0									
Do	do	do	1897	115	do	Augite syenite				2.8									
Do	do	do	1899	312	do	Diabase				3.3									
Do	do	Prosp	1899	315	do	do				3.1									
Do	do	Comm	1902	611	do	Augite diorite		2.95	.2	2.7									
Do	do	do	1908	2648	do	Altered syenite		3.00	.1	2.2				17.3	8				
Do	Salisbury	Prosp	1895	33	do	Diorite		2.80		2.4									
Do	Saugus	do	1895	15	do	Granite		2.70		4.4									
Do	do	do	1895	22	do	Diabase		3.01		2.5									

Do	do	do	1895	25	do	do		3.01		2.5									
Do	do	do	1895	28	do	do		3.03		2.2									
Do	do	do	1895	32	do	do		3.03		1.9									
Do	do	Comm	1942	57569	do	Rhyolite		2.66	.2		16.0	B							
Do	do	do	1942	57570	do	do							26,400		11				
Do	Swampscott	Prosp	1907	2297	do	Augite syenite		3.05	.2	3.1					17.8	14			
Do	do	Comm	1921	20434	do	do		2.97	.1	2.5					17.7	17			
Do	do	do	1921	20435	do	Porphyritic diabase.		2.99	.3	2.7					18.0	18			
Do	do	do	1942	57571	do	Augite syenite		2.86	.2		16.4	B							
Do	do	do	1942	57572	do	do							27,600		11				
Do	do	do	1943	61602	do	do		2.90	.5		15.4	B							
Do	Topsfield	Local	1922	20989	do	Altered diorite		2.76	.4	4.1					17.7	9			
Do	West Newbury	Prosp	1897	186	do	Field stone				4.0									
Do	do	do	1898	228	do	do				3.0									
Do	West Peabody	Comm	1922	21175	Gravel	GScC	1½			13.8		A							
Franklin	Buckland	Prosp	1895	50	Stone	Hornblende gneiss.				5.0									
Do	do	do	1895	52	do	Schist				3.4									
Do	Deerfield	do	1897	76	do	Diabase				1.4									
Do	do	Local	1899	268	do	do				1.4									
Do	do	Comm	1921	18545	do	do		2.95	.4	1.9					17.7	31			
Do	do	do	1921	19693	do	Altered diabase		2.85	.1	1.7					18.3	32			
Do	Erving	Prosp	1929	32347	do	do									14.7	6			
Do	Greenfield	Comm	1917	12220	do	Diabase		2.96	.2						18.7	30			
Do	do	do	1922	21774	do	do				2.4									
Do	do	do	1942	57573	do	Altered diabase		2.84	1.1		15.6	B							
Do	do	do	1942	57574A	do	do							27,400		12				
Do	do	do	1942	57574B	do	Diabase							54,700		28				
Do	Orange	Prosp	1895	39	do	Hornblende granite.				4.1									
Do	do	do	1897	211	do	do				3.9									
Hampden	Chester	do	1895	44	do	Hornblende schist				3.3									
Do	do	do	1895	46	do	Schist				3.8									
Do	East Longmeadow	Comm	1932	34630	do	Ferruginous sandstone.		2.06	6.4	14.2									
Do	Holyoke	Prosp	1896	66	do	Diabase		2.93		2.0									
Do	Monson	Comm	1896	68	do	do		3.01		1.8									
Do	North Wilbraham.	do	1919	14440	Gravel	QCGGn	1½			21.0		B							
Do	do	do	1921	18925	do	GScGn	2			16.4		A							
Do	do	do	1921	20000	do	GQGnSc				12.9		A							
Do	do	do	1922	21165	do	GQDi				14.3		A							
Do	do	do	1922	21746	do	GGnQS	2			13.6		A							
Do	do	do	1925	27389	do	QGQzScGn		2.70	.4	18.3		A							
Do	do	do	1927	30002	do	GnScQS		2.59	1.4	14.5		A							
Do	do	do	1932	34756	do	GGnQz				17.9	46.8	A							
Do	Springfield	Prosp	1908	2423	Stone	Dolomite		2.80	.6	5.4					18.2	21			
Do	Westfield	Comm	1902	517	do	Diabase		3.00	.3	1.3									
Do	do	do	1911	5671	do	Altered diabase		3.00	.3	1.6			32,850		17.8	28			
Do	do	do	1917	12215	do	Diabase		2.97	.1	2.2					18.0	26			
Do	do	do	1928	30296	do	do		2.93	.0	3.1					18.0	20			
Do	do	do	1942	57575	do	do		2.96	.4		10.7	B							
Do	do	do	1942	57576	do	do							46,400		17				
Do	do	do	1943	61636	do	do		2.92	.8		11.7	B							
Do	West Springfield	Prosp	1895	12	do	do		2.96		2.6									
Do	do	Comm	1896	67	do	do				1.8									
Do	do	Prosp	1896	91	do	do				1.6									
Do	do	do	1897	93	do	do				1.8									
Hampshire	Amherst	do	1897	78	do	do				2.0									
Do	Cummington	do	1919	15156	do	Mica schist		2.66	.9						17.0	9			
Do	do	do	1919	15157	do	Chlorite schist		2.64	.8	7.7					17.3	6			
Do	do	do	1919	15158	do	Mica schist		2.67	.4	4.3					17.7	7			
Do	Northampton	Local	1913	6572	do	Altered granite		2.75	.1	3.1					18.3	11			
Do	Ware	Prosp	1896	64	do	Diabase		3.00		1.7									
Do	Williamsburg	do	1897	316	do	Field stone				6.2									
Middlesex	Ashby	do	1895	60	do	Granite				4.8									
Do	do	do	1897	118	do	Granite gneiss				6.6									
Do	do	do	1897	187	do	Field stone				7.4									
Do	do	do	1897	209	do	do				5.5									
Do	do	do	1899	283	do	do				6.8									
Do	Ayer	do	1917	11795	do	Quartzite		2.70	.5	6.0					11.0	12			
Do	do	do	1917	11796	do	Granite		2.56	.8	9.4					17.7	5			
Do	do	do	1917	11871	do	Biotite gneiss		2.70	.2	4.9					19.0	7			
Do	Bedford	do	1898	241	do	Field stone				2.4									
Do	Boxboro	do	1898	231	do	do				3.1									
Do	Chelmsford	Local	1917	12253	do	Granite		2.60	.5	4.1					18.5	10			
Do	do	Comm	1919	14890	do	do		2.61	.5	3.9					18.7	9			
Do	Concord	Prosp	1897	207	do	Field stone				2.8									
Do	do	do	1898	274	do	do				3.4									
Do	Dracut	do	1909	3539	do	Biotite-hornblende gneiss.		2.85	.2	4.5					15.9	10			

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MASSACHUSETTS—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Middlesex	Dunstable	Comm	1908	2610	Stone	Granite		2.65	0.2	2.4				18.6	18				
Do	Everett	Prosp	1895	2	do	Diabase		2.87		2.9									
Do	do	do	1906	1572	do	Augite diorite		2.80	.5					18.6	22				
Do	do	do	1906	1573	do	Altered diorite		2.75	.5					17.7	23				
Do	Groton	Comm	1917	11720	do	Granite		2.61	.5	5.2			22,540	18.0	8				
Do	Lexington	Prosp	1898	264	do	Field stone				3.5									
Do	Lincoln	do	1897	172	do	do				3.1									
Do	Lowell	Local	1922	21020	do	Hornblende quartzite.		2.77	.2	2.7				19.0	24				
Do	Malden	Prosp	1897	125	do	Hornblende granite.				2.8									
Do	do	Local	1898	270	do	Diabase				2.1									
Do	do	Comm	1912	5957	do	Altered rhyolite		2.70	.0	1.7				19.3	30				
Do	do	Prosp	1917	12090	do	do		2.71	.1	2.8				18.0	21				
Do	do	Comm	1918	13560	do	Altered andesite		2.72	.1	2.0				18.7	19				
Do	do	do	1918	13563	do	Altered rhyolite		2.65	.1	3.0				18.7	17				
Do	Marlboro	Prosp	1906	1799	do	Hornblende schist		3.00	.2	2.1				18.7	23				
Do	Medford	do	1895	20	do	Diabase		3.03		2.5									
Do	do	Comm	1917	12088A	do	do								18.0	22				
Do	do	do	1917	12088B	do	Rhyolite		2.86	.2	4.1				18.3	22				
Do	do	do	1917	12088C	do	Granite								18.0	7				
Do	Melrose	Prosp	1917	12141	do	Altered rhyolite		2.72	.1	2.6				18.5	17				
Do	Newton	do	1895	6	do	Trachyte		2.80		1.9									
Do	do	do	1895	107	do	Conglomerate				4.6									
Do	Peperell	do	1911	5355	do	Calcareous sandstone		2.75	.1	2.0				17.7	28				
Do	Somerville	do	1895	19	do	Diabase		2.86		4.3									
Do	do	do	1895	103	do	Slate		2.76		4.7									
Do	do	Local	1911	5744	do	do		2.80	.4	3.8				11.8	10				
Do	Stony Brook	Comm	1917	12145A	do	Altered diabase		2.88	.1	3.5				17.3	13				
Do	do	do	1917	12145B	do	Altered granite								18.7	11				
Do	do	do	1917	12145C	do	Altered rhyolite									16				
Do	Sudbury	Prosp	1899	328	do	Field stone				3.2									
Do	Waltham	do	1895	4	do	Hornblende granite.		2.62		3.3									
Do	do	do	1899	318	do	Diabase				2.5									
Do	do	do	1917	12061A	do	Hornblende trachyte.		2.89	.2	2.5				17.3	18				
Do	do	do	1917	12061B	do	Hornblende syenite.		2.89	.2	2.5				18.0	18				
Do	Watertown	do	1897	96	do	Diabase				2.9									
Do	do	do	1897	174	do	Field stone				2.4									
Do	West Chelmsford.	Comm	1918	13847	do	Granite				3.6				18.0	9				
Do	do	do	1937	44663	do	Gneissoid granite				3.6			16,560		8			S	1½–1
Do	Westford	do	1915	8862	do	Granite		2.65	.2	2.5			13,980		8				
Do	do	do	1915	8874	do	do		2.65	.2	2.3			17,000		8				
Do	do	do	1915	8875	do	do		2.60	.3	2.9			16,250		8				
Do	do	do	1919	13885	do	do				4.6				18.0	9				
Do	do	do	1919	13894	do	do				3.1				19.3	9				
Do	Weston	do	1921	19686	do	Altered diabase		2.89	.1	3.1				18.3	12				
Do	West Townsend	do	1917	12324	do	Granite		2.60	.7	7.4				18.7	8				
Do	do	do	1918	12852	do	Biotite granite		2.61	.2	6.9				17.3	6				
Do	do	do	1918	13148	do	Granite							25,500	18.0	10				
Do	Winchester	Prosp	1899	304	do	Diorite				3.9									
Do	do	Local	1901	386	do	Diabase [1]		3.21	.4	6.3									
Do	do	Prosp	1903	790	do	Altered diabase		3.00	.1	3.8									
Do	do	Comm	1915	8493	do	do		3.00	.2	1.9				18.0	11				
Do	do	do	1920	17198	do	Hornblende gabbro.		3.03	.1	3.0				18.0	13				
Do	Woburn	Prosp	1921	19300	do	Diabase		3.04	.2	2.7				18.7	31				
Nantucket	Nantucket	do	1895	108	do	Granite				4.2									
Norfolk	Brookline	do	1895	7	do	Diabase		2.87		3.5									
Do	do	do	1895	23	do	do		2.99		2.7									
Do	do	do	1901	367	do	Slate		2.80	.3	4.7									
Do	do	do	1901	368	do	Rhyolite		2.85	.1	1.8									
Do	do	do	1901	369	do	Altered diabase		2.90	.1	2.1									

Do	do	do	1917	12063	do	Altered andesite		2.79	.2	2.0				18.3	22		
Do	Dover	do	1912	5909	do	Altered felsite		2.85	.2	2.2				18.7	16		
Do	do	do	1917	12325	do	Slate		2.84	.1					14.7	13		
Do	Franklin	do	1908	2475	do	Sericite gneiss		2.70	.5	7.0				18.4	5		
Do	Milton	do	1897	196	do	Sandstone				1.6							
Do	do	do	1897	218	do	Syenite porphyry				1.9							
Do	do	do	1897	219	do	Diabase				1.8							
Do	Needham	Local	1913	7090	do	Altered diabase		2.90	.1	4.1				10.7	6		
Do	Norfolk	Prosp	1897	204	do	Field stone				3.0							
Do	do	do	1899	327	do	do				3.9							
Do	North Stoughton	do	1915	8616	do	Altered diabase		3.00	.0	2.2				19.2	30		
Do	North Weymouth	Comm	1897	92	do	Felsite				2.8							
Do	Norwood	Prosp	1897	176	do	Field stone				3.0							
Do	Quincy	do	1895	17	do	Hornblende granite		2.66		3.9							
Do	do	do	1895	18	do	Diabase		2.96		2.6							
Do	do	do	1897	72	do	Felsite				2.0							
Do	do	do	1898	230	do	Diabase				1.6							
Do	do	do	1899	299	do	Sandstone				1.7							
Do	do	Local	1903	718	do	Chlorite schist		2.90	.1	5.1							
Do	do	Comm	1904	1044	do	Diabase		3.10	.0	1.6				18.6	33		
Do	do	do	1917	12195	do	Slate		2.70	.4	4.3				15.3	18		
Do	do	do	1918	13562A	do	Granite porphyry		2.67	.2	2.7				18.0	11		
Do	do	do	1918	13562B	do	Slate		2.80	.1					14.0	17		
Do	do	do	1918	13562C	do	Granite		2.64	.2					18.7	11		
Do	do	do	1918	13562D	do	do		2.61	.2					18.0	9		
Do	do	Local	1919	14652	do	Altered granite		2.62	.6	5.3				18.7			
Do	do	Comm	1942	55958	do	do		2.67	.2		25.5	B	32,800		8		
Do	Randolph	Prosp	1919	14897	do	Quartzite		2.62	.6	3.3				18.7	10		
Do	Stoughton	do	1903	843	do	Diabase		3.00	.0	1.7							
Do	Walpole	do	1896	70	do	Conglomerate				3.5							
Do	West Quincy	Comm	1919	14278	do	Sandstone and granite		2.69	.2	3.7				16.7	9		
Do	Weymouth	Prosp	1915	8793	do	Altered granite		2.65	.2	1.6				19.3	19		
Do	Wrentham	do	1898	236	do	Field stone				3.3							
Do	do	do	1899	293	do	do				3.5							
Plymouth	Brockton	do	1897	202	do	do				2.2							
Do	do	do	1899	296	do	do				3.3							
Do	Duxbury	do	1895	5	do	Gneiss		2.69		3.0							
Do	do	do	1897	217	do	Field stone				4.3							
Do	Hingham	do	1898	240	do	do				2.9							
Do	do	Comm	1899	320	do	Diabase				2.9							
Do	do	Prosp	1906	1863	do	Altered diabase		3.05	.1	1.8				18.0	25		
Do	do	do	1906	1887	do	do		2.80	.2	2.2				18.0	19		
Do	do	Comm	1919	15292	do	Aplitic granite		2.64	.3	2.7				18.3	18		
Do	Marion	Prosp	1897	113	do	Field stone				4.0							
Do	do	do	1897	201	do	do				4.7							
Do	Marshfield	do	1897	179	do	do				5.0							
Do	do	do	1899	297	do	do				2.5							
Do	Middleboro	do	1896	177	do	do				5.0							
Do	do	do	1897	214	do	do				3.6							
Do	do	do	1898	269	do	do				3.0							
Do	Plymouth	do	1895	110	do	Granite				4.0							
Do	do	do	1899	294	do	Field stone				3.9							
Do	do	do	1899	331	do	do				3.2							
Suffolk	Boston	Local	1918	13565	do	Diorite		2.92	.1	2.8				18.0	13		
Do	do	do	1921	18912	do	Rhyolite breccia		2.67	.3	5.0				17.7	8		
Do	Brighton	Comm	1917	11991	do	Feldspathic sandstone		2.66	.4	7.1				18.7	13		
Do	do	do	1917	12051	do	Altered trachyte		2.81	.1	5.5				18.7			
Do	do	Local	1921	18910	do	Rhyolite breccia		2.65	.4	3.7				19.3	10		
Do	do	do	1921	18911	do	Altered andesite		2.85	.2	3.0				18.3	10		
Do	Dorchester	do	1921	18920	do	Altered rhyolite		2.67	.4	2.7				19.0	25		
Do	do	do	1921	18921	do	Altered dacite		2.65	.1	4.1				11.7			
Do	do	do	1921	19227	do	Altered rhyolite		2.63	.2	3.2				19.3	12		
Do	Hyde Park	Prosp	1909	3856	do	Altered rhyolite breccia		2.70	.2	3.9				19.0	17		
Do	do	do	1909	3857	do	Conglomerate		2.65	.4	5.1				18.4	10		
Do	Jamaica Plains	Local	1918	13559	do	Rhyolite breccia		2.67	.4	4.4				18.7	8		
Do	do	Comm	1918	13561	do	Conglomerate		2.57	.4	5.0				18.0	7		
Do	do	do	1921	18914	do	Altered rhyolite		2.88	.2	4.2				18.7	12		
Do	Mount Hope	Prosp	1895	40	do	Felsite				2.5							
Do	Revere	do	1895	3	do	do		2.65		3.0							
Do	do	do	1897	124	do	do				2.6							
Do	do	Local	1914	7506	do	Altered rhyolite		2.65	2.1	2.9				19.6	8		
Do	Rosindale	do	1917	12089	do	do		2.66	.1	3.2				18.7	25		
Do	Roxbury	do	1917	12050	do	do		2.70	.3	5.8				18.7	7		
Do	do	Comm	1917	12056	do	Rhyolite breccia		2.67	.1	5.9				18.7			

[1] Weathered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MASSACHUSETTS—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Suffolk	Roxbury	Comm	1918	13567	Stone	Altered rhyolite		2.75	0.2	4.4				17.3	11				
Do	do	Local	1919	15291	do	do		2.67	.4	2.6				19.0	12				
Do	do	do	1921	18913	do	Rhyolite breccia		2.65	.3	2.5				17.3	12				
Do	West Roxbury	do	1918	13564	do	Altered granite		2.70	.1	3.4				18.7	10				
Do	do	Comm	1919	14878	do	Altered diabase		3.09	.1	1.8				18.7	24				
Do	do	do	1919	14917	do	Granite		2.68	.2	4.1				18.7	10				
Do	do	do	1919	15164	do	Altered diabase		3.08	.3	2.2				18.0	18				
Do	do	Local	1921	18915	do	Volcanic conglomerate.		2.65	.4	4.8				17.3	8				
Do	do	do	1921	18916	do	do		2.66	.3	6.6									
Do	do	Comm	1921	18917	do	Quartz syenite		2.64	.2	3.5				18.7	11				
Do	do	do	1921	18918	do	Altered diabase		3.06	.1	2.1				18.7	29				
Do	do	do	1921	18919	do	Altered rhyolite		2.60	.8	4.3				18.7	17				
Do	do	Local	1921	19225	do	Conglomerate		2.64	.6	7.5									
Do	do	Comm	1921	19226	do	Granite		2.61	.3	4.0				18.3	10				
Do	do	Prosp	1921	19736	do	Conglomerate		2.68	.3	4.5			19,710	17.7					
Do	do	Comm	1935	42405	do	Granite		2.67	.2	3.1					10				
Worcester	Athol	Prosp	1897	88	do	Granite gneiss				3.2									
Do	Auburn	do	1897	203	do	do				3.2									
Do	Clinton	do	1897	242	do	Gneissoid granite				4.8									
Do	do	do	1897	243	do	Hornblende schist.				8.2									
Do	do	do	1897	244	do	Mica schist				4.9									
Do	do	do	1898	245	do	Gneiss				4.4									
Do	do	do	1898	247	do	Felsite				2.5									
Do	do	do	1898	279	do	Granite				4.6									
Do	Fayville	do	1916	10935	do	Granite gneiss		2.60	.5	3.0				18.7	11				
Do	Fitchburg	do	1898	256	do	Granite				2.2									
Do	do	do	1899	295	do	do				4.2									
Do	do	do	1914	7521	do	do		2.65	.2	4.3				17.7	6				
Do	do	Local	1914	7522	do	do		2.68	.2	4.4				17.2	5				
Do	do	Prosp	1914	7523	do	do		2.65	.2	3.2				17.7	6				
Do	do	Local	1917	11250	do	Biotite granite		2.67	.5	5.7				17.9	7				
Do	do	Comm	1922	21095	do	Granite		2.66	.3	3.8			24,700	17.7	8				
Do	do	do	1922	21127	do	Biotite granite		2.66	.4	5.5			14,660	18.3	7				
Do	Grafton	Prosp	1897	223	do	Field stone				3.4									
Do	do	Local	1914	7711	do	Granite gneiss		2.65	.3	5.2				19.5	8				
Do	Holden	Prosp	1899	289	do	Field stone				4.4									
Do	Leicester	do	1898	267	do	do				3.6									
Do	Leominster	do	1911	5378	do	Granite gneiss		2.80	.2	3.6				16.4	10				
Do	do	do	1911	5379	do	Biotite schist		2.70	.6	3.9				17.2	8				
Do	do	do	1911	5400	do	Field stone				4.5									
Do	do	do	1911	5401	do	Biotite schist		2.75	.2	3.6				16.7	6				
Do	do	do	1921	18080	do	Micaceous quartzite.		2.75	.4	3.1				16.7	13				
Do	Millville	do	1897	227	do	Diorite				2.7									
Do	Northboro	do	1899	314	do	Field stone				3.1									
Do	Paxton	do	1898	234	do	do				4.7									
Do	do	do	1899	280	do	do				7.7									
Do	Phillipston	do	1899	282	do	do				8.2									
Do	Princeton	do	1897	208	do	do				3.8									
Do	Shrewsbury	do	1897	213	do	do				3.2									
Do	do	do	1899	292	do	do				3.5									
Do	Southbridge	do	1920	17503	do	Biotite schist		2.76	.4	4.3				16.3	11				
Do	Sterling	Local	1897	83	do	Diabase				2.1									
Do	do	Prosp	1898	265	do	Syenite				2.3									
Do	Uxbridge	do	1896	63	do	Granite		3.02		3.2									
Do	do	do	1898	239	do	Field stone				3.8									
Do	Webster	do	1901	411	do	Mica schist		2.75	.2	6.3									
Do	West Auburn	do	1897	114	do	Limestone				3.3									
Do	do	Local	1912	5988	do	Mica gneiss		2.65	.3	3.0			21,950	18.0	13				
Do	Westminster	Prosp	1897	199	do	Field stone				4.8									
Do	do	do	1899	290	do	do				5.7									
Do	West Rutland	do	1916	10089	do	Granite		2.63	.1	2.9				18.6	12				
Do	do	do	1916	10090	do	do		2.59	.5	6.7				18.0	7				
Do	do	do	1916	10091	do	Biotite gneiss		2.69	.5	6.5				16.3	9				
Do	Whitinsville	Comm	1921	18741	do	Gneissoid granite		2.63	.2				32,080	18.7	8				

Do	do	do	1921	18742	do	do		2.63	.3				23,980	18.3	6				
Do	Worcester	Prosp	1897	184	do	Field stone				3.4									
Do	do	do	1897	212	do	do				3.8									
Do	do	do	1898	263	do	do				4.4									
Do	do	do	1898	266	do	Granite				4.6									
Do	do	Local	1915	8394	do	do		2.60	.4	5.6				19.0	5				

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Alger	Eben Junction	Prosp	1906	1633	Stone	Siliceous dolomite		2.70	1.1	5.7				14.7	5				
Do	Grand Island	do	1905	1243	do	Dolomitic sandstone.		2.55	.3	5.2				17.3	7				
Do	Rock River	do	1907	2216	do	Siliceous limestone.		2.55	2.5	7.2				10.2	7				
Do	Trenary	Local	1911	5581	do	Argillaceous limestone.		2.70	.3	5.6				13.8	6				
Alpena	Alpena	Comm	1906	1594	do	Limestone		2.65	.9	7.9								2.5	1½–#4
Do	Ossineke	do	1932	34752	Gravel	LGS	1½	2.65	1.1	6.7		A						9.9	1½–#4
Do	do	do	1932	34782	do	LDoQzSG	1½	2.64	1.1	7.8		A							
Arenac	Au Gres	Prosp	1907	2105	Stone	Limestone		2.65	.7	3.3				14.3	8				
Benzie	Honor	Local	1927	29329	Gravel	LCQ	1½	2.58										S	1½–#4
Berrien	Buchanan	do	1933	34954	do	LSCGSh	¾	2.53	2.9									13.0	¾–#4
Do	do	do	1933	34958	do	SSlGCSc	¾	2.52	3.0									11.0	¾–#4
Calhoun	Homer	do	1933	34938	do	LGQzDCS	1½	2.66	1.3	6.2		A						5.4	1½–⅜
Do	do	do	1933	34939	do	LCGQQzD	¾	2.65	1.4									4.2	⅜–#4
Charlevoix	Charlevoix	do	1911	5004	Stone	Limestone		2.35	2.9	9.9				.0	4				
Do	do	do	1929	32288	Gravel	do	1½	2.68	.9	6.6		A						10.0	1½–#4
Chippewa	Kinross	Comm	1932	34727	do	DSGQz	1½	2.67	1.1	9.4		A						12.8	1½–#4
Do	do	do	1932	34788	do	LGShS	1½	2.68	.9	9.4		A						30.0	1½–¾
Do	Rudyard	do	1932	34725	do	DSQzG	1½	2.70	1.4	12.3		A						13.3	1½–#4
Do	do	do	1932	34792	do	DSQzG	1½	2.70	1.4	9.7		A							
Do	Sault Sainte Marie.	Prosp	1912	6399	Stone	Uralitic diabase		2.90	.3	2.7				18.8	13				
Do	do	do	1913	6483	do	Altered diabase		3.00	.3	2.1				18.7	31				
Do	do	do	1913	7084	do	Altered gabbro		3.10	.1	4.1				17.3	12				
Clare	Clare	Local	1933	34911	Gravel	DGLQz	2	2.68	1.0	7.6								4.1	2–#4
Do	Harrison	do	1933	34869	do	SLCQzG	2	2.64	1.6	6.5		A						4.8	2–#4
Delta	Wells	Prosp	1906	1848	Stone	Limestone		2.70	.6	3.7				16.0	11				
Do	Wells Township	Local	1906	1846	do	Dolomite		2.80	.2	3.4				16.5	12				
Dickinson	Breitung Township.	Prosp	1906	1621	do	Slate		3.35	.7	4.3									
Do	Iron Mountain	do	1906	1622	do	Dolomite		2.85	.2	4.6				17.2	8				
Do	do	do	1906	1741	do	Slate		3.15	.6	5.2									
Do	do	do	1907	2008	do	Sandstone		3.05	.7	4.9									
Do	do	do	1908	2603	do	Altered diorite		2.95	.2	3.9									
Do	do	do	1908	2611	do	Amphibolite		2.90	.4	3.2				18.1	29				
Do	do	do	1908	2625	do	Ferruginous sandstone.		3.25	.8	5.7									
Do	do	do	1908	2675	do	Quartzite		2.60	.4	3.5									
Do	do	do	1911	5146	do	Hornblende schist		3.05	.1	1.7				18.6	27				
Do	Turner	do	1906	1782	do	Gneissoid granite		2.65	.3	4.2				18.5	13				
Eaton	Bellevue	do	1910	4206	do	Limestone		2.55	1.9	7.5				11.8	4				
Do	do	do	1910	4320	do	do		2.65	.5	4.7				15.3	7				
Do	do	do	1910	4321	do	do		2.70	.3	3.2				16.0	11				
Emmet	Levering	Local	1933	34879	Gravel	LDoC	1½	2.60	2.2	13.4		A						9.9	1½–#4
Do	do	do	1933	34913	do	LDo	1½	2.65	1.7	10.0		A						6.7	1½–#4
Do	Petoskey	do	1905	1335	Stone	Limestone		2.60	.8	4.5				13.8	12				
Do	do	Comm	1909	4075	do	do		2.65	1.0	5.1				14.5	12				
Do	do	do	1910	4682	do	Argillaceous limestone.		2.65	.8	5.6				6.3	7				
Do	do	Prosp	1910	4854	do	Siliceous limestone.		2.55	1.5	8.3				18.8	13				
Do	do	Comm	1921	20371	do	Argillaceous limestone.		2.64	.8	5.9				13.3	7				
Do	do	do	1921	20372	do	do		2.62	.8	5.3				15.7	6				
Do	do	do	1921	20373	do	do		2.64	.6	6.3				16.3	3				
Do	do	do	1921	20374	do	do		2.65	.5	4.9				14.0	9				
Gogebic	Bessemer	Prosp	1911	5034	do	Altered diabase		2.90	.2	5.0				17.5	7				
Houghton	Calumet	Local	1904	1131	do	do		2.80	.7	3.2				16.5	18				
Do	do	do	1904	1132	do	do		2.90	.2	4.2				13.0					
Do	Hancock	do	1910	4153	do	Altered basalt		2.95	1.2	2.6				18.1	10				
Do	Houghton	Prosp	1913	6913	Slag	Smelter		3.40	.2	6.3				16.7	8				
Huron	Bay Port	Comm	1905	1287	Stone	Dolomitic limestone.		2.65	.8	2.7				15.1	12				
Do	do	do	1905	1288	do	do		2.65	.8					15.3	12				
Do	do	do	1909	4063	do	Limestone		2.65	1.0	3.3				15.4	11				
Do	do	do	1930	32465	do	Siliceous limestone.												S	1½–1

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MICHIGAN—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Huron	Bay Port	Comm	1931	33285	Stone	Limestone									10				
Do	do	do	1938	46189	do	do												[4] 18.7	2–#4
Do	do	do	1938	46646	do	do												[4] 9.8 [8] 22.6	2–#4 2–#4
Do	do	do	1938	46647	do	do												[4] 9.8 [8] 19.1	2–#4 2–#4
Do	do	do	1939	46896	do	do												5.5	1½–#4
Do	do	do	1939	46930	do	do												[4] 23.7	1½–#4
Do	do	do	1939	46931	do	do												[4] 10.8	2–#4
Do	Port Austin	Local	1909	3767	do	Sandstone		2.55	2.2	7.6				0.0	5				
Do	do	do	1909	4027	do	Altered diabase		3.05	.1	1.8				18.8	29				
Do	Windsor Township.	Prosp	1912	6082	do	Siliceous limestone.		2.65	.6	4.0				16.0	13				
Iosco	Whittemore	do	1907	2081	do	Limestone		2.60	1.2	4.5				12.5	9				
Do	do	do	1908	2548	do	do		2.65	1.1	5.9				13.3	6				
Iron	Iron River	do	1949	76710	Gravel						20.7	A							
Do	Kenton	Local	1950	80306	do	DSlQzSShQ					16.9	B							
Do	do	do	1950	81114	do			2.86	1.1		15.8	B							
Jackson	Jackson	Prosp	1907	1970	Stone	Limestone		2.60	1.3	5.6				12.7	5				
Do	do	do	1907	1971	do	do		2.70	1.8	9.5				8.3	5				
Kalamazoo	Kalamazoo	Comm	1919	14632	Gravel	LCG	1½			7.9		A							
Kalkaska	Kalkaska	do	1932	34784	do	LDQzGRS	1½	2.60	1.9	10.9		A						13.6	1½–#4
Kent	Grand Rapids	do	1921	18658	do	SLGDoQz				4.9		A							
Do	do	do	1935	40878	do	QQzDo				6.0	22.6	A							
Keweenaw	Mandan	Prosp	1909	3469	Stone	Diabase		2.95	.1	3.0				18.2	17				
Do	do	do	1909	3507	do	Altered diabase		2.85	.1	4.2				16.8	12				
Do	do	do	1909	3508	do	do		2.85	.1	5.1				12.3	6				
Lapeer	Brown City	Local	1932	34718	Gravel	SQzGDoGnQ	2	2.65	1.6	7.1		A							
Livingston	Green Oak	Comm	1933	34825	do	LCQzQS	1½	2.68	.9	4.4		B						3.6	1½–#4
Do	do	do	1939	46890	do	GDoCQ	2											[4] 5.1	2–#4
Mackinac	Garfield Township.	Prosp	1913	6476	Stone	Limestone		2.70	.3	4.6				15.3	5				
Marquette	Marquette	do	1904	1133	do	Hornblende schist		2.90	.1	4.7				18.0	30				
Do	do	do	1906	1635	do	Chloritized basalt		2.95	.2	2.1				17.2	23				
Do	do	do	1906	1636	do	do		2.95	.1	2.5				17.2	22				
Do	do	do	1906	1637	do	Slate		2.80	.3	4.8				15.2	10				
Do	do	do	1908	2455	do	Hornblende schist		2.80	.2	4.1				16.3	20				
Do	do	do	1908	2456	do	Altered diabase		2.65	1.1	4.5				16.0	12				
Do	do	do	1908	2645	do	do		3.00	.1	3.4				16.8	12				
Do	do	do	1908	2825	do	do		2.95	.2	3.7				17.2	19				
Do	do	do	1908	2826	do	Quartzite		2.65	.0	3.3									
Do	do	do	1908	3090	do	Altered diabase		3.00	.1	1.5				18.3	33				
Do	do	do	1909	3198	do	Epidote-chlorite schist.		2.90	.1	2.6				16.8	18				
Do	do	do	1909	3199	do	Hornblende schist		3.05	.2	2.5				17.8	26				
Do	do	do	1911	5030	do	Altered diabase		2.95	.1	2.6				16.7	20				
Do	do	do	1916	9855	do	Hornblende gneiss		2.95	.3					19.3	22				
Do	do	do	1916	9856	do	Altered diabase		2.95	.4					18.7	25				
Do	do	do	1916	9857	do	Amphibolite		2.90	.3					18.0	17				
Do	do	do	1916	9975	do	Altered diabase		2.90	.3	2.1				19.3	12				
Do	do	Local	1916	9976	do	do		2.80	.2	3.8				16.0	13				
Do	do	do	1916	9977	do	do		2.95	.3	3.1				18.3	11				
Do	Negaunee	Prosp	1906	1675	do	Slate		2.80	.3					16.8	12				
Do	do	do	1906	1676	do	Altered diabase		2.75	.9	5.5				18.5	9				
Do	do	do	1908	2688	do	do		2.90	.1	4.0				17.4	9				
Do	do	do	1913	7152	do	Altered gabbro		3.00	.1	2.9				17.8	10				
Do	do	do	1913	7153	do	do		2.95	.1	2.7				17.3	12				
Mecosta	Barryton	Comm	1940	52544	Gravel	QGBLD	2	2.68	.8		21.8	A							
Monroe	Bedford	Local	1910	4955	Stone	Dolomite		2.65	.2	4.1				14.9	10				
Do	Dundee	Prosp	1917	11223	do	Limestone		2.50	.8	9.0				.0	4				
Do	Ida	Comm	1906	1629	do	Dolomite		2.60	2.1	6.0				13.3	7				
Do	do	Prosp	1911	5003	do	Calcareous sandstone.		2.65	.2	6.2				13.4	13				

Do	Monroe	Comm	1909	3834	do	Dolomite		2.65	1.7	4.0				14.4	6			
Do	do	do	1909	3835	do	do		2.65	2.0	4.5				14.8	5			
Do	do	do	1912	6085	do	do		2.80	.9	6.4				5.7	3			
Do	do	do	1916	9889	do	do		2.80	.4	3.6				17.0	16			
Do	do	do	1916	9988	do	Argillaceous dolomite.		2.65	1.8	4.2			11,750		5			
Do	do	do	1916	9989	do	do		2.80	.4	4.7				13.5	5			
Do	do	do	1916	10041	do	Dolomite		2.75	1.0	3.6				17.0	17			
Do	do	do	1924	24965	do	do		2.50	2.8	4.8				16.0	6		U	1½–1
Do	do	do	1925	27371	do	Siliceous dolomite		2.61	2.2	7.6			37,200	17.3	6		U	1½–1
Do	do	do	1925	27390	do	Dolomite		2.66	.4	5.0							S	1½–1
Do	do	do	1928	30707	do	do											S	1½–1
Do	do	do	1929	31394	do	Limestone		2.76	.9								S	1½–1
Do	do	do	1929	31395	do	Argillaceous limestone.		2.50	3.4								Q	1½–1
Do	do	do	1929	31396	do	Limestone		2.71	1.1								Q	1½–1
Do	do	do	1929	31397	do	Argillaceous limestone.		2.43	4.1								U	1½–1
Do	do	do	1929	32001	do	Limestone											Q	1½–1
Do	do	do	1929	32002	do	Argillaceous limestone.											U	1½–1
Do	do	do	1929	32003	do	do											U	1½ 1
Do	do	do	1929	32004	do	Limestone											Q	1½–1
Do	do	do	1933	34888	do	do											[9] 8.0	2½–2
Do	do	do	1933	34889	do	do											[9] 52 0	2½–2
Do	do	do	1933	34890	do	do											[9] .0	2½–2
Do	do	do	1933	34891	do	do											[9] 88.0	2½–2
Do	do	do	1939	46884	do	Dolomite											[4] 37.1	1½–#4
Do	do	do	1939	46885	do	do											[4] 31.0	2½–#4
Do	Scofield	Local	1920	15771	do	do		2.61	1.4	5.2				13.3	7			
Oakland	New Hudson	Comm	1930	30644	Gravel		2			7.9		A						
Do	Oxford	do	1930	30645	do	LSQQzC	2			10.6		A						
Do	do	do	1939	46888	do	GDDoQzC	1										[4] 9.0	1½–#4
Do	do	do	1939	46889	do	GDDoQzC	2										[4] 6.5	2½–#4
Ogemaw	West Branch	Local	1932	34706	do	DoQzG	2	2.66	1.0	4.4		A					4.6	2–¼
Do	do	do	1932	34790	do	LDoQzCG	2	2.64	1.0	5.1		A						
Presque Isle	Calcite	Comm	1915	9593	Stone	Limestone		2.65	.4	5.6			10,330	14.3	5			
Do	do	do	1917	11752	do	do		2.52	1.2	6.9				5.9	4			
Do	do	do	1919	14623	do	do		2.61	.8	9.5				13.3	5			
Do	do	do	1926	28689	do	do		2.50	1.4	6.8				6.0	5			
Do	Rogers City	Prosp	1915	9222	do	do		2.60	1.2	5.4								
Do	do	Comm	1923	24398	do	do		2.50	1.3	7.0				10.7	4			
Sanilac	Brown City	Local	1933	34786	Gravel	LDoQGR	2	2.65	1.4	8.8		A					8.2	2–¼
Do	Deckerville	Prosp	1911	5025	Stone	Fieldstone				7.4								
Schoolcraft	Inwood Township.	Local	1919	14689	do	Dolomitic marble		2.83	.3	4.8				16.0	8			
Do	Manistique	do	1908	2806	do	Limestone		2.70	.2	4.5				15.8	6			
Do	do	do	1908	2807	do	do		2.75	1.6	4.2				14.3	6			
Do	do	do	1908	2808	do	do		2.80	.6	2.7				16.7	12			
Do	do	Prosp	1908	2874	Slag			2.70	1.1	23.4				18.0	7			
Do	Port Inland	Comm	1931	34501	Stone	Limestone		2.66	.6	5.6					5			
Do	do	do	1934	40180		do					33.7	A						
Do	do	do	1934	40856	do	Argillaceous limestone.					32.0	B						
Do	do	do	1938	46295	do	Limestone											1.1	1¼–⅜
Do	do	do	1950	82083	do	do					28.3	A						
Washtenaw	Ann Arbor	do	1939	46886	Gravel	GQzDoDiSL	2										[4] 3.9	2–#4
Do	do	do	1939	46887	do	do	1										[4] 12.2	1–#4
Wayne	Detroit	Prosp	1909	3254	Stone	Dolomite		2.50	2.4	4.8				12.6	4			
Do	do	Comm	1909	3255	do	Limestone		2.70	.5	5.4				18.3	9			
Do	do	do	1910	4821	Slag	Blast furnace		2.55	.6	9.3				11.3	2			
Do	do	Prosp	1915	8301	Stone	Dolomite		2.60	.1	4.9				14.8	4			
Do	do	Comm	1921	18864	Slag	Blast furnace		1.91	4.7	18.3								
Do	Sibley	do	1916	9888	Stone	Limestone		2.55	1.8	12.4				15.3	6			
Do	do	do	1923	24477	do	do		2.69	.4	3.8				15.7	7			
Do	do	do	1926	28694	do	do		2.57	1.4	6.2				12.3	5			
Do	do	do	1926	28695	do	do		2.47	2.0	7.2				9.7	6			
Do	do	do	1926	28696	do	do		2.57	1.1	5.1				11.3	7			
Do	do	do	1930	33161	do	do									6			
Do	Trenton	do	1934	40164	do	do					53.0	A						

[4] Magnesium sulfate test.

[8] 25 cycles, freezing and thawing.

[9] 10 cycles, sodium sulfate test.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MINNESOTA

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Benton	Sauk Rapids	Comm	1917	11703	Stone	Biotite granite		2.65	0.2	4.0				19.0	9				
Do	do	do	1917	11704	do	Granite		2.61	.3	7.0				18.7	7				
Do	do	do	1917	11705	do	Hornblende granite.		2.71	.2	3.2				18.7	8				
Blue Earth	Mankato	Local	1915	9532	do	Argillaceous dolomite.		2.55	2.0	4.7				16.8	14				
Do	do	do	1917	11341	do	Calcareous sandstone.		2.50	3.1	6.4				5.3	2				
Carlton	Carlton	do	1904	1010	do	Slate		2.80	.4	5.9				11.2	5				
Do	do	do	1908	2442	do	do		2.75	.3	2.8				12.7	10				
Cook	Grand Marais	Comm	1948	75165	Gravel	SyB	3		3.2		11.0	A						4.8	2½-#4
Do	do	Local	1948	75210	do	SyB	3		1.6		24.9	A						1.9	2½-#4
Dodge	Mantorville	do	1909	3764	Stone	Dolomite		2.40	5.5	11.5				2.0	3				
Do	do	do	1924	25213	do	do		2.35	4.6	8.4				13.0	5				
Hennepin	Minneapolis	Comm	1922	21029	do	Argillaceous limestone		2.58	1.6	7.2			23,500	14.0	8				
Do	do	do	1927	29690	do	Sandstone		2.22	4.5	13.2								U	1½-1
Do	do	do	1942	58550	Gravel	LGB(Q)		2.74	1.1		20.0	B							
Kandiyohi	Willmar	do	1922	22520	do	DoGCS	2			6.2		A							
Lake	Sand Lake	Local	1946	72370	do	GTQzGnSy					17.1	B							
Do	do	do	1946	72371	do	GTRScQ					17.9	B							
Mille Lacs	Isle	Comm	1942	58189	Stone	Granite					30.7	B							
Do	do	do	1943	61700	do	do		2.66	.2		35.0	B							
Nicollet	Courtland	do	1905	1170	do	Quartzite		2.65	.2	1.6				19.0	22				
Do	do	do	1907	2340	do	do		2.65	.1	2.1				19.7	12				
Do	do	do	1922	21233	do	do		2.66	.1	4.3				18.7	10				
Pine	Sandstone	do	1914	7954	do	Sandstone		2.50	.9	11.6				15.2	4				
Do	do	do	1915	8943	do	do		2.50	.8	13.8				14.8	4				
Do	do	do	1923	24126	do	do				13.2									
Do	do	do	1925	27569	do	do		2.24	4.3	14.4			10,920	14.7	4				
Do	do	do	1937	44202	do	do					93.6	A							
Pipestone	Jasper	do	1942	59097	do	Quartzite					4.0	B							
Do	do	do	1942	59098	do	do		2.65					61,300		21				
Do	Pipestone	Local	1908	2410	do	Ferruginous sandstone.		2.75	.2	4.6				14.5	16				
Ramsey	Saint Paul	Comm	1925	27392	do	Argillaceous limestone.		2.65	1.4									U	1½-1
Redwood	Redwood Falls	Prosp	1908	2426	do	Granite gneiss		2.65	.2	2.4				19.0	16				
Do	do	do	1908	2427	do	Granite [1]		2.15		15.2					2				
Renville	Morton	Comm	1942	59095	do	Granite		2.67					38,050		9				
Do	do	do	1942	59096	do	do					22.5	B							
Rock	Jasper	do	1916	10485	do	Quartzite		2.62	.1	2.0				19.7	17				
Do	Luverne	do	1919	14495	do	do		2.69	.2	2.4									
Do	do	do	1930	32471	do	do		2.68	.1	3.0				19.3	25				
Do	do	do	1940	51291	Gravel	QzDoB	1½	2.62	1.8		31.7	A							
Do	do	do	1940	51961	do	DoGQz	1½	2.63	1.6		29.4	A							
Saint Louis	Biwabik	do	1947	74112	do	GDiSc	⅜				18.7	D							
Do	Duluth	do	1903	807	Stone	Olivine gabbro		2.75	.1	4.7					10				
Do	do	do	1911	5301	do	Altered gabbro		2.75	.3	5.2				16.8	8				
Do	do	Prosp	1918	13725	do	Sandstone		3.00	.1	3.8				18.7	18				
Do	do	Comm	1922	22705	do	Basalt		2.86	.1	1.7				18.7	29				
Do	do	do	1931	33279	do	do		2.86	.1	1.8			50,430	19.3	32				
Do	Ely	do	1943	61699	do	Olivine gabbro		2.87	.2		31.4	C							
Do	Mesaba	Local	1919	15214	do	Epidosite		3.49	.2	2.6				18.7	20				
Sherburne	Saint Cloud	do	1905	1241	do	Granodiorite		2.70	.1					18.0	19				
Swift	Appleton	Comm	1921	19610	Gravel	Dolomite	1			8.2		B							
Do	do	do	1921	20135	do	DoG	1½			6.9		A							
Do	do	do	1925	27394	do	DoLCG		2.66	.5	7.0		A							
Winona	Minnesota City	do	1908	2909	Stone	Dolomite		2.70	1.0	5.0				13.3	5				
Do	Stockton	Prosp	1911	5524	do	Argillaceous dolomite.		2.65	1.8	7.9			16,000	5.6	5				

Adams	Natchez	Comm	1938	44981	Gravel	Chert	1½				19.2	A							
Do	do	do	1938	44982	do	do	¾				19.1	B							
Do	do	do	1938	46357	do	do					19.0	B							
Do	Washington	do	1937	44624	do	C(Q)	1				19.2	B							
Do	do	do	1937	44625	do	C(Q)	1½	2.53	1.2	5.3		A							
Amite	Stephenson	do	1935	42407	do	CQ	1½	2.42	2.7	5.2		A						11.9	1½-#4
Do	do	do	1935	42493	do	CQ	1½			5.5	18.7	B							
Do	do	do	1935	42494	do	CQ	1½			7.0		B							
Do	do	do	1935	42498	do	Chert	1½			6.1		B							
Do	do	do	1935	42569	do	do	1½			3.7		B							
Do	do	do	1935	42570	do	do	1			4.3		B							
Do	do	do	1935	42571	do	do	1½			3.0		B							
Do	do	do	1935	42592	do	do	1½			6.3	19.3	A							
Do	do	do	1935	42594	do	C(Q)	1½			6.5		A							
Do	do	do	1935	42608	do	Chert	1½			3.6		B							
Attala	Kosciusko	Prosp	1908	2590	Stone	Sandstone		2.60	.6	6.3				19.2	14				
Do	do	Local	1942	56847	do	Quartzite and sandstone.					44.0	A							
Chickasaw	Houston	Prosp	1912	5890	do	Argillaceous limestone.		2.40	4.2	12.2				6.7	5				
Do	Woodland	do	1913	6812	do	Sandstone		2.60	3.0	23.7									
Claiborne	Carlisle	Comm	1937	44616	Gravel	Chert	1½			3.2		A						6.7	2-#4
Do	do	do	1938	46332	do	do	1½	2.45	2.6		19.9	A							
Do	do	do	1938	46356	do	CQ					20.8	B							
Do	Saint Elmo	do	1937	44808	do	CQ	1½	2.48	1.8	4.1		A							
Do	do	do	1939	46554	do	Chert	1½	2.53	1.2		18.9	A							
Do	Utica	do	1942	60548	do	do	1	2.40	2.3		19.3	B							
Copiah	Crystal Springs	do	1943	62237	do	CQ (Qz)	1	2.60	.4		19.8	C							
Do	do	do	1948	74590	do	Chert					36.8	B							
Do	do	do	1948	74591	do	do					18.7	B							
Do	do	do	1948	74680	do	do		2.40	3.5		19.0	B							
Do	do	do	1948	74704	do	do	1				35.5	B							
Do	do	do	1948	74705	do	do	1				20.0	B							
Do	do	do	1949	76887	do	do	1½	2.49	2.2		17.2	B						6.0	1-#4
Do	do	do	1950	82034	do	do	1½				17.6	B						3.2	1½-#4
Do	Gatesville	do	1948	74960	do						16.0	B							
Do	Myles	do	1936	43039	do	CQ	1½			3.8		A							
Do	do	do	1940	49460	do	C(QQz)		2.45	2.8		20.5	A				104	1½-#4		
DeSoto	Hernando	Prosp	1923	23062	do	Chert	1½			5.2		A							
Forrest	Hattiesburg	Comm	1939	46906	do	do	1			3.2		C						2.0	1½-#4
Do	do	do	1942	60547	do	C(Q)	1	2.55	1.0		17.3	B							
Do	do	do	1943	62239	do	Chert	1	2.55	.9		18.6	C							
Do	do	do	1946	72524	do	C(Q)					18.2	B							
Do	do	do	1946	72525	do	C(Q)					18.0	B							
Hancock	Logtown (Pearl River).	do	1928	30796	do	Chert	1	2.44		5.1		B							
Hinds	Institute	do	1938	44916	do	do	2	2.50	1.6		19.6	A							
Holmes	Durant	Prosp	1916	10287	Stone	Sandstone		2.31	3.3	7.8				18.0	8				
Do	Lexington	Comm	1940	48947	Gravel	CQ	1½				19.2	A							
Do	do	do	1940	50684	do	C(Q)	1½	2.51	1.5		18.8	B							
Do	do	do	1948	74667	do	C(Q)	1½	2.51	1.7		18.1	B						2.0	1½-#4
Do	do	do	1948	75094	do	CQ	1½				16.7	B						2.3	1½-#4
Do	do	do	1948	75979	do	Chert	1½	2.53	.9		18.3	A						1.2	1½-#4
Do	do	do	1950	82033	do	do	1½				18.4	B						4.6	1½-#4
Do	Tchula	do	1940	52353	do	do	2	2.50	1.7		19.9	A				104	2-#4		
Do	do	do	1941	54935	do	C(Q)	1½	2.51	1.5		19.1	A							
Jasper	Bay Springs	Prosp	1913	6739	Stone	Argillaceous limestone.		2.45	2.3					11.2	6				
Do	do	do	1913	6742	do	do		2.60	1.6					10.7	5				
Do	do	do	1933	34802	do	Limestone		2.50	1.7	5.5				12.0	6			S	1½-1
Jefferson	Stonington	do	1901	453	do	Sandstone		2.10	8.9	31.8									
Do	Union Church	do	1946	72125	Gravel	Chert					19.5	B							
Lauderdale	Meridian	do	1914	8240	Stone	Opaline sandstone		2.25	.4	14.9				18.5	5				
Do	do	do	1914	8241	do	Sandstone		2.45	1.2	6.2				19.3	10				
Do	do	do	1925	26672	do	Opaline sandstone		1.89	10.5	17.0				18.0	5				
Do	do	do	1926	28177	do	Sandstone		1.69	17.9	18.1				9.3	5				
Do	do	do	1926	28673	do	Argillaceous limestone.		1.81	11.6	21.0				18.0	4				
Lawrence	Wanilla	Comm	1938	46126	Gravel		1½				19.5	A							
Lincoln	Brookhaven	Local	1948	76030	do	CQ	1½	2.54	1.2		18.6	A							
Do	Caseyville	do	1946	72124	do	C(Q)					24.5	A							
Do	Pleasant Hill	do	1946	72126	do	C(Q)					20.6	B							
Lowndes	Columbus	Prosp	1906	1514	Stone	Limestone		2.55	2.2	4.2				7.4	6				
Do	do	do	1912	6080	do	Argillaceous limestone.		2.60	1.5	5.3				10.0	6				
Do	do	Comm	1941	52920	Gravel	Chert	1½	2.40	3.4		15.2	A							

[1] Weathered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MISSISSIPPI—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Lowndes	Columbus	Comm.	1941	54053	Gravel	Chert					15.4	B							
Do	do	do	1941	54054	do	do					16.7	A							
Do	do	do	1948	74335	do	C(Q)		2.61	3.2		15.1	A							1½-#4
Do	do	do	1948	75000	do	Chert	1½				17.3	B							
Do	do	do	1948	75904	do	do	1½	2.41	2.8		15.6	A							
Do	do	do	1948	76028	do	do	1½	2.40	3.1		17.2	A							
Do	do	do	1948	76286	do	do	1½	2.39	3.4		16.8	A						5.5	1-#4
Marshall	Holly Springs	Prosp.	1912	5897	Stone	Ferruginous sandstone.		2.90	1.0	28.1				15.4	3				
Monroe	Aberdeen	Comm.	1948	75212	Gravel	CQ	1½				17.2	A						8.4	1½-#4
Do	Amory	do	1940	51240	do	Chert	1½	2.37	3.0		15.4	A							
Do	do	do	1941	54052	do						15.2	B							
Do	do	do	1942	60545	do	Chert	1	2.38	3.5		15.2	C							
Do	do	do	1943	61924	do	do	1½	2.44	1.8		15.1	A							
Neshoba	District No. 1	Prosp.	1913	6607	Stone	Sandstone		1.90	11.8	10.1				11.0	5				
Newton	Chunky	do	1920	16131	do	do		2.00	7.2	9.8				3.3	5				
Noxubee	Macon	do	1912	5871	do	Limestone		2.65	1.0	4.5				13.7	10				
Pike	Magnolia (Clear Creek).	Local	1922	21069	Gravel	Chert	1½			8.3		A							
Pontotoc	Pontotoc	Prosp.	1918	12692	Stone	Limestone		2.57	.6	7.0				17.0	9				
Do	do	do	1936	43028	do	Siliceous limestone.				5.3	31.5	A			7			Q	1½-1
Do	do	do	1936	42029	do	do				6.8	37.7	A			5			S	1½-1
Rankin	Brandon	do	1917	11791	do	Argillaceous limestone.		2.50	2.0	5.6				12.0	5				
Do	do	Local	1933	34801	do	do		2.40	3.3	6.4				13.3	7			S	1½-1
Do	do	do	1933	34895	do	do		2.27	5.8	7.8				1.7	6			U	1½-1
Do	do	do	1933	34896	do	do		2.32	5.2	8.0				8.0	6			U	1½-1
Tishimingo	Dennis	do	1940	51016	Gravel	Chert					19.7	B							
Do	Iuka	Prosp.	1919	14283	Stone	do		2.04	6.2	12.2									
Do	do	Comm.	1935	42155	Gravel	do	1½	2.21	.6	3.0		B						[10] 13.2	1½-#4
																		[10] 53.2	1½-#4
Do	do	do	1935	42156	do	do	1	2.22	.6	2.8		B						[10] 14.4	1½-#4
																		[10] 52.9	1½-#4
Union	New Albany	Prosp.	1916	10098	Stone	Sandstone		2.50	1.6	11.1				18.7	7				
Warren	Ballground	do	1921	20947	do	Fossiliferous limestone.		2.51	2.4	9.2				11.7	7				
Do	Vicksburg (Mississippi River).	Comm.	1920	17334	Gravel	C(Q)	1½			5.8		A							
Do	do	do	1937	44673	do	Chert	1½			3.6		B							
Do	do	do	1938	46090	do	CQ	2				20.8	A							
Do	Vicksburg	Prosp.	1938	46146	Stone	Marl				41.2	98.0	A							
Washington.	Greenville	Comm.	1942	60546	Gravel	C(QQz)	1½	2.50	2.0		19.6	B							
Wilkinson	Rosetta	Prosp.	1943	61096	do	QQzC	1				17.0	C							

MISSOURI

Adair	Kirksville	Prosp.	1906	1775	Stone	Limestone		2.65	0.8	4.9				16.5	8				
Barry	Cassville	do	1917	11510	do	Marble		2.71	.4	5.7				11.7	3				
Barton	Lamar	do	1924	24611	do	Crystalline limestone.		2.57	.4	8.5				5.0	4			S	1½-1
Bollinger	Lutesville	Comm.	1921	20310	Gravel	Chert	2½			14.1		A							
Boone	Columbia	Prosp.	1905	1289	Stone	Limestone		2.65	.5	8.8				.0	4				
Do	do	do	1905	1290	do	do		2.60	.6	6.6				7.7	5				
Do	Rocheport	do	1912	6375	do	do		2.65	.8	9.3			13,900	12.3	3				
Buchanan	Saint Joseph	Comm.	1941	55008	do	Argillaceous limestone.		2.59	2.0		32.2	B							
Do	do	do	1941	55009	do	do		2.63	1.5		27.4	B							
Callaway	Portland	Local	1912	6376	do	Argillaceous dolomite.		2.45	2.5	8.7									
Cape Girardeau.	Cape Girardeau	Comm.	1910	4398	do	Limestone		2.69	.3	3.7				15.8	9				
Do	do	do	1920	15444	do	do		2.70	.2	4.3				17.0	5				
Do	do	do	1922	21089	do	do		2.70	.1	4.7				16.0	9				
Do	do	do	1928	30666	do	do												S	1½-1

Cass	Harrisonville	Prosp	1916	10410	do	do		2.68	.3	5.6				14.7	6				
Do	West Line	do	1916	10169	do	do		2.51	.7	11.5			16,690	13.5	5				
Cooper	Sweeney	Local	1912	6377	do	Argillaceous limestone.		2.65	1.6	4.8			14,900	13.5	8				
Franklin	Pacific (Meramac River).	Comm	1935	40490	Gravel	Chert				5.2	23.6	B							
Greene	Springfield	Prosp	1904	1027	Stone	do		2.65	.6	5.4									
Howell	West Plains	Comm	1949	77321	do	Dolomitic limestone.		2.56	3.2		33.0	A						31.3	1–#4
Do	do	do	1949	78012	do	do												34.5	1½ #4
Do	Willow Springs	Prosp	1947	72781	do	Sandstone							11,900		4			37.8	1½–#4
Do	do	do	1947	72782	do	Dolomitic limestone.							21,500		5			2.0	1½–#4
Iron	Ironton	do	1921	19634	do	Porphyry		3.28	.2	5.4				18.0	9				
Do	do	do	1921	20302	do	Fragmental hematite.		3.23	.1	2.4				18.3	16				
Jackson	Independence	Local	1913	7095	do	Limestone		2.65	.6	5.3				12.0	2				
Do	do	do	1913	7096	do	do		2.70	.4	7.2				14.1	2				
Do	do	Prosp	1913	7097	do	do		2.40	3.1	19.4				4.5	3				
Do	Kansas City	Local	1913	6472	do	do		2.65	.6	4.8				13.4	6				
Do	do	do	1913	6473	do	do		2.60	1.2	6.3				15.2	4				
Do	do	Comm	1917	11509	do	Marble		2.66	.4	7.5				8.3	2				
Do	do	do	1919	14731	do	Limestone		2.63	.4	5.5				13.3	5				
Do	Pixley	do	1941	55520	do	do		2.61	1.5		31.0	A							
Do	do	do	1941	55521	do	do		2.59	1.9		33.5	B							
Jasper	Carthage	do	1906	1862	do	do		2.70	.1	6.0				7.3	8				
Do	do	do	1912	6045	do	do		2.65	.5	6.4				7.7	5				
Do	Joplin	do	1921	19228	do	Chert				3.0									
Do	Prosperity	do	1921	20953	do	do		2.50	.2	5.5				19.3	4				
Do	Webb City	Local	1909	3203	do	do		2.60	.4	4.5									
Do	do	do	1919	14448	do	do		2.49	1.9	4.4				19.7					
Knox	Edina	Prosp	1906	1521	do	Limestone		2.65	.6	7.1				6.1	5				
Lafayette	Lexington	do	1911	5180	do	do		2.65	.8	4.5				13.7	6				
Macon	Macon	Local	1905	1511	do	do		2.70	.8	3.4				16.6	14				
Do	do	do	1905	1513	do	do		2.70	.6	3.9				16.1	14				
Madison	Fredericktown	Prosp	1950	80179	Gravel	CFe	2	2.48	1.6		20.4	A						2.5	2–½
Do	Mine La Motte	do	1904	1080	Stone	Dolomitic limestone.		2.80	.3	4.0				15.5	10				
Maries	Venus	do	1915	8308	do	Crystalline limestone.		2.65	.4	9.9				11.5	4				
Miller	Etterville	Comm	1932	34642	do	Limestone		2.69	.4	5.8				13.3	6				
Do	do	Local	1932	34744	do	do				5.2									
Montgomery.	Wellsville	Prosp	1922	21030	do	Argillaceous limestone.		2.62	1.0	5.5			23,560	14.0	4				
Newton	Neosho	do	1904	1016	do	Chert				4.6									
Do	do	do	1904	1125	do	do		2.00	8.9	6.9				19.6	21				
Perry	Gerler	do	1921	20529	Gravel	do	1½			12.7		A							
Do	do	do	1921	20530	do	do	2½			12.1		A							
Do	Wittenberg	Comm	1921	20377	Stone	do				4.3									
Do	Yount (Whitewater River).	Prosp	1949	77744	Gravel	CS	2	2.40	2.8		24.8	A						9.7	1½–#4
Pettis	Sedalia	Local	1907	2114	Stone	Limestone		2.65	.4	7.6				9.7	5				
Do	do	do	1907	2115	do	do		2.65	1.3	4.1				6.9	4				
Phelps	Rolla	Prosp	1950	81967	do	Sandstone					100.0	A							
Do	do	do	1950	81968	do	Siliceous dolomite					58.5	A							
Pike	Louisiana	Comm	1935	40892	Gravel	Chert				10.5	21.4	A							
SaintCharles	Hamburg	Prosp	1916	10251	Stone	Limestone		2.67	.4	5.2				12.3	4				
Do	do	do	1916	10252	do	do		2.63	.6	7.3				10.7	3				
Do	Weldon Spring	Local	1922	20968	do	do		2.60	.9	5.4			16,720	10.0	5				
Do	do	do	1922	22716	do	Crystalline limestone.		2.63	.5	6.7			12,480	12.3	4				
Saint Francois.	Leadwood	do	1949	77322	Gravel	Chert	1½	2.34	2.4		26.8	A						5.1	1½–#4
Saint Louis	Glencoe	Comm	1913	7284	Stone	Limestone		2.70	.4	6.4				10.2	4				
Do	Jefferson Barracks.	do	1939	48389	do	do				3.7									
Do	Maplewood	Prosp	1922	21198	do	do		2.69	.2	5.0				14.7	6				
Do	University City	Comm	1917	11743	do	do		2.54	.2	5.2				14.6	7				
Do	Vigus	do	1906	1634	do	do		2.65	.6	3.9				14.7	8				
Do	do	Local	1917	11789	do	do		2.62	1.3	6.7				14.0	5				
	Saint Louis	Comm	1904	1081	do	do		2.70	.4	3.8				14.6	9				
	do	do	1906	1596	do	do		2.70	.4	5.6				12.8	6				
	do	do	1914	8215	do	do		2.70	.4	4.9				16.6	7				
	do	do	1914	8216	do	do		2.70	.4	3.7									
	do	do	1914	8217	do	do		2.70	.4	3.8				14.3	6				
	do	Local	1914	8221	do	do		2.70	.8	3.8									
	do	do	1916	10237	do	do		2.68	.4	4.0				16.0	7				
	do	do	1916	10238	do	do		2.68	.4	5.1				15.3	5				
Stoddard	Bloomfield	Prosp	1921	20311	do	Chert				4.0									

[10] 100 cycles, freezing and thawing.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

MONTANA

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Cascade	Great Falls	Prosp	1919	13898	Gravel	QzS				[11] 9.7									
Custer	Clermont	do	1945	70088	Stone	Sandstone		2.48	2.9		28.0	A	16,980		7			11.4	1½–⅜
Do	do	do	1945	70089	do	do		1.63	19.1		33.3	A	5,730		6			13.9	1½–⅜
Deer Lodge	Anaconda	do	1907	2157	do	Limestone		2.65	.8	7.5				12.9	5				
Do	do	do	1920	15898	do	Quartzite		2.59	.7	5.6									
Do	do	do	1920	16155	do	do		2.62	.2	4.3									
Gallatin	Belgrade	do	1919	14362	Gravel	GnRSDo	2½			9.0		A							
Do	Bozeman	do	1906	1649	Stone	Sandstone		2.50	1.4	3.8				18.7	15				
Do	do	do	1906	1651	do	Calcareous sandstone.		2.60	1.1	3.4				16.5	15				
Do	Logan	Comm	1919	14363	do	Limestone		2.72	.2	3.4									
Do	Trident	do	1919	14466	do	do		2.67	.4	6.8									
Do	do	do	1919	14467	do	Siliceous limestone.		2.62	.9	3.4				17.0	14				
Hill	Inverness	Prosp	1946	72530	do	Volcanic sandstone.							740						
Do	do	do	1946	72531	do	Volcanic ash							2,560						
Do	do	do	1946	72532	do	do							6,400						
Jefferson	Butte	do	1950	81052	do	Granite					20.6	A							
Do	do	do	1950	81053	do	do					33.7	A							
Do	do	do	1950	81054	do	do					50.4	A							
Lewis and Clark.	East Helena	do	1920	15955	Slag	Smelter		3.40	.5	5.9				17.3	12				
Liberty	Chester	do	1946	72527	Stone	Calcareous sandstone.							3,900						
Do	do	do	1946	72528	do	Sandstone							2,000						
Do	do	do	1946	72529	do	Calcareous sandstone.		2.47	4.3				11,400					36.9	1½–#4
Do	do	do	1946	72534	do	Sandstone							900						
Do	do	do	1946	72535	Gravel	LCOQSG					21.8	A							
Do	Joplin	do	1946	72533	Stone	Sandstone							1,300						
Do	Lothair	do	1946	72526	do	Calcareous sandstone.							6,400						
Missoula	Missoula	do	1941	52996	do	Volcanic sandstone.		2.37	4.6		30.6	A							
Do	do	do	1941	52997	do	do		2.46	3.1		34.5	A							
Park	Gardiner	Local	1947	74155	Gravel	RS(QDi)	3	2.51	2.4		30.6	D						26.4	1½–#4
Do	Livingston	Prosp	1919	13896	do	RG				[11] 1.9									
Do	do	Comm	1919	14360	Stone	Basalt		2.86	1.1	4.6				16.7	10				
Powder	Ashland	Prosp	1947	73178	Gravel						34.3	A							
Rosebud	Cartersville	do	1945	70084	Stone	Calcareous sandstone.		2.61	1.2		15.9	A	31,530		8			4.8	1½–⅜
Do	Rosebud	do	1945	70090	Gravel	CLQzGB	1½	2.61	.6		16.9	A						3.6	1½–#4
Do	Thurlow	do	1945	70085	Stone	Sandstone		2.46	4.0		39.2	A	14,890		9			48.5	1½–⅜
Silver Bow	Silverbow	do	1922	21399	do	Altered andesite		2.49	.9	6.1			17,380	17.0	9				
Do	do	do	1922	21400	do	Altered trachyte		2.45	1.1	6.3									
Yellowstone.	Billings	do	1915	8650	do	Calcareous sandstone.		2.65	.6	3.7				17.3	10				
Do	do	do	1919	13897	do	Sandstone		2.17	6.9	26.3				13.5	7				

NEBRASKA

Cass	Cedar Creek	Local	1908	2940	Stone	Limestone		2.65	0.7	5.4				14.9	6				
Do	do	do	1908	2941	do	do		2.65	.5	5.9				15.5	5				
Do	do	do	1908	2942	do	do		2.65	1.0	4.7				13.2	6				
Do	Louisville	Comm	1920	16080	do	Argillaceous limestone.		2.61	1.5	5.8				14.7	6				
Do	do	do	1921	18831	do	Limestone		2.57	1.9	4.6			17,010	11.3	6				
Do	do	do	1921	18832	do	do		2.62	1.2	6.2			14,070	12.0	3				
Do	do	do	1921	18833	do	do		2.63	1.1	4.9			18,670	12.7	6				
Do	do	do	1940	49023	do	Argillaceous limestone.												U	1½–1
Do	do	do	1940	49027	do	do												S	1½–1
Do	Nehawka	Local	1908	2943	do	Limestone		2.65	.5	5.0				14.7	4				

Do	do	do	1908	2944	do	do		2.55	1.5	5.4				11.4	5				
Do	do	Comm	1916	9905	do	Argillaceous limestone		2.70	.4	4.7				16.0	6				
Dawes	Crawford	do	1930	33152	Gravel	Limestone	1			6.9		D							
Gage	Blue Springs	do	1901	360	Stone	Chert		2.55	.8	5.8									
Do	Wymore	do	1908	3091	do	Cherty dolomite		2.50	2.6	11.8				6.2	7				
Nemaha	Auburn	Local	1905	1509	do	Limestone		2.55	2.0	4.4				11.0	7				
Do	do	do	1905	1510	do	do		2.45	2.9	5.1				16.2	5				
Do	Johnson	do	1905	1361	do	do		2.40	3.5	3.7				4.0	4				
Do	do	do	1905	1362	do	do		2.45	2.9	10.1				18.0	5				
Red Willow	Indianola	Prosp	1925	27352	do	Sandstone		2.39	1.0	6.4									

NEVADA

Eureka	Eureka	Prosp	1924	24834	Stone	Rhyolite		2.23	4.1	6.8				17.3	12				

NEW HAMPSHIRE

Belknap	Meredith	Comm	1942	57647	Stone	Diabase		2.82	0.8		10.8	B	37,600		15				
Do	do	do	1942	57648	do	do					38.1	A							
Carroll	Passaconaway	Local	1946	72358	Gravel						39.2	A							
Do	do	Prosp	1949	78884	do					5.7			21,910	18.0	7				
Do	Redstone	Comm	1917	11339	Stone	Biotite granite		2.59	.4	6.5				18.2	7				
Do	do	do	1917	12229	do	Granite		2.61	.4	3.8			10,820	18.7	7				
Cheshire	Fitzwilliam	do	1916	9895	do	do		2.65	.2	3.7			26,100	17.7	9				
Do	do	do	1916	9946	do	do		2.65	.2	6.7			15,620	17.3	8				
Do	Marlboro	do	1916	9893	do	do		2.65	.2	5.7			15,260	19.3	6				
Do	do	do	1916	9894	do	do		2.65	.3	4.0				16.7	8				
Do	do	do	1919	13864	do	do				4.4				17.2	7				
Do	Webb	do	1917	12185	do	do		2.62	1.4		36.3	A					1.3	2–#4	
Coos	Gorham	do	1946	72344	Gravel	GGnScQz	2	2.62	1.0		36.4	A					1.5	1½–#4	
Do	do	do	1949	76884	do	GGnScQz	1½	2.64	.8										
Grafton	Hanover	Prosp	1901	370	Stone	Granite		2.64	.1	3.2									
Do	do	do	1901	371	do	Hornblende schist		3.09	.1	3.3									
Do	Haverhill	do	1907	2020	do	Porphyritic diorite		3.00	.4	1.8				18.0	12				
Do	do	do	1907	2101	do	Diorite		2.95	.5	2.5				17.2	9				
Do	do	do	1907	2102	do	Quartzite schist		2.65	.5	2.3				18.2	10				
Do	Lebanon	do	1901	372	do	Hornblende schist		3.04	.2	4.0									
Do	do	do	1901	373	do	Biotite schist		2.69	.3	5.9									
Do	Littleton	Comm	1949	79483	Gravel	GGnScQzQ	1½				28.3	A					2.0	1½–#4	
Do	Passaconaway	Prosp	1949	76890	do	Granite					37.3	C							
Do	West Thornton	do	1907	2182	Stone	Altered diabase		2.90	.2	2.2				16.9	19				
Hillsboro	Bedford	do	1912	5751	do	Biotite gneiss		2.70	.3	10.3				18.0	6				
Do	Brookline	Comm	1919	13883	do	Granite				3.3				18.0	8				
Do	Manchester	Prosp	1909	4050	do	Quartz		2.65	.1	4.0									
Do	Merrimack	do	1911	5545	do	Sandstone		2.70	.4	5.9				17.5	6				
Do	Milford	do	1912	5752	do	Granite		2.65	.2	3.5				18.5	9				
Do	do	Comm	1915	8872	do	do		2.65	.2	4.6			15,550		8				
Do	do	do	1915	9009	do	do		2.65	.4	3.6				18.0	8				
Do	do	do	1915	9010	do	do							16,640						
Do	do	do	1915	9011	do	do							14,870						
Do	do	do	1915	9012	do	do							18,220						
Do	do	do	1917	11234	do	do		2.62	.5	3.3			18,250	18.3	7				
Do	do	do	1917	11419	do	do							19,800	18.0	8				
Do	do	do	1919	13860	do	do				5.1				18.0	7				
Do	do	do	1919	13861	do	do				4.3				17.3	8				
Do	do	do	1922	21276	do	do		2.66	.3	4.0			26,240	18.3	8				
Do	do	do	1922	21277	do	do		2.65	.4	3.3			25,080	17.7	10				
Do	do	do	1924	25177	do	do		2.65	.3	3.3			22,760	18.7	6				
Do	do	do	1924	25178	do	do		2.66	.3	3.6			24,240	18.3	7				
Do	do	do	1924	25212	do	do		2.64	.4	3.8			24,260	18.0	5				
Do	do	do	1924	26055	do	do		2.70	.3	3.8			22,260	18.5	10				
Do	Nashua	Prosp	1912	5750	do	Biotite schist		2.70	.1	2.8				17.2	23				
Merrimack	Allenstown	Comm	1916	9994	do	Granite		2.65	.4	2.5			18,110	19.0	11				
Do	do	do	1919	13867	do	do				3.4				18.7	10				
Do	Concord	Prosp	1907	2053	do	do		2.65	.3	3.6				18.5	9				
Do	do	Comm	1915	8870	do	do		2.65		3.8			15,100		7				
Do	do	do	1915	9031	do	do		2.65	.3	4.0			16,600	18.7	10				
Do	do	do	1915	9036	do	do		2.65	.4	3.9			13,420	18.0	8				
Do	do	do	1915	9037	do	do		2.65	.3	4.1			13,900	17.7	7				
Do	do	do	1918	13849	do	do				4.2				17.3	7				
Do	do	do	1919	13863	do	do				3.4				18.7	9				
Do	do	do	1919	14892	do	do		2.64	.5	4.6				17.7	10				
Do	do	do	1920	17101	do	do							25,950						
Do	do	Local	1931	34530	do	do		2.63	.6					17.7	7				

11 Tested by method for stone.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

NEW HAMPSHIRE—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Merrimack	Hooksett	Comm	1942	57608	Gravel	GQQzGnSc		2.68	0.8		33.1	B							
Rockingham.	Portsmouth	do	1907	2362	Stone	Altered rhyolite		2.75	.1	2.7				18.8	11				
Do	do	Prosp	1925	27573	do	Siliceous slate		2.78	.1	3.4			25,710	18.7	28				
Do	do	do	1925	27574	do	Altered basalt		2.86	.2	5.4			18,390	16.7	7				
Do	do	do	1925	27575	do	do		2.91	.1	2.8			29,200	18.0	19				
Do	do	do	1925	27576	do	Quartzite		2.72	.1	5.2			24,890	15.3	17				
Do	do	Comm	1942	57567	do	Basalt		2.79	.3		16.2	B							
Do	do	do	1942	57568	do	do							30,800		10				
Strafford	Dover	Local	1917	11711	do	Siliceous marble		2.78	.1	4.8				17.7	15				
Do	do	Prosp	1917	12325	do	Slate		2.84	.1					14.7	13				
Do	Farmington	Comm	1906	1779	do	Granite		2.65	.2	3.7				17.3	12				

NEW JERSEY

Bergen	Fort Lee	Local	1928	30138	Stone	Diabase		3.04	0.1	2.4			43,610	18.7	26				
Do	Wyckoff	Comm	1942	57653	Gravel	GSy		2.69	.8		26.4	B							
Do	do	do	1943	61683	do	GQzQB	1	2.61	1.1		25.7	C							
Cape May	Cape May Point	do	1943	62058	do	Q(C)	1	2.56	.8		34.5	B							
Cumberland.	Cedarville	do	1943	62056	do	QQz(C)	1	2.61	.5		41.0	B							
Do	do	do	1943	63382	do	QC					43.4	B							
Do	Mauriceville	do	1936	42643	do	Q(C)				11.3	44.1	B							
Do	Millville	do	1930	33266	do	Quartz	1	2.61		15.1		B							
Do	do	do	1931	34562	do	do	1											S	1–¼
Do	do	do	1943	62057	do	Q(Qz)	1	2.59	.8		46.8	B							
Essex	Millburn	do	1906	1718	Stone	Basalt		2.95	.1	2.0				18.0	21				
Do	Montclair	Local	1904	986	do	do		2.90	.5	1.9				18.4	24				
Do	do	do	1904	987	do	do		2.95	.3	1.8				17.6	35				
Do	do	do	1904	988	do	do		2.99	.2	1.7				18.8	29				
Do	Montclair Heights.	do	1906	1713	do	do		2.95	.2	2.1				18.8	24				
Do	Upper Montclair.	Comm	1917	12263	do	do.[6]		2.93	.1	2.9				18.6	43				
Do	Verona	do	1906	1727	do	do		2.90	.3	2.3				17.3	17				
Do	West Orange	do	1906	1721	do	do.[6]		2.95	.1	1.8				18.5	21				
Do	do	do	1906	1753	do	do.[6]		3.00	.1	1.8				17.8	24				
Do	do	do	1906	1754	do	do		3.00	.1	1.4				17.3	28				
Do	do	do	1906	1755	do	do		2.95	.2	2.3				18.3	28				
Do	do	do	1917	12001	do	do		2.95	.2					18.0	25				
Hudson	Guttenberg	Prosp	1897	73	do	do				1.3									
Do	Jersey City	Local	1906	1773	do	Olivine diabase		3.15	.1	2.5				18.3	19				
Do	Secaucus	do	1906	1751	do	Gabbroitic diabase.		2.95	.1	2.8				18.3	27				
Do	do	Comm	1906	1756	do	do		3.00	.1	2.1				18.3	18				
Hunterdon	Byram	Local	1898	251	do	Basalt				1.5									
Do	Califon	do	1904	1015	do	Dolomite		2.85	.1	3.7				16.9	15				
Do	do	Prosp	1907	2205	do	do		2.85	.4	3.3									
Do	do	Comm	1908	2838	do	do		2.85	.2	3.7				17.0	10				
Do	do	do	1908	2842	do	do		2.85	.2	3.3				16.3	13				
Do	do	do	1908	2843	do	do		2.85	.1	3.5				17.1	14				
Do	do	do	1920	16027	do	Dolomitic marble		2.83	.2	3.5				15.6	11				
Do	do	do	1920	16029	do	do		2.84	.3	9.4				16.0	14				
Do	do	do	1923	23520	do	Siliceous dolomite		2.84	.2	3.5			25,670	16.7	7				
Do	Clinton	Prosp	1911	5233	do	Siliceous limestone.		2.80	.1	3.0				17.6	25				
Do	Flemington	do	1912	6035	do	Siliceous slate		2.60	.2					17.3	27				
Do	High Bridge	do	1912	5946	do	Augite diorite		3.05	.5	3.9				18.5	16				
Do	Lambertville	Comm	1898	253	do	Gabbro				2.8									
Do	do	do	1901	387	do	do		2.95	.1	2.8									
Do	do	Local	1904	903	do	Diabase								17.1	23				
Do	do	Comm	1916	10795	do	do		2.94	.2	2.8				18.7	19				
Do	do	do	1917	12386	do	Gabbroitic diabase.		2.95	.1	3.3				18.2	29				

Do	Milford	Prosp	1909	4026	do	Calcareous sandstone.		2.70	.3					17.6	17				
Do	Vernoy	Local	1919	14869	do	Dolomite		2.85	.2	3.0				15.3	8				
Do	Whitehouse	Prosp	1907	2085	do	Diabase [6]		2.90	.6	1.8				17.5	18				
Do	do	do	1908	2786	do	do.[6]		2.95	.3	2.6				18.3	27				
Mercer	Hopewell	do	1899	286	do	do				2.5									
Do	Pennington	Local	1911	5446	do	do.[6]		2.95	.1	3.8				17.7	17				
Do	do	Comm	1912	6008	do	Gabbroitic diabase.		3.00	.0	2.4				18.5	21				
Do	do	do	1917	11914	do	Diabase [6]		2.92	.1	3.4				18.3	18				
Do	do	do	1942	57625	do	Gabbro [6]		2.84	1.1		14.0	B	41,800		10				
Do	do	do	1942	57626	do	do.[6]													
Do	do	do	1943	61686	do	do.[6]		2.85	1.0		16.4	C							
Do	Trenton (Delaware River).	Prosp	1905	1451	Gravel			2.60	.3	[11] 1.2									
Do	do	do	1905	1452	do			2.60	.4	[11] 3.5									
Middlesex	Bergen Hill	do	1898	249	Stone	Gabbro				2.7									
Do	Chrome	Local	1919	14379	Slag	Smelter		3.55	.2	4.1				16.7	25				
Do	Perth Amboy	Prosp	1919	14644	do	do		3.49	.6	2.9				16.7	15				
Do	do	Local	1923	24212	Stone	Feldspathic sandstone.		2.47	1.3				19,140	17.7	6				
Monmouth	Belmar	Comm	1936	42644	Gravel	Quartz				21.2	52.9	B							
Do	Brielle	do	1943	62181	do	QQz(C)	1	2.61	.5		56.9	B							
Do	Farmingdale	do	1923	24213	do	Quartz	1½			21.4		A							
Do	do	do	1927	29697	do	do	1½			25.9		A						S	1½–1
Do	do	do	1929	31483	do	do													
Morris	Dover	Comm	1921	18723	Slag	Blast furnace		1.83	7.5	17.6									
Do	Hibernia	Local	1907	2280	Stone	Quartz syenite		2.65	.1	3.2				18.8	12				
Do	Middle Valley	Comm	1899	303	do	Diabase				1.5									
Do	do	do	1901	405	do	do		3.00	.1	1.7									
Do	do	do	1908	2902	do	do.[6]		3.00	.1	2.5				18.7	32				
Do	do	do	1912	5848	do	Hornblende gneiss		3.00	.1	2.8				18.7	26				
Do	do	do	1917	12333	do	do		3.03	.1	3.4				18.0	15				
Do	Millington	do	1898	250	do	Basalt				2.0									
Do	do	do	1906	1708	do	Diabase		3.00	.3	2.7				17.7	18				
Do	do	do	1917	11996	do	Basalt		2.97	.2	2.2				16.7	15				
Do	do	do	1933	40033	do	Diabase		2.91	1.0	3.6				18.0	14				
Do	Mine Hill	do	1943	61688	do	Granite		2.77	.3		28.2	B							
Do	Montville	Local	1911	5571	do	Hypersthene granite.		2.80	.2	3.5				18.4	11				
Do	Morris Plains	Comm	1927	29678	Gravel	GGnS				9.2		A							
Do	do	do	1933	40034	do	SGR	1	2.58	1.7	9.7		B							
Do	Morristown	do	1917	12421	Stone	Gabbro [6]		2.73	.4					17.7	12				
Do	do	do	1937	43145	do	Diabase				2.7	13.2	A							
Do	Mount Hope	Prosp	1916	9921	do	Pyroxene granite		2.85	.2	2.4				18.3	9				
Do	Netcong	Comm	1936	42614	Gravel	GS				11.0	32.2	B							
Do	do	do	1942	57628	do	GQzSyDi		2.69	.7		30.9	B							
Do	Wharton	Local	1913	7194	Slag	Blast furnace		2.10	3.4	12.6				9.5	4				
Do	do	Prosp	1927	29265	Stone	Diorite [6]		2.77	.2	4.2				18.7	12				
Do	do	do	1927	29266	do	Augite diorite		2.85	.2	5.6				18.7	11				
Passaic	Albion Place	do	1906	1717	do	Basalt		2.95	.3	1.5				18.5	30				
Do	Great Notch	Comm	1898	260	do	do				1.8									
Do	do	do	1898	261	do	do				2.2									
Do	do	do	1942	57655	do	do		2.94	.6		10.8	B							
Do	do	do	1942	57656	do	do							51,500		18				
Do	Hawthorne	do	1942	57651	do	do		2.90	.9		10.4	B							
Do	do	do	1942	57652	do	do							48,300		9				
Do	Little Falls	do	1941	55366	do	do		2.88	.6				63,600		21				
Do	do	do	1941	55367	do	do					10.0	B							
Do	Mountain View	Local	1906	1730	do	do		2.95	.5	2.5				17.8	21				
Do	Paterson	Comm	1906	1716	do	do		2.90	.2	1.9				18.7	25				
Do	do	do	1906	1731	do	do		2.95	.3	1.6				18.3	31				
Do	Wanaque	Prosp	1901	478	do	Peridotite		3.21	.2	3.6									
Somerset	Belle Mead	do	1910	4952	do	Diabase		3.00	.1	1.6				18.8	34				
Do	Benardsville	Local	1899	287	do	Limestone				4.1									
Do	do	Comm	1906	1719	do	Diabase [6]		2.85	.1	4.0				18.5	16				
Do	do	do	1933	40021	do	Diabase		2.91	.3	3.2				18.7	13				
Do	Bound Brook	Prosp	1898	252	do	Basalt				2.2									
Do	do	Comm	1906	1619	do	do		2.90	1.0	1.5				19.1	27				
Do	do	do	1910	4395	do	Diabase [6]		2.90	.3	1.8				18.6	33				
Do	do	do	1916	10472	do	do		2.94	.0	2.2				18.7	30				
Do	do	do	1917	11540	do	do									27				
Do	do	do	1917	11541	do	do									28				
Do	do	do	1917	11542	do	do									30				
Do	do	do	1917	11543	do	do									32				
Do	do	do	1917	12101	do	Basalt		2.93	.1	2.6				18.7	35				
Do	do	do	1919	14641	do	Diabase		2.98	.1	1.6				19.3	27				
Do	do	do	1919	14973	do	Basalt		2.89	.3	2.1				18.0	18				
Do	do	do	1919	14982	do	do.[6]		2.94	.2	2.2				18.7	21				
Do	do	do	1919	14983	do	do		2.99	.1	1.8				18.0	31				

[6] Altered. [11] Tested by method for stone.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

NEW JERSEY—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Somerset	Bound Brook	Comm	1922	22202	Stone	Basalt		2.94	0.0	2.3				18.0	31				
Do	do	do	1926	28307	do	Diabase				2.4									
Do	do	do	1926	28308	do	do				2.1									
Do	do	do	1926	29247	do	do				2.5									
Do	do	do	1928	30154	do	do		2.92	.1	2.4								S	1½–1
Do	do	do	1929	31484	do	do								18.8	20				
Do	do	do	1930	33273	do	do		2.89	.4	1.5									
Do	do	do	1937	43146	do	do				2.0	12.2	A							
Do	Chimney Rock	Local	1899	288	do	Diabase				1.6									
Do	do	do	1901	357	do	Basalt		3.00	.1	1.7									
Do	do	Comm	1923	23473	do	Diabase		2.97	.0	2.0			33,850	18.7	29				
Do	Neshanic	Prosp	1899	284	do	do				2.0									
Do	North Plainfield	Comm	1908	2995	do	Basalt		3.00	.2	1.7				19.2	34				
Do	Rocky Hill	Prosp	1898	248	do	Gabbro				2.1									
Do	do	do	1899	285	do	do				2.4									
Do	Somerville	do	1902	637	do	Basalt tuff		2.36	4.4	14.7									
Do	do	do	1902	669	do	do		2.40	3.8	9.3									
Do	Warrenville	do	1906	1706	do	Diabase		3.00	.2	1.8				18.3	28				
Sussex	Dunvale	do	1922	21142	do	Siliceous dolomite		2.82	.2	2.9				16.0	20				
Do	Hamburg	do	1909	3405	do	Syenite.[6]		2.95	.1	3.3				17.9	15				
Union	New Providence	Local	1901	350	do	Diabase		3.00	.2	1.7									
Do	do	Comm	1913	6585	do	do.[6]		2.95	.2	1.5				17.9	25				
Do	Springfield	Local	1904	912	do	Basalt		2.90	.6	1.7				18.6	30				
Do	do	Comm	1913	6595	do	do		2.90	.5	1.8				18.1	28				
Do	do	do	1923	23443	do	do		2.92	.1	2.9			43,720	18.7	24				
Do	Summit	do	1906	1707	do	do		2.95	.2	2.2				18.3	8				
Do	do	do	1913	6586	do	do [6]		2.95	.5	1.9				17.5	38				
Warren	Oxford	do	1941	55224	do	Granite		2.69	.1		30.3	B	47,150		13				
Do	Washington	Prosp	1909	3145	do	Siliceous dolomite		2.85	.1	1.2				17.2	24				

NEW MEXICO

Bernalillo	Isleta	Prosp	1925	28023	Stone	Olivine basalt		2.56	1.9	6.8									
Do	do	do	1925	28024	do	do		2.59	1.9	7.4									
Catron	Datil (Brushy Canyon).	do	1925	26782	do	Rhyolite		2.30	3.0	7.1				17.0	6				
Do	Glenwood	do	1922	22414	do	Basalt [6]		2.38	2.3	13.4				9.3	6				
Do	Reserve	do	1922	21112	do	Volcanic breccia		2.21	6.7	12.1				12.0	4				
Do	do	do	1922	21113	do	Andesite [1]		2.61	.5	4.0				17.0	12				
Do	do	do	1922	21819	do	Olivine basalt		2.54	1.4	10.0				14.3	7				
Do	do	do	1922	21820	do	Volcanic conglomerate.		2.53	6.4	21.2				8.7	3				
Do	do	do	1922	21821	do	Rhyolite [6]		2.54	4.9	6.2				17.0	10				
Do	do	do	1922	22409	do	Andesite [6]		2.21	3.9	7.6				8.5	4				
Do	do	do	1922	22410	do	Trachyte [6]		2.22	3.3	8.9				16.7	10				
Do	do	do	1945	67498	Gravel	LBAn (G)	1½											11.5	1½–#4
Do	Reserve (Saliz Creek).	do	1922	21822	Stone	Rhyolite [6]		2.65	.6	4.4				17.7	6				
Grant	Silver City	do	1916	9768	do	Granite porphyry		2.50	1.1	3.4				18.7	18				
Hidalgo	Steins	Local	1923	23006	do	Volcanic sandstone.		2.48	2.0	5.6				16.7	8				
Lincoln	Hondo (Ruidoso River).	Prosp	1945	67501	Gravel	LSQzF	1½											9.4	1½–#4
Luna	Deming	Local	1921	19450	Stone	Feldspathic quartzite.		2.60	.6	3.1									
McKinley	Gallup	Prosp	1924	26283	do	Calcareous sandstone.		2.59	1.2	3.3				16.7	9				
Mora	Mora	Local	1920	17747	do	Pegmatic granite		2.57	.5	14.4									
Otero	La Luz	do	1945	67500	do	Limestone												2.2	1½–#4
Do	Pinon	Prosp	1922	21262	do	Argillaceous limestone.		2.40	2.6					17.0	4				
Quay	Tucumcari	do	1923	23796	do	Feldspathic sandstone.		2.43	2.3	22.0				18.7	5				
Rio Arriba	Canjilon	do	1922	21248	do	Limestone				6.2									

San Miguel	Las Vegas	do	1920	16202	do	Siliceous clay limestone.		2.67	.3	4.6				16.7	8				
Do	San Jose (Pecos River).	Comm	1940	50480	Gravel	L(GQ)	1½				26.7	A							
Do	Valley Ranch	Local	1920	17736	Stone	Sericite gneiss		2.63	1.2	12.2									
Do	do	do	1920	17737	do	Aplitic diorite		2.71	1.8	5.1									
Do	do	do	1920	17739	do	Biotite schist		2.89	.2	3.8				16.7	14				
Santa Fe	Canyoncito	do	1927	29268	do	Limestone		2.71	.2	6.2				16.7	8				
Do	do	do	1927	29269	do	do		2.69	.3	5.6				15.3	7				
Do	Glorieta	Prosp	1922	21259	do	do		2.70	.2					14.7	4				
Do	do	do	1922	21260	do	do		2.71	.1					15.3	5				
Do	do	Local	1923	23758	do	do		2.71	.2	5.2				15.7	7				
Do	do	Prosp	1923	24260	do	do		2.70	.1	5.6				15.3	4				
Do	do	Local	1927	29294	do	do		2.70	.4	6.1				17.3	8				
Do	(Pajorita Canyon).	Prosp	1924	24726	do	Basalt		2.76	.7	3.8				18.0	20				
Do	San Ildefonso	do	1924	24723	do	Volcanic sandstone.		1.85	11.9	45.5				16.7	3				
Taos	Taos	do	1922	22687	do	Sandstone		2.54	1.2	6.0				14.3	7				
Do	do	do	1923	24423	do	Limestone		2.69	.2	5.4				16.3	5				
Do	do	do	1923	24425	do	Siliceous limestone.		2.72	.3	5.1				18.3	6				
Do	do	do	1923	24426	do	Quartzite		2.62	.5	3.6				19.3	7				
Valencia	Laguna	Local	1920	17292	do	Calcareous sandstone.		2.43	2.6	6.1				11.3	7				
Do	Rio Puerce	do	1920	16452	do	Basalt		2.31	3.3	13.6									

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Albany	Albany	Local	1905	1193	Stone	Calcareous sandstone.		2.70	0.4	2.9				17.1	20				
Do	Coeymans	Comm	1943	61580	do	Limestone		2.72	.3		17.2	B							
Do	Feura Bush	do	1924	25203	do	do		2.71	.2	3.4			29, 100	16.7	10				
Do	Guilderland	Prosp	1911	5673	do	Siliceous limestone.		2.65	1.0	3.2				14.7	14				
Do	South Bethlehem.	do	1911	4989	do	Limestone		2.69	.1	4.8				16.1	10				
Allegany	Alfred	Comm	1925	27361	Gravel	DoGSC	2			5.8		A							
Bronx	Bronx	do	1942	60084	do	Q(QzGn)	1	2.65	.4		35.7	B							
Do	do	do	1942	60133	do	do	¾				37.7	B							
Do	do	do	1944	63389	do	Q(G)					32.2	B							
Cattaraugus	Allegany	do	1925	27358	do	LDoSQ	1½			9.9		A							
Do	Franklinville	do	1945	67680	do	LQzG(CS)					23.4	A						[12] 6.8	1½–#4
Do	do	do	1945	67696	do	LSQ					23.8	A						[12] 7.5	1½–#4
Do	do	do	1950	80896	do			2.60	1.4		21.3	A							
Do	Leon	Local	1922	21211	Stone	Feldspathic sandstone.		2.47	3.0	4.2				15.0	10				
Do	Machias	Comm	1925	27359	Gravel	SG	2			7.7		A							
Do	do	do	1925	27447	do	LS	2			3.0		A							
Do	do	do	1945	68771	do	LS(G)					21.3	A						[12] 7.5	1½–#4
Cayuga	Auburn	do	1934	40230	Stone	Argillaceous limestone.		2.71	.1	4.0					7				
Do	do	do	1934	40231	do	do					28.0	A							
Chemung	Elmira	Prosp	1908	2650	do	Limestone		2.35	4.3	7.4				6.3	3				
Do	Horseheads	Comm	1944	66884	do	Argillaceous limestone.												9.5	½–⅜
Clinton	Chazy	do	1925	26989	do	Limestone		2.71	.0	4.5			34, 660						
Do	Keeseville	Prosp	1912	6455	do	Feldspathic quartzite.		2.70	.3	4.7			18, 400	18.2	9				
Do	do	do	1912	6457	do	Plagioclase gneiss		2.70	.3	3.9			18, 500	18.0	10				
Do	do	do	1912	6458	do	Pyroxene gneiss		2.75	.3	3.4			20, 500	18.0	13				
Do	Plattsburg	Comm	1917	11499	do	Marble		2.70	.2	7.8			10, 120	11.7	3				
Columbia	Hudson	Prosp	1901	340	do	Limestone		2.69	.3	5.3									
Do	do	do	1901	385	do	Slate		2.69	.2	6.9									
Cortland	Cortland	do	1897	195	do	Gabbro				5.4									
Delaware	Hancock	Comm	1925	27360	Gravel	Sandstone	2			14.4		A							
Do	Horton	do	1938	46011	Stone	do												S	1½–1
Dutchess	Camelot	do	1911	5544	do	Dolomite		2.80	.2	2.3			29, 050	16.8	23				
Do	Clinton Point	do	1905	1327	do	Dolomitic sandstone.		2.80	.1					17.5	19				
Do	do	do	1910	4960	do	Dolomitic marble		2.80	.1	2.3				16.7	7				
Do	do	do	1913	6929	do	Limestone		2.80	.2	2.7				17.2	12				
Do	do	do	1945	68635	do	Dolomite		2.80	.4		20.7	A						2.0	2–1
Do	do	do	1945	68636	do	do		2.81	.4									1.2	1–#4
Do	New Hamburg	do	1913	6764	do	Siliceous dolomite		2.85	.1	2.3				17.3	20				
Do	do	do	1922	21015	do	do		2.76	.2	2.5			27, 170	17.0	13				

[1] Weathered. [6] Altered. [12] 20 cycles, freezing and thawing; loss determined with half-size sieves.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

NEW YORK—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Dutchess	Poughkeepsie	Local	1908	2479	Stone	Calcareous sandstone.		2.75	0.3	3.7				18.0	13				
Do	do	Prosp	1908	2480	do	do		2.75	.2	4.6				15.8	14				
Do	Stoneco	Comm	1914	8011	do	Dolomite		2.80	.2	5.0			34,450	17.6	10				
Do	do	do	1918	13558	do	Siliceous dolomite		2.80	.1	2.6				16.3	29				
Do	do	do	1942	57665	do	Dolomitic marble		2.83	.3		16.0	B							
Do	do	do	1942	57666	do	do							47,400		15				
Do	Wingdale	Prosp	1917	11505	do	do		2.85	.1	9.7				10.0	3				
Erie	Akron	Comm	1908	2939	do	Cherty limestone		2.70	.2	5.9				18.8	7				
Do	do	do	1917	12072	do	do		2.63	.1	4.4									
Do	do	do	1920	16543	do	Limestone		2.69	.1	5.4					10				
Do	do	do	1920	16546	do	do				4.1									
Do	do	do	1936	42684	do	Argillaceous dolomite.					54.0	A							
Do	do	do	1936	43056	do	Limestone				4.2								0.5	1½–1
Do	do	do	1936	43125	do	Argillaceous limestone.				3.5								1.6	1½–1
Do	do	do	1937	44250	do	Argillaceous dolomite.		2.66	1.8	3.5	24.9	A			8			3.2	1½–1
Do	Buffalo	do	1911	5225	do	Limestone		2.70	.8	3.4				16.2	16				
Do	do	do	1917	12310	do	Cherty limestone		2.68	.2	5.7				17.5	11				
Do	do	do	1918	12729	do	Limestone		2.71	.1	4.2				14.0	8				
Do	do	do	1921	18719	Slag	Blast furnace		1.93	5.3	15.8									
Do	do	do	1921	18720	do	do		2.05	4.5	15.4									
Do	do	do	1924	25239	Stone	Cherty limestone				4.1								S	1½–1
Do	do	do	1925	27369	do	do		2.69	.1	4.4			31,500					S	1½–1
Do	do	do	1925	27370	do	do		2.71	.1	4.0			32,620	16.7	12			S	1½–1
Do	do	do	1925	27387	do	Limestone		2.70	.2	4.3								S	1½–1
Do	do	do	1927	30003	do	Cherty limestone		2.66	.5	3.5								S	1½–1
Do	do	do	1937	44356	Slag	Blast furnace					45.0	A				76			
Do	Clarence	do	1934	40232	Gravel						36.0	A							
Do	do	do	1934	40233	do						31.9	A							
Essex	Jay	Prosp	1920	16154	Stone	Gabbro		2.88	.2	2.7				17.6	10				
Do	Keeseville	do	1906	1783	do	do		3.65	.3					17.0	16				
Fulton	Gloversville	Comm	1915	8577	do	Biotite gneiss		2.75	.1	3.7			14,580	18.0	10				
Do	Mayfield	Local	1917	11953	do	Argillaceous limestone.		2.82	.2	3.7				16.0	16				
Genesee	Alexander	Comm	1925	27365	Gravel	LSSh	2			11.6		A							
Do	LeRoy	do	1901	410	Stone	Flint		2.60	.1	7.2									
Do	do	do	1925	26987	do	Limestone		2.68	.3	4.6			27,070	16.7	11				
Do	do	do	1926	28312	do	do				1.9									
Do	North Leroy	do	1903	732	do	do		2.70	.0	4.7									
Do	do	do	1903	733	do	do		2.60	.2	5.1									
Do	do	do	1917	12043	do	Cherty limestone		2.65	.2	5.7				19.3	8				
Do	do	do	1918	12727	do	Limestone		2.70	.2	3.9			27,390	15.3	13				
Do	Stafford	do	1924	24818	do	do		2.70	.2	4.8				16.0	7				
Greene	Catskill	Local	1913	6755	do	Calcareous sandstone.		2.70	.6	3.7				13.1	9				
Do	do	Prosp	1923	23120	do	Feldspathic sandstone.		2.68	.6	5.4				12.7	9				
Do	Hensonville	Comm	1942	57657	do	do		2.71	.6		23.0	B							
Do	do	do	1942	57658	do	do							29,700		10				
Do	New Baltimore	do	1934	40178	do	Argillaceous limestone.					24.8	A							
Do	do	do	1934	40179	do	do		2.72	.2	3.9					8				
Do	do	do	1942	57659	do	Limestone		2.77	.5		22.8	B							
Do	do	do	1942	57660	do	do							34,700		5				
Herkimer	Dolgeville	Local	1916	10097	do	Dolomite		2.77	.4	3.1				15.3	10				
Do	Little Falls	do	1902	532	do	Gneiss		2.70	.1	1.9									
Do	do	Prosp	1906	1768	do	Pyroxene gneiss		2.90	.1	6.1				17.3	18				
Do	do	do	1906	1770	do	Pyroxene quartzite.		3.00	.1	2.1				17.0	35				
Do	do	do	1906	1771	do	Pyroxene gneiss		2.60	.1	7.6				14.7	7				
Do	do	Local	1906	1853	do	Dolomite		2.80	.3	5.2				12.2	7				
Do	do	Comm	1917	11423	do	Hornblende gneiss		2.82	.3	3.7				18.0	13				
Do	do	do	1917	12117	do	do		2.74	.5	4.5				17.3	8				

Do	Newport	do	1925	26988	do	Limestone		2.71	.0	4.5			28,770	15.3	7			
Do	Salisbury	Prosp	1908	2542	do	Pyroxene quartzite.		2.70	.2	2.3				18.7	20			
Jefferson	Alexandria Bay	Comm	1910	4157	do	Granite		2.65					21,540					
Do	do	do	1914	7437	do	do		2.65	.2	3.8			27,200	18.8	8			
Do	do	do	1915	9129	do	do							14,390					
Do	do	do	1915	9130	do	Gneissoid granite							17,600					
Do	do	Prosp	1916	10236	do	Granite							28,130	18.6	12			
Do	do	Comm	1916	10319	do	do		2.62	.3	2.8			28,900	18.0	10			
Do	do	do	1919	13890	do	do				2.9				18.7	11			
Do	Chaumont	do	1921	18661	do	Limestone		2.71	.1	7.6				16.7	6			
Do	do	do	1926	28690	do	do		2.71	.1	3.4				15.7	8			
Do	Clayton	do	1906	1896	do	Granite		2.65	.1	2.5				18.9	14			
Do	Felts Mills	do	1921	18660	do	Limestone		2.69	.4	4.9			28,350	14.7	12			
Do	Watertown	do	1921	18659	do	do		2.69	.3	6.4				13.3	6			
Livingston	Caledonia	do	1925	27363	Gravel	DoL	2			16.4		A						
Madison	Munnsville	do	1917	12023	Stone	Argillaceous limestone.		2.71	.2					16.7	13			
Monroe	Brockport	Local	1901	356	do	Limestone		2.69	.2	4.5								
Do	Honeoye Falls	Comm	1904	917	do	Cherty limestone		2.70	.1	3.6								
Do	do	Prosp	1904	918	do	Dolomite		2.55	2.0	4.1				15.1	16			
Do	do	do	1904	937	do	Nodular limestone		2.65	1.6	6.1								
Do	do	Local	1904	938	do	Dolomitic limestone.		2.70	.2	3.6				15.6	9			
Montgomery.	Amsterdam	Prosp	1905	1211	do	Limestone		2.70	.3	2.2			26,000	16.5	18			
Do	do	Local	1906	1746	do	do		2.70	.1	4.8				16.2	9			
Do	do	Comm	1917	11903	do	do		2.61	.2	4.9				15.3	14			
Do	Pattersonville	Local	1905	1512	do	Dolomitic limestone.		2.80	.7	2.6				15.8	15			
Nassau	Oyster Bay	Comm	1943	62070	Gravel	QQz(G)	1	2.62	.6		29.6	B						
Do	Port Washington.	do	1943	62124	do	QQz(GnG)	1½	2.64	.7		36.2	B						
Do	do	do	1944	66942	do	Q(GnG)	1½	2.63	.7		34.1	A				2.7	1½–#4	
Do	do	do	1944	66943	do	Q(GnQz)		2.65	.7		34.1	B				2.9	1–½	
Do	do	do	1944	66945	do	Q(Gn)		2.61	.8							3.1	½–#4	
Do	do	do	1944	66946	do	do		2.62	.8							2.0	⅜–#8	
New York	New York	Prosp	1905	1188	Stone	Chert		2.90	1.3	11.9								
Do	do	do	1908	2819	Slag	Smelter		3.90	.2	4.4				17.3	21			
Niagara	Gasport	Comm	1917	12124	Stone	Dolomite [1]		2.70	1.0	8.2				11.3				
Do	Lockport	Prosp	1897	193	do	Sandstone				2.3								
Do	do	do	1925	27320	do	do										U	1½–1	
Do	Niagara Falls	do	1911	5224	do	Dolomite		2.80	.6	2.9				15.7	18			
Do	Royalton	do	1925	27319	do	do										U	1½–1	
Oneida	Boonville	Comm	1925	27357	Gravel	LG	2			7.6		A						
Do	Prospect	do	1922	21308	Stone	Crystalline limestone.		2.69	.2					12.0	4			
Do	do	do	1922	21309	do	do		2.69	.2	6.8				11.7	4			
Do	do	do	1922	22270	do	Limestone		2.69	.2	6.9				11.3	5			
Do	do	do	1922	22271	do	do		2.70	.2	6.5				12.3	5			
Onondaga	Jamesville	do	1926	28691	do	do		2.72	.1	3.8				16.0	11			
Do	do	do	1926	28692	do	do		2.70	.1	3.2				15.0	9			
Do	do	do	1926	28693	do	do		2.57	1.5	8.0				13.7	11			
Do	Skaneateles	Prosp	1907	1919	do	do		2.70	.7	4.6				9.3	7			
Do	do	Local	1907	1920	do	do		2.70	.3	3.8				17.3	7			
Do	Syracuse	Prosp	1905	1296	do	do		2.75	.2	2.6				16.2	14			
Do	do	do	1905	1297	do	do		2.75	.2	3.3				16.2	10			
Ontario	Canandaigua	do	1901	400	do	do		2.69	.1	4.6								
Do	Geneva	do	1901	346	do	do		2.64	.7	2.9								
Do	do	Local	1901	347	do	do		2.76	.1	4.5								
Do	do	Comm	1937	44345	Gravel	DoS				[7] 9.7	26.8	B						
Do	Oaks Corners	do	1919	14462	Stone	Argillaceous limestone.		2.67	1.0	3.0				14.3	8			
Do	do	do	1921	18327	do	Argillaceous dolomite.		2.64	1.4	4.8			32,140	18.7	24			
Do	Phelps	Prosp	1913	6864	do	Limestone		2.80	.4	3.2				16.0	6			
Orange	Cedarcliff	Local	1913	6765	do	Siliceous dolomite		2.85	.1	4.2				17.1	5			
Do	do	Comm	1918	13557	do	Limestone		2.82	.1	3.1				14.0	19			
Do	do	do	1922	21016	do	Siliceous dolomite		2.80	.2	2.9			36,220	15.3	10			
Do	Cornwall	do	1913	6720	do	Gneissoid granite		2.70	.2	3.7				18.2	9			
Do	do	Local	1913	6772	do	Hornblende granite.		2.65	.2	6.8				18.4	6			
Do	Cornwall Landing.	Prosp	1915	9619	do	Granite		2.65	.1	2.1				19.3	7			
Do	Florida	do	1903	791	do	Sandstone		2.80	.1	10.9				17.4	24			
Do	Highland Mills	do	1909	3144	do	do		2.65	.3	2.5				18.8	11			
Do	Monroe	do	1915	8908	do	Dolomite		2.85	.2	5.5				16.7	8			
Do	do	do	1915	8909	do	Calcareous sandstone.		2.70	.7	3.0				18.7	19			
Do	do	do	1915	8910	do	Sandstone		2.65		4.8				19.0	4			

[1] Weathered. [7] Grading C.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

NEW YORK—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Orange	Newburgh	Comm	1924	26037	Stone	Dolomite		2.82	0.1	3.2				17.3	13				
Do	Otisville	Prosp	1928	31257	do	Feldspathic sandstone.		2.60	.7	2.8			41,800	18.7	16				
Do	Port Jervis	do	1923	23797	do	Sandstone		2.67	.4	2.5				18.7	14				
Do	Warwick Township.	do	1906	1833	do	Diorite		3.05	.2	5.7				18.3	9				
Orleans	Albion	Comm	1910	4406	do	Ferruginous sandstone.		2.50	1.5	3.9				16.0	12				
Do	do	do	1916	10042	do	Sandstone		2.45	1.9	3.4			20,000	17.3	9				
Do	do	do	1920	17327	do	do		2.43	2.0	3.9				14.7	9				
Do	do	do	1920	17328	do	do		2.41	2.4	4.0				15.0	9				
Do	do	do	1921	20353	do	do		2.39	2.4	4.3			24,340	15.3	9				
Do	Medina	Prosp	1911	5630	do	do							21,800	16.5	11				
Oswego	Oswego	do	1907	2175	do	Pyroxene quartzite.		2.70	.2	7.0				17.2	10				
Do	do	do	1907	2176	do	Quartzite		2.65	.2	7.6				18.9	13				
Do	do	do	1907	2177	do	Feldspathic quartzite.		2.55	1.0	3.2				18.2	21				
Otsego	Cooperstown	do	1908	2649	do	Sandstone		2.55	1.2					14.8	12				
Putnam	Garrison	Comm	1914	8041	do	Granite		2.65	.2	5.1				18.7	11				
Do	Oregon	do	1918	12714	do	Granite gneiss		2.66	.2	5.2				18.7	9				
Rensselaer	Brainard	do	1911	5608	do	Feldspathic sandstone.		2.70	.1	2.1				17.9	14				
Do	Hoosick	Local	1908	2880	do	Calcareous sandstone.		2.75	.2	2.8				18.9	20				
Do	Hoosick Falls	Prosp	1908	2817	do	Limestone		2.75	.1	3.2				16.8	12				
Do	do	do	1908	2818	do	do		2.80	.2	3.1				17.0	11				
Rockland	Clarkstown Township.	Comm	1926	28132	do	Diabase		2.97	.1	4.2			34,400	18.0	14				
Do	do	do	1926	28133	do	do		2.93	.1	4.5			30,590	18.0	18				
Do	Congers	do	1911	5588	do	do		2.95	.4	1.6				18.3	23				
Do	do	do	1913	6735	do	Gabbroitic diabase.		2.95	.3	2.6				18.1	17				
Do	Haverstraw	Prosp	1895	49	do	Diabase				2.7									
Do	do	Comm	1913	6733	do	do		2.95	.4	2.3				17.8	18				
Do	do	do	1913	6734	do	do		2.95	.2	2.3				18.0	23				
Do	do	do	1928	30197	do	do.[6]		2.92	.7	3.2				18.7	18				
Do	do	do	1928	30198	do	do.[6]		2.83	.2	3.6				18.7	22				
Do	do	do	1928	30210	do	do.[6]		2.85	.2	3.8									
Do	Nyack	do	1910	4401	do	do		2.95	.2	5.1				17.7	20				
Do	do	do	1911	4996	do	do		3.00	.1	2.5				18.5	23				
Do	Rockland Lake	Prosp	1897	95	do	do				2.3									
Do	do	Comm	1901	335	do	do		3.08	.3	3.0									
Do	do	do	1905	1321	do	do		2.95	.2	1.9				18.0	27				
Do	do	do	1908	2904	do	do		2.95	.4	2.7				18.2	17				
Do	do	do	1910	4962	do	Gabbroitic diabase.		2.90	.3	2.6				18.3	33				
Do	do	do	1910	4964	do	do		2.95	.1	2.4				18.1	21				
Do	do	do	1914	7805	do	Diabase		3.00	.2	2.4				18.0	18				
Do	do	do	1914	8012	do	Gabbroitic diabase.		2.95	.1	4.6			31,300	18.5	14				
Do	do	do	1916	10093	do	do		2.98	.1	3.0				19.0	13				
Do	do	do	1916	10094	do	do		2.93	.2	3.6				19.0	12				
Do	do	do	1916	10771	do	do		3.04	.2	3.0				18.7	19				
Do	Round Island	Prosp	1897	192	do	Gneiss				1.7									
Do	Suffern	Comm	1911	5315	do	Diabase[6]		2.95	.8	2.5				15.8	9				
Do	Tomkins Cove	Prosp	1895	45	do	Limestone		2.80		5.1									
Do	do	Comm	1895	127	do	do		2.80		6.3									
Do	do	do	1901	470	do	do		2.69	.2	5.9									
Do	do	do	1913	6774	do	Siliceous dolomite		2.85	.2	4.3				16.4	9				
Do	do	do	1913	6775	do	Dolomite		2.80	.2	4.9				12.7	7				
Do	do	do	1914	8013	do	Siliceous dolomite		2.80	.2	6.9			22,200	17.2	13				
Do	do	do	1915	9462	do	do		2.80	.2	4.8				16.7	13				
Do	do	do	1915	9463	do	Siliceous marble		2.85	.1	4.9				18.3	4				
Do	do	do	1920	16032	do	Argillaceous dolomite.		2.78	.3	7.8									
Do	do	do	1925	26723	do	Dolomitic marble		2.82	.2	5.0				16.7	5			S	1½-1

Do	do	do	1925	26724	do	Dolomite		2.84	.0	5.1				16.7	7			S	1½–1
Do	do	do	1925	26725	do	do		2.84	.1	4.5				17.3	7			S	1½–1
Do	do	do	1925	26726	do	do				5.1								S	1½–1
Do	do	do	1927	29371	do	Dolomitic marble		2.76	.1	4.9				18.0	7				
Do	do	do	1928	30699	do	Siliceous limestone.		2.82	.1	4.5									
Do	do	do	1936	43074	do	Dolomite					24.0	A							
Do	West Nyack	do	1913	6480	do	Diabase [6]		2.90	.4	2.2				18.2	24				
Do	do	do	1942	57649	do	Gabbroitic diabase.		2.91	.7		17.7	B							
Do	do	do	1942	57650	do	do							37,500		14				
Saint Lawrence.	Gouverneur	do	1917	11504	do	Marble		2.73	.2				10,590	10.2	3				
Do	do	do	1922	21021	do	do		2.71	.2	7.0			16,890	14.7	4				
Do	do	do	1922	21022	do	do		2.72	.2	7.9			15,240	10.3	4				
Do	Hammond	Local	1923	23514	do	Sandstone		2.44	2.4	6.3			20,460	17.7	6				
Do	Hopkinton	Prosp	1916	10191	do	do		2.51		2.8			35,240	18.0	12				
Do	Massena	do	1910	4328	do	Siliceous dolomite		2.80	.2	4.3				16.5	16				
Do	do	do	1910	4330	do	do		2.80	.5	3.1				16.8	20				
Saratoga	Mechanicville	Comm	1922	21394	Gravel	DoShQ	2			24.1		A							
Do	Saratoga Springs.	Prosp	1906	1524	Stone	Gneiss		3.05	.2	4.7				16.9	16				
Do	do	do	1906	1525	do	Diabase [6]		2.80	.2	2.3				17.6	18				
Do	Stillwater	do	1906	1689	do	Feldspathic sandstone.		2.70	.4	2.8				17.5	11				
Schenectady.	Duanesburg	do	1897	94	do	Sandstone				3.8									
Schoharie	Cobleskill	Comm	1906	1538	do	Limestone		2.70	.3	4.5				13.7	7				
Do	Howes Cave	Prosp	1897	188	do	do				4.2					5				
Do	Schoharie	Comm	1934	40181	do	do		2.70	.2	4.9									
Do	do	do	1934	40182	do	do					30.5	B							
Do	do	do	1934	40226	do	do				5.3									
Seneca	Border City	Prosp	1904	1118	do	do		2.70	.1	4.3				17.3	9			Q	1½–1
Steuben	Corning	Comm	1924	24942	do	Sandstone		2.55	1.7				35,780	16.0	15			S	1½–1
Do	do	do	1924	24943	do	Feldspathic sandstone.		2.57	1.0	2.4			32,050	16.0	16				
Do	do	do	1924	24953	do	do		2.54	.9	5.0			32,970	17.3	23			S	1½–1
Do	do	do	1924	25311	do	Slate		2.64	.8	11.6									
Do	do	do	1925	26991	do	Sandstone		2.59	.6	2.8			37,040	15.3	22				
Do	do	do	1925	27362	Gravel	do	2			12.0		A							
Do	Dansville Township.	Prosp	1937	43156	Stone	Argillaceous sandstone.					37.8	A							
Suffolk	Northport	Comm	1943	62125	Gravel	QQz(GnScG)	1	2.64	.5		28.2	B							
Do	Port Jefferson	do	1932	34714	do	Q				7.6	42.1	A							
Do	do	do	1937	43175	do	Q					36.6	A							
Do	do	do	1942	57627	do	QQzSc		2.65	.6		36.6	B							
Sullivan	Callicoon Center.	Prosp	1916	11182	Stone	Feldspathic sandstone.		2.67	.6	3.0			22,620	14.7	13				
Do	Monticello	Local	1925	26990	do	Limestone							15,540	18.7	7				
Do	Neversink	do	1930	33990	do	Feldspathic sandstone.		2.63	1.0	5.3				18.0	8				
Do	Tusten	Prosp	1916	11181	do	do		2.75	.4	3.3			26,300	15.3	14				
Tioga	Smithboro	do	1906	1667	do	do		2.60	1.3	2.7				17.3	17				
Ulster	Accord	Comm	1942	57663	do	Limestone		2.74	.3		21.5	B							
Do	do	do	1942	57664	do	do							32,800		9				
Do	East Kingston	Prosp	1907	2027	do	Calcareous sandstone.		2.70	.1	2.8				15.0	13				
Do	Kingston	Local	1906	1693	do	Limestone		2.75	.1	3.1				14.8	6				
Do	do	Comm	1909	3932	do	Dolomitic limestone.		2.70	.3	4.8				15.1	7				
Do	do	do	1911	5222	do	Limestone		2.69	.2	4.0				16.8	8				
Do	do	do	1911	5223	do	do		2.69	.1	5.3				16.7	7				
Do	do	do	1911	5574	do	do		2.70	.2	5.0				16.4	10				
Do	do	Prosp	1912	6363	do	Feldspathic sandstone.		2.50	.6	3.1				17.0	16				
Do	Marlboro	Comm	1925	27364	Gravel	DoLS	2			12.4		A							
Do	Rosendale	do	1942	57661	Stone	Limestone		2.73	.2		24.8	B							
Do	do	do	1942	57662	do	do							32,000		5				
Do	Ulster Park	Local	1913	6634	do	Calcareous sandstone.		2.70	.5	5.3				13.3	16				
Do	West Camp	Prosp	1904	1100	do	Limestone		2.70	.2	3.0				16.9	5				
Washington.	Greenwich	do	1905	1257	do	do		2.85	.1	2.2				16.7	19				
Do	Smiths Basin	do	1913	6732	do	Siliceous dolomite		2.80	.1	2.7				18.3	14				
Wayne	Newark	do	1904	983	do	Dolomitic limestone.		2.55	1.3	5.3									
Do	do	do	1904	984	do	Limestone		2.75	.2	4.9				12.2					
Do	Ontario	do	1921	20820	do	Dolomite		2.82	.3	4.2				14.7	9				
Westchester.	Briarcliff Manor.	do	1904	941	do	Hornblende schist		3.05	.1	2.5				17.2	22				

Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

NEW YORK—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Westchester.	Cortland Township.	Prosp	1907	2160	Stone	Diorite		3.05	0.3	3.0				16.7	10				
Do	do	do	1907	2161	do	do		2.95	.2	3.8				16.6	8				
Do	Mount Pleasant	do	1934	40193	do	Biotite gneiss		2.79	.3	4.2					7				
Do	do	do	1934	40194	do	do					47.9	A							
Do	Verplanck	do	1916	10909	do	Hypersthene syenite.		2.87	.4	3.5				17.0	9				
Do	do	Comm	1917	11928	do	Dolomitic marble		2.83	.3	6.0				18.7	3				
Do	do	do	1921	20171	do	do		2.84	.2	5.6				13.0	4				
Do	do	do	1921	20172	do	do		2.84	.1	5.1				13.0	5				
Do	do	do	1921	20173	do	do		2.81	.2	4.2				12.0	4				
Do	do	do	1922	21031	do	do		2.83	.6	4.0			23,310	14.3	4				
Do	Yorktown Heights.	Prosp	1917	11199	do	Granite		2.70	.5	5.8			16,200	18.0	5				
Wyoming	Attica	Comm	1945	67679	Gravel	LSQzGQ													
Yates	Bellona	Prosp	1901	404	Stone	Limestone		2.69	.1	5.3								[12] 21.5	1½–#4

NORTH CAROLINA

Alamance	Burlington	Prosp	1909	3741	Stone	Diabase [6]		2.90	0.1	6.1				18.0	22				
Do	do	Local	1914	7771	do	Gabbro [6]		2.95	.2	4.1				17.8	12				
Do	do	Comm	1941	55763	do	Epidosite		2.89	.2		13.1	B	37,800						
Do	Haw River	Prosp	1903	822	do	Chlorite epidote schist.		2.80		3.1				18.5	34				
Do	do	do	1920	15877	do	Diabase		2.91	.3	3.5				18.0	16				
Alexander	Hiddenite	Comm	1921	19788	do	Granite gneiss		2.64	.4	7.2				18.7	6				
Alleghany	Cherry Lane	Prosp	1935	42387	do	Mica gneiss				6.7	61.7	A							
Do	do	do	1935	42388	do	do				23.0	93.6	A							
Do	do	do	1935	42389	do	Aplitic gneiss				7.2	67.6	A							
Do	do	do	1935	42390	do	Sericite gneiss					28.5	A							
Do	do	do	1935	42391	do	Mica gneiss				5.5	41.0	A							
Do	do	do	1935	42394	do	Aplitic gneiss				8.8	56.8	A							
Do	do	do	1935	42395	do	Mica gneiss				6.8	40.6	A							
Do	do	do	1935	42396	do	Granite gneiss				6.2	49.2	A							
Do	do	do	1935	42404	do	Sericite gneiss				19.5	50.7	A							
Do	do	do	1935	42422	do	Mica gneiss				15.6	60.2	A							
Do	do	do	1935	42873	do	do				5.8	29.2	A							
Do	do	do	1935	42874	do	Sericite gneiss				5.5	38.3	A							
Do	Ennice	do	1935	42355	do	Mica gneiss				17.5	79.9	A							
Do	do	do	1935	42356	do	Aplitic gneiss				4.6	51.5	A							
Do	do	do	1935	42358	do	do				4.6	50.2	A							
Do	do	do	1935	42360	do	Mica gneiss				21.6	86.8	A							
Do	do	do	1935	42382	do	do				9.8	66.6	A							
Do	do	do	1935	42383	do	do				7.9	42.2	A							
Do	Glade Valley	do	1935	42359	do	do					47.9	A							
Do	do	do	1935	42384	do	do				9.1	43.2	A							
Do	do	do	1935	42385	do	do				9.1	59.5	A							
Do	do	do	1935	42386	do	do				7.2	41.2	A							
Do	do	do	1935	42392	do	do				7.3	51.2	A							
Do	do	do	1935	42393	do	do				7.1	44.3	A							
Do	do	do	1935	42401	do	Aplitic gneiss				4.9	70.7	A							
Do	do	do	1935	42402	do	Sericite gneiss				16.9	52.4	A							
Do	do	Local	1937	44532	do	Mica gneiss				6.9	39.5	A							
Do	do	do	1938	44895	do	Sericite gneiss					35.2	B							
Do	do	Prosp	1938	44968	do	do					36.3	A							
Do	Hare	do	1935	42373	do	Mica gneiss				14.0								S	1½–1
Do	do	do	1935	42489	do	do				4.0	38.1	A						Q	1½–1
Do	do	do	1935	42490	do	do				8.0	38.1	A							
Do	Laurel Springs	do	1935	42423	do	do				5.2	34.7	A							
Do	do	do	1935	42424	do	do				9.4	58.2	A							
Do	do	do	1935	42425	do	Granite gneiss				6.3	37.1	A							
Do	do	do	1935	42426	do	do				6.0	48.7	A							
Do	do	do	1935	42427	do	Mica gneiss				6.4	27.5	A							
Do	do	do	1935	42428	do	Granite gneiss				4.0	40.4	A							

Do	do	do	1935	42429	do	do				2.6	22.9	A									
Do	do	do	1935	42431	do	do				5.1											
Do	do	do	1935	42432	do	Mica gneiss				7.4	52.4	A									
Do	do	do	1935	42433	do	do				5.2	36.5	A									
Do	do	do	1935	42434	do	Granite gneiss				3.3	33.0	A									
Do	do	do	1935	42435	do	Mica gneiss				7.5	31.6	A									
Do	do	do	1935	42436	do	do				6.0	65.4	A									
Do	do	do	1936	42875	do	Sericite gneiss				6.3	51.0	A									
Do	do	do	1936	42876	do	Mica gneiss				3.3	30.0	A									
Do	do	Local	1936	43026	do	Mica schist				9.4	49.6	A									
Do	do	do	1936	43036	do					6.2	28.9	A									
Do	do	do	1937	44348	do	Mica gneiss							26,740						S	1½–1	
Do	do	do	1937	44544	do	Mica schist				5.2	29.5	A									
Do	do	do	1939	46458	do	Quartzite					28.3	B									
Do	Roaring Gap	do	1936	42861	do	Biotite schist				3.4	22.6	A	28,980						S	1½–1	
Do	do	do	1936	42862	do	do				3.5	23.4	A	29,010						S	1½–1	
Do	Sparta	do	1921	20189	do	Biotite gneiss		2.74	.2	4.4				18.7	10						
Do	do	Prosp	1921	20196	do	Quartz		2.60	.4	12.8				17.7	3						
Do	do	do	1935	42397	do	Granite gneiss				8.7	59.1	A									
Do	do	do	1935	42398	do	Mica gneiss				7.4	40.4	A									
Do	do	do	1935	42399	do	Aplitic gneiss				4.0	29.0	A									
Do	do	do	1935	42400	do	do				5.3	42.3	A									
Do	do	do	1936	42627	do	Sericite gneiss				4.7	28.2	A							S	1½–1	
Do	do	do	1936	42902	do	Mica schist				3.5	34.9	A									
Do	do	Local	1937	44543	do	do				4.5	31.9	A									
Do	Todds	Prosp	1935	42410	do	Granite gneiss				6.4	55.6	A									
Do	Whitehead	do	1935	42403	do	Mica gneiss				9.0	59.7	A									
Do	do	do	1935	42419	do	Aplitic gneiss				5.0	56.8	A									
Do	do	do	1935	42420	do	Sericite gneiss				6.5	30.1	A									
Do	do	Local	1937	44546	do	Biotite gneiss				5.6	34.2	A									
Do	do	do	1938	46040	do	Biotite sericite gneiss.					28.8	A									
Do	do	do	1938	46150	do	Sericite schist					30.3	A									
Anson	Gravelton	Comm	1943	60651	Gravel	QQz	¾	2.62	.2		57.2	B									
Do	Lilesville	do	1922	22239	do	Quartz	1½			22.5		A									
Do	do	do	1935	40826	do	do	1½				62.2	A									
Do	do	do	1935	40827	do	do	1½				58.8	A									
Do	do	do	1935	42144	do	do	1½			17.6	54.0	A									
Do	do	do	1936	42991	do	do	2	2.63	.2	14.6	53.7	A									
Do	do	do	1936	42996	do	do	2	2.63	.3	19.4	54.9	A									
Do	do	do	1937	44240	do	do					52.8	A									
Do	do	do	1937	44248	do	do	1½			12.8		B									
Do	do	do	1937	44735	do	do					50.0	A									
Do	do	Prosp	1941	55749	Stone	Quartzite		2.65	.3				65,600								
Do	do	do	1941	55768	do	do					13.4	B									
Do	do	Comm	1943	61598	Gravel	Quartz	¾	2.62	.2		40.0	C									
Do	Peachland	Prosp	1941	55767	Stone	Feldspathic quartzite.		2.64	.6				37,500								
Do	Wadesboro	Local	1903	825	do	Diabase		3.00	.0	1.9				18.4	27						
Ashe	Deep Gap	Prosp	1935	42562	do	Aplitic gneiss				4.5	52.2	A									
Do	do	do	1935	42563	do	Granite				5.0	55.6	A									
Do	Glendale Springs	do	1935	42510	do	Mica gneiss				5.8	50.2	A									
Do	do	do	1935	42511	do	Aplitic gneiss				4.0	34.6	A									
Do	do	do	1935	42514	do	Mica gneiss				2.6	35.7	A									
Do	do	do	1935	42517	do	do				10.6	63.4	A									
Do	Grassy Creek	Local	1947	74281	do	Gneiss		2.81	.6		21.3	A							3.2	1½–#4	
Do	do	do	1947	74282	do	Epidosite		3.01	.6		20.7	A							2.2	1½–#4	
Do	Idlewild	Prosp	1935	42522	do	Quartzite				3.6	30.4	A									
Do	do	do	1935	42554	do	Mica gneiss				8.8	63.4	A									
Do	do	do	1935	42555	do	Sericite gneiss				6.6	40.7	A									
Do	do	do	1935	42556	do	Mica gneiss				9.9	71.1	A									
Do	do	Local	1936	43049	do	Granite gneiss				6.6	60.9	A									
Do	do	do	1936	43050	do	Hornblende gneiss				6.5	70.4	A									
Do	do	do	1936	43057	do	Amphibolite				4.9	60.3	A							S	1½–1	
Do	Laurel Springs	Prosp	1935	42500	do	Mica gneiss				6.9	43.7	A									
Do	do	do	1935	42501	do	do				5.2	33.9	A									
Do	do	do	1935	42502	do	Granite gneiss				4.9	43.3	A									
Do	do	do	1935	42503	do	Aplitic gneiss				3.4	40.0	A									
Do	do	do	1935	42504	do	do				4.8	47.8	A									
Do	do	do	1935	42505	do	do				9.5	26.0	A									
Do	Jefferson	do	1920	17048	do	Hornblende gneiss		2.96	.5	5.2				12.0	6				3.4	1½–#4	
Do	do	do	1947	74279	do	Hornblende schist		2.93	1.0		37.4	A									
Do	Obids	do	1935	42515	do	Sericite gneiss				10.3	39.1	A									
Do	do	do	1935	42520	do	Aplitic gneiss				5.4	42.6	A									
Do	do	do	1935	42521	do	do				3.5	40.3	A									
Do	do	do	1935	42523	do	Sericite gneiss				10.7	44.2	A									
Do	Ore Knob	Local	1936	42836	do	Gneissoid granite				3.4	27.1	A									
Do	do	do	1936	42864	do	do				4.1	28.7	A									
Do	do	do	1938	44955	Slag	Smelter					16.8	A									
Do	Smethport	Prosp	1947	74460	Stone	Hornblende schist		2.98	.7		60.0	A							3.6	1½–#4	

[6] Altered. [12] 20 cycles, freezing and thawing; loss determined with half-size sieves.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

NORTH CAROLINA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Ashe	Smethport	Prosp	1947	74461	Stone	Horneblend schist		3.09	0.5		46.4	A						4.2	1½–#4
Do	Summit	do	1936	43058	do	Granite gneiss				4.1	50.9	A							
Do	do	do	1936	43059	do	Aplitic gneiss				5.1	78.9	A							
Do	do	Local	1937	44577	do	Quartzite				3.4									
Do	do	do	1938	44900	do	Gneiss					55.3	A							
Do	Todd	Prosp	1947	74277	do	Amphibolite		3.04	.4		33.2	A						.6	1½–#4
Do	Wagoner	do	1935	42509	do	Mica gneiss				6.1	51.6	A							
Do	West Jefferson	do	1947	74278	do	Hornblende schist		3.02	.8		36.0	A						1.9	1½–#4
Do	do	Local	1947	74280	do	do		3.03	.7		60.8	A						1.8	1½–#4
Do	do	do	1947	74458	do	do		3.00	.7		64.1	A						7.8	1½–#4
Do	do	do	1947	74459	do	Hornblende gneiss		2.96	.6		37.6	A						2.8	1½–#4
Avery	Cranberry	do	1915	9226	do	Peridotite		3.85	.2	3.5				16.7	9				
Do	do	do	1916	10193	do	Hornblende gneiss		3.33	.3	4.3									
Do	do	do	1916	10194	do	do		3.08	.3	5.5									
Do	Crossnore	Prosp	1937	44216	do	Gneissoid granite		2.64	.9	3.7	40.1	A						S	1½–1
Do	do	do	1937	44217	do	do		2.63	.6	4.3	39.1	A						S	1½–1
Do	Gragg	do	1936	42821	do	Feldspathic quartzite.				2.7	30.5	A						S	1½–1
Do	do	do	1936	42822	do	do				4.0	29.5	A						S	1½–1
Do	Linville	do	1936	42823	do	do				3.2	42.6	A							
Do	do	do	1936	42824	do	do				3.1	35.6	A						S	1½–1
Do	do	do	1936	42825	do	Quartzitic sandstone.					48.3	A						S	1½–1
Do	do	do	1936	42826	do	do					44.2	A							
Do	do	do	1936	43031	do	Porphyritic granite.				4.1	31.4	A						S	1½–1
Do	do	do	1939	46608	do	Micaceous quartzite.							32,120						
Do	do	do	1939	46609	do	do							32,480						
Do	Linville Falls	do	1937	44218	do	Hornblende schist		3.12	.3	3.4	37.4	A						S	1½–1
Do	do	do	1938	46366	do	Mica schist							13,980					S	1½–1
Do	Pineola	do	1936	42827	do	Quartzite					37.4	A						S	1½–1
Do	do	do	1936	42828	do	do				3.8	29.3	A						S	1½–1
Do	do	do	1936	42829		Feldspathic quartzite.				3.0	29.3	A						S	1½–1
Do	do	do	1936	42832	do	do				2.7	29.2	A							
Do	do	do	1936	43060	do	Aplitic gneiss				4.2	56.9	A						S	1½–1
Do	do	do	1938	46178	do	Granite gneiss					44.6	A							
Do	do	do	1938	46197	do	do					34.6	A							
Do	do	Local	1938	46326	do	Gneissoid granite					29.0	A							
Do	do	do	1938	46374	do	do					32.8	A	18,790						
Do	do	do	1938	46400	do	Feldspathic quartzite.					27.3	B							
Do	do	Comm	1939	46611	do	do					24.2	A							
Do	do	do	1939	46670	do	do		2.64	.3		29.8	A							
Do	do	do	1939	46903	do	do					35.8	A							
Do	do	do	1940	50975	do	do					29.7	B							
Do	do	Prosp	1941	52947	do	Quartzite					43.9	A							
Do	do	Comm	1941	52948	do	Feldspathic quartzite.					22.2	A							
Beaufort	Washington	Prosp	1911	4991	do	Siliceous shell limestone.		2.24	2.0	33.6				17.6	5				
Buncombe	Asheville	do	1901	469	do	Schist		3.21	.1	5.7									
Do	do	Local	1902	627	do	Granite porphyry		2.70	.2	2.2									
Do	do	do	1902	628	do	Diorite gneiss		2.95	.2	2.3									
Do	do	Prosp	1902	705	do	Hornblende schist		3.10	.3	3.6									
Do	do	do	1903	777	do	Granite gneiss		2.70	.1	3.7									
Do	do	do	1903	778	do	Biotite schist		2.75	.1	3.4									
Do	do	do	1910	4963	do	Dolomite				4.0				17.3	14				
Do	do	do	1914	8133	do	Granite		2.65	.2	2.8				18.4	11				
Do	do	Local	1914	8134	do	Aplitic granite		2.65	.2	2.2				18.7	7				
Do	do	do	1914	8135	do	Biotite gneiss		2.85	.2	5.6				16.6	9				
Do	do	do	1916	9858	do	do		2.70	.2	4.4				19.3	7				
Do	do	Comm	1916	10972	do	do		2.70	.8	2.7				18.0	10				
Do	do	Prosp	1917	11344	do	do		2.67	.2	4.1				17.3	7				
Do	do	do	1917	11345	do	do		2.74	.1	3.5				16.7	10				
Do	do	Local	1921	17869	do	Granite		2.64	.4	3.0				19.3	11				

Do	do	Prosp	1927	28795	do	Syenite		2.66	.3				26,990	18.0	8				
Do	do	do	1936	42773	do	Biotite gneiss				4.7	28.3	A						S	1½-1
Do	do	do	1936	42774	do	Micaceous quartzite.				2.6	19.9	A							
Do	do	do	1936	42775	do	Biotite gneiss				5.2	32.2	A						S	1½-1
Do	do	do	1936	42778	do	Gneissoid granite				3.5	29.1	A						S	1½-1
Do	do	do	1936	42779	do	Micaceous quartzite				2.5	22.1	A							
Do	do	do	1936	42780	do	Gneissoid granite				4.9	40.5	A						S	1½-1
Do	do	Local	1937	43198	do	Biotite gneiss					28.0	B							
Do	do	do	1937	44537	do	do				3.3	23.7	A							
Do	do	Prosp	1937	44730	do	do				4.1	32.0	A							
Do	do	Local	1941	53409	do	Quartzite		2.71	.2		24.2	A							
Do	do	do	1941	53411	do	Pyroxene epidote quartzite.		2.97	.4		24.0	A							
Do	do	Prosp	1941	53412	do	Biotite schist		2.72	.3		33.9	A							
Do	do	do	1941	53413	do	Amphibolite		3.08	.5		45.9	A							
Do	do	Local	1947	72682	do	Gneiss					34.0	A							
Do	do	do	1947	72683	do	do					31.8	A							
Do	do	do	1947	72684	do	do					44.6	A							
Do	do	Prosp	1947	72685	do	do					47.0	A							
Do	do	do	1947	72686	do	do					54.3	A							
Do	do	Local	1947	72687	do	Schist					36.3	A							
Do	do	do	1947	72688	do	do					33.0	A							
Do	do	do	1947	72689	do	Mica schist					32.6	A							
Do	do	do	1948	75730	do	Schist					62.8	A							
Do	do	do	1948	75731	do	do					35.9	A							
Do	do	do	1949	76910	do	do					36.6	A							
Do	do	Prosp	1949	76911	do	Syenite					65.4	A							
Do	Balsam Gap	do	1940	51023	do	Biotite schist					32.9	A							
Do	Barnardsville	Local	1941	53322	do	Schist		2.73	.4		35.3	A							
Do	do	do	1941	53323	do	Pyroxene gneiss		2.69	.4		36.4	A							
Do	Candler	Comm	1950	82755	Gravel	GScGn(Q)					45.4	A							
Do	Craggy	do	1919	13901	Stone	Granite		2.61	.3	2.8				18.5	12				
Do	Montford	Local	1903	809	do	Microgranite		2.65	.1	2.3									
Do	Montreat	Prosp	1936	42637	do	Gneissoid granite				3.1	42.9	A							
Do	do	do	1936	42639	do	Aplitic granite				3.5	37.9	A							
Do	do	do	1936	42640	do	Aplitic gneiss				4.6	44.1	A							
Do	do	do	1936	42641	do	do				3.4	37.2	A							
Do	do	do	1936	42642	do	do				4.0	47.6	A							
Do	do	do	1936	42762	do	Micaceous quartzite.				4.4	36.5	A						S	1½-1
Do	do	do	1936	42763	do	Mica gneiss				6.0	41.1	A						S	1½-1
Do	do	do	1936	42764	do	Micaceous quartzite.				3.3	25.8	A						S	1½-1
Do	do	do	1936	42765	do	Granite				5.4	55.7	A							
Do	do	do	1936	42766	do	do				12.8	65.7	A						S	1½-1
Do	do	do	1936	42767	do	Granodiorite				3.6	35.4	A						S	1½-1
Do	do	do	1936	42768	do	Aplitic granite				4.2	47.6	A							
Do	do	do	1936	42769	do	Gneissoid granite				5.0	29.6	A							
Do	do	do	1936	42770	do	do				5.8	44.7	A						S	1½-1
Do	do	do	1936	42771	do	Granite				5.8	51.7	A						S	1½-1
Do	do	do	1936	42772	do	Granite gneiss				5.1	32.4	A						S	1½-1
Do	do	do	1936	42776	do	Aplitic granite				3.1	33.3	A							
Do	do	do	1936	42777	do	Gneissoid granite				3.3	37.1	A						S	1½-1
Do	do	do	1936	42781	do	Biotite gneiss				4.3	31.1	A						S	1½-1
Do	do	do	1936	42782	do	Aplitic granite				3.7	40.3	A							
Do	do	do	1936	42783	do	Amphibolite				3.4	27.3	A						S	1½-1
Do	do	Local	1938	46375	do	Mica gneiss					31.0	A							
Do	Newbridge	Comm	1949	77105	do	Granite					28.0	A						1.6	1½-#4
Do	Oteen	Local	1941	53410	do	Biotite gneiss		2.76	.3		24.9	A							
Do	do	Prosp	1945	68512	do	Schist		2.70	.5		32.7	A							
Do	do	do	1945	68513	do	Mica schist		2.74	.2		24.4	A							
Do	do	do	1945	68514	do	Mica gneiss		2.77	.4		28.9	A							
Do	do	do	1945	68515	do	do		2.73	.4		26.4	A							
Do	Swannanoa	Comm	1936	42994	Gravel	GGnQ		2.67	1.2	18.5	47.9	A							
Do	do	do	1937	44623	do	GnScGQ	1			15.8		B						8.5	1-#4
Do	do	do	1937	44728	do	GnScGQ	1½				41.9	A							
Do	do	do	1937	44802	do	GnQG	1				38.6	B							
Do	do	do	1938	44857	do	GnQG	1½				41.4	A							
Do	do	do	1938	46383	do	Gneiss	1				39.7	B							
Do	do	do	1940	49391	do	GnQzQ	1				38.2	B							
Do	do	do	1940	49883	do	GnSc	1				41.0	B							
Do	do	do	1940	49884	do	GnSc	1½				32.4	A							
Do	do	do	1940	51379	do	GSc	1				39.7	B							
Do	do	do	1941	53040	do	GnScGQ	¾	2.69	1.0		38.8	B							
Do	do	do	1941	53175	do	GnScGQ	1½				42.1	A							
Do	do	do	1941	53707	do	GnScGQ	1½	2.69	1.0		42.0	A							
Do	do	do	1945	68508	do		1½				48.0	A							
Do	do	do	1947	72927	do						43.3	A							
Do	do	do	1949	77535	do	GGnSc	1½				38.1	A						2.3	1½-#4

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

NORTH CAROLINA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Buncombe	Swannanoa	Comm	1949	78870	Gravel		1	2.78	1.2		39.4	B							
Do	do	do	1949	79074	do	GnScGQ	1½	2.70	1.3		37.3	A				106	1½–#4	1.3	1½–#4
Do	do	do	1949	79075	do						38.0	F							
Do	do	do	1950	80282	do	GnScGQ	1				41.1	B						2.2	¾–#4
Do	do	do	1950	81441	do	GnScGQ	1½				36.4	A						3.4	1½–#4
Do	do	do	1950	82358	do	GnScGQ	1½				38.5	A							
Do	do	do	1950	82360	do	GnScGQ	½				36.7	C						3.0	⅜–#4
Do	do	do	1950	82361	do	GnScGQ	1				39.5	B						6.0	¾–#4
Do	do	do	1950	82753	do	GnScGQ	1½	2.70	1.1		38.7	A						4.2	1½–#4
Do	do	do	1950	82754	do		½	2.66	1.3									3.6	⅜–#4
Do	West Asheville	Local	1938	46381	Stone	Biotite gneiss					29.0	B							
Burke	Linville Falls	Prosp	1936	42830	do	Feldspathic quartzite.					35.3	A						S	1½–1
Do	do	do	1936	42831	do	do					47.2	A						S	1½–1
Do	Morgantown	do	1902	535	do	Basalt		3.00	.1	2.0									
Cabarrus	Concord	do	1901	434	do	Microgranite		2.60	.2	1.8									
Do	do	Comm	1901	436	do	Syenite		2.64	.2	5.7									
Do	do	do	1902	513	do	do		2.70	.2	2.8									
Do	do	Local	1903	812	do	Hornblende granite.		2.75	.1	2.2				18.5	22				
Do	do	Prosp	1913	6566	do	Augite syenite		2.70	.1	5.0				18.3	11				
Caldwell	Granite Falls	do	1920	16071	do	Biotite gneiss		2.66	.5	3.1				16.7	11				
Caswell	Stokesland	Comm	1920	16514	do	Granite gneiss		2.60	.5	3.7					12				
Do	do	do	1920	17474	do	do		2.60	.5	4.5				18.0	10				
Do	do	do	1921	18980	do	Sericite gneiss		2.60	.5	4.1				18.0	7				
Do	do	do	1921	20141	do	Granite gneiss		2.57	.4	2.9				18.3	8				
Do	do	do	1924	24902	do	do		2.60	.4	4.5			28,100	19.3	15				
Do	Yanceyville	Prosp	1921	19789	do	Biotite gneiss		2.70	.4	6.4				18.3	8				
Catawba	Hickory	do	1910	4717	do	Granite gneiss		2.70	.1	6.9				18.3	4				
Do	do	do	1910	4723	do	do		2.75	.1	6.3				17.9	8				
Chatham	Siler City	do	1903	839	do	Chlorite-epidote schist.		2.80	.1	2.3				17.5					
Do	do	do	1920	17466	do	Andesite [6]		2.88	.1	1.7				17.5	45				
Cherokee	Andrews	do	1909	3382	do	Quartzite		2.65	.2	4.9				19.3	15				
Do	do	do	1909	3383	do	Marble		2.75	.1	6.0				14.1	3				
Do	Murphy	do	1912	6058	do	Biotite schist		2.75	.1					16.8	8				
Do	do	do	1912	6059	do	Sericite biotite schist.		2.80	.3					18.2	5				
Do	do	do	1912	6060	do	Sericite schist		2.65	.1					19.2	6				
Do	do	do	1912	6167	do	do		2.75	.2	6.1				16.2	10				
Do	do	do	1912	6196	do	Mica schist		2.80	.2	4.1				16.2	7				
Do	do	do	1912	6198	do	Sandstone		2.60	.3	3.2									
Do	do	Local	1912	6199	do	Marble		2.75	.2	4.4				14.7	6				
Do	Regal	do	1913	7022	do	do		2.75	.0	4.7			16,800	14.0	4				
Do	do	do	1917	11507	do	do		2.71	.2	6.1				12.3	3				
Cleveland	Kings Mountain	Comm	1946	71714	do	Calcareous schist					32.3	A						1.9	1½–#4
Do	do	do	1948	75636	do	Limestone		2.76	.3		29.3	A						.9	1½–#4
Do	Shelby	Prosp	1908	2576	do	Biotite gneiss		2.80	.2	11.3				17.8	7				
Craven	Jasper	Local	1924	24488	do	Shell limestone		2.25	2.8	24.0									
Do	New Bern	Prosp	1901	381	do	do		2.20	1.4	34.2									
Do	do	do	1918	13027	do	do				49.0									
Davidson	Lexington	Local	1942	55849	do	Rhyolite		2.66	.1		15.5	A	70,300		16				
Do	do	do	1942	55850	do	do		2.68	.1		15.6	A	77,800		16				
Do	do	do	1942	55851	do	do		2.67	.1		15.7	A	76,300		17				
Do	Newsom	Prosp	1914	7775	do	do		2.65	.1	2.7				19.5	20				
Do	do	Local	1915	8710	do	do.[5]		2.80	.3	4.1				19.3	33				
Do	do	Comm	1921	20046	do	do.[6]		2.65	.1	2.8				18.7	32				
Do	do	do	1923	23509	do	Epidote quartzite		2.83	.1	2.4				19.0	24				
Do	do	do	1923	23510	do	Siliceous slate		2.81	.1	3.4				17.3	19				
Do	Thomasville	Prosp	1909	3209	do	Andesite [6]		2.90	.3	2.7				18.3	32				
Durham	Durham	do	1908	2988	do	Hornblende-epidote schist.		2.95	.2					17.3	14				
Do	do	Comm	1925	26894	do	Diabase		2.96	.1	3.1				18.0	17				
Do	do	do	1941	55765	do	do		2.97	.2		22.2	B	25,600						
Forsyth	Bethania Station	Prosp	1903	813	do	Olivine basalt		3.05	.0	3.0				18.3	39				
Do	Winston-Salem	do	1905	1403	do	Granite gneiss		2.65	.1	2.0				18.5	19				
Do	do	do	1905	1404	do	Epidote quartzite		3.00	.4	3.9				18.0	15				

Do	do	Local	1914	7561	do	Granite		2.65	.3	5.7				17.4	5			
Do	do	do	1915	8396	do	do							13,140					
Do	do	do	1915	8397	do	do							11,880					
Do	do	Comm	1920	16896	do	Biotite gneiss		2.72	.4	4.3				16.7	8			
Do	do	Prosp	1922	21768	do	Biotite granite		2.65	.4	6.1			22,890	16.7	5			
Do	do	do	1923	23511	do	Micaceous quartzite.		2.64	.3	6.5			25,580	19.3	9			
Do	do	Comm	1933	34887	do	Biotite granite		2.64	.3	3.3					7			
Franklin	Franklinton	Prosp	1903	838	do	Olivine diabase		2.95	.2	2.7				17.4	13			
Gaston	Belmont	Comm	1917	12180	do	Aplitic granite		2.78	.5	2.9								
Do	do	Prosp	1919	14403	do	Biotite granite		2.74	.2	3.5				17.8	8			
Do	Gastonia	Local	1915	8503	do	Quartzite		2.80	.3	2.6				18.8	12			
Do	do	Comm	1915	8682	do	do		2.80	.3				31,520					
Do	do	do	1915	8881	do	do							17,100					
Do	do	do	1915	8882	do	Aplitic granite		2.80	.1	2.5								
Guilford	Bessemer	Local	1920	15878	do	Amphibolite		3.05	.2	2.8				18.7	18			
Do	Greensboro	do	1903	817	do	Granite		2.75	.1	2.6								
Do	do	Prosp	1903	818	do	Dolomitic sandstone.		2.85	.1	1.9				17.2	27			
Do	do	Local	1903	819	do	Diabase		3.00	.1	1.6								
Do	do	Prosp	1903	820	do	Hornblende gabbro.		3.10	.1	3.5								
Do	do	Local	1903	821	do	Diorite		3.10	.1	2.9								
Do	do	do	1903	823	do	do		2.95	.0	2.3				18.4	24			
Do	do	Prosp	1920	15775	do	Quartz		2.63	.1	8.6								
Do	Jamestown	do	1903	815	do	Diabase		2.95	.1	2.1				18.1	27			
Do	do	do	1903	816	do	Granite		2.70	.1	3.4				18.0	10			
Do	Stokesdale	Comm	1933	33885	do	Biotite granite		2.71	.3	3.8					6			
Do	do	do	1934	40342	do	Gneissoid granite		2.68	.4	7.6					8			
Do	do	do	1936	42995	do	Biotite granite		2.69	.5	4.0	51.1	A					0.5	1½-1
Do	do	do	1937	44282	do	Biotite gneiss				4.2					6		S	1½-1
Do	Summerfield	Prosp	1921	19979	do	Schist		2.68	.3	3.5				18.0	9			
Halifax	Littleton	do	1920	16536	do	Hornblende quartzite.		2.73	.2	2.7					17			
Do	do	Local	1921	20045	do	Hornblende gneiss		2.70	.3	2.8				18.7	11			
Harnett	Bunnlevel	Comm	1948	75520	Gravel	Quartz		2.65	.3		40.7	A						
Do	Lillington	Prosp	1935	42378	do	do	1½			33.6	63.5	A						
Haywood	Bridges Camp Gap.	do	1940	50553	Stone	Biotite schist					36.3	A					S	1½-1
Do	do	do	1940	50554	do	do					55.9	A					S	1½-1
Do	Canton	Local	1918	12770	do	Granite gneiss		2.52	.7	20.3				17.3	6			
Do	Maggie	do	1942	56470	Gravel	Gneiss and pegmatite.	2½	2.68	1.2		31.8	A						
Do	do	Prosp	1946	72588	Stone	Biotite gneiss		2.66	.8		22.6	A					1.3	1½-#4
Do	do	Local	1948	74795	Gravel	GGn	1½	2.68	.9		29.6	A						
Do	Soco Gap	do	1946	72589	Stone	Biotite gneiss		2.64	.6		28.1	A					1.9	1½-#4
Do	Spruce	Prosp	1940	49049	do			2.70	.4		49.1	A						
Do	do	do	1940	49593	do	Pyroxene gneiss		2.71	.4		40.1	A					S	1½-1
Do	do	do	1940	50252	do	Biotite schist					41.5	A						
Do	do	do	1940	50253	do	do					41.4	A						
Do	Waynesville	do	1917	11751	do	Biotite gneiss		2.77	.4	5.7				18.0	5			
Do	do	Local	1935	42548	do	Granite gneiss				2.9	26.4	A					S	1½-1
Do	do	Prosp	1941	54868	do	Micaceous quartzite.					20.0	A						
Do	do	do	1947	73459	do	Mica gneiss			.6		31.1	B					1.6	1½-#4
Do	do	do	1947	73460	do	do			.6		30.4	B					1.3	1½-#4
Do	do	do	1947	73461	do	do			.7		45.3	B					1.2	1½-#4
Do	do	do	1947	73462	do	do			.6		43.4	A					1.4	1½-#4
Do	do	do	1947	73463	do	do		2.61	1.4		46.3	A	22,700				4.6	1½-#4
Do	do	do	1947	73464	do	do		2.64	.7		33.6	A	38,000				1.3	1½-#4
Do	do	do	1947	73465	do	Biotite schist		2.66	1.0		47.2	A	25,400				6.6	1½-#4
Henderson	Balfour	do	1899	323	do					3.6								
Do	do	Local	1903	810	do	Granite gneiss		2.65	.1	3.2								
Do	do	Comm	1920	17480	do	Gneissoid granite				3.4								
Do	Fletcher	do	1931	34047	do	Marble		2.74	.2	5.0				15.0	5			
Do	do	do	1931	34062	do	Dolomitic marble		2.80	.2	5.5				15.0	3			
Do	do	do	1932	34474	do	do									4			
Do	do	do	1937	43197	do	do					24.6	A						
Do	do	do	1942	55798	do	do		2.78	.1		23.4	B	20,500					
Do	do	do	1949	76889	do	do		2.87	.2		17.1	B						
Do	do	do	1950	82359	do	do					21.3	B					3.7	1-#4
Do	do	do	1950	82362	do	do					24.9	A					8.1	1½-#4
Do	Hendersonville	Local	1908	2755	do	Granite gneiss		2.65	.1	3.1				18.5	10			
Iredell	Mooresville	Prosp	1915	8576	do	Granite		2.70	.2	3.0			26,000	18.6	11			
Do	Statesville	do	1921	19653	do	Biotite gneiss		2.62	.4	6.0			20,240	17.3	7			
Jackson	Big Witch Gap	do	1941	55368	do	Mica schist		2.84	.4		32.2	A						
Do	Cherokee	do	1942	56013	do	Gneissoid granite					31.6	A					S	1½-1
Do	Soco Gap	do	1941	55593	do	Biotite gneiss					34.5	A					S	1½-1
Do	do	do	1946	72590	do	Mica schist		2.83	.6		18.3	A					1.2	1½-#4
Do	Sylva	do	1913	6793	do	do		2.95	.3	6.4				15.1	7			

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

NORTH CAROLINA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Jackson	Sylva	Prosp	1913	6794	Stone	Biotite gneiss		2.70	0.2	4.3				18.4	7				
Do	do	do	1913	6795	do	do		3.00	.2	6.1				17.2	8				
Jones	Dover	do	1918	13050	do	Fossiliferous limestone.		2.40		10.6									
Do	Pollocksville	Local	1918	12883	do	Shell limestone				16.9									
Lee	Osgood	Prosp	1921	20043	do	Siliceous slate		2.79	.2	2.8				13.7	11				
Do	Sanford	do	1921	19986	do	Basalt [6]		2.88	.2	2.9				17.0	23				
McDowell	Ashford	Local	1917	11397	do	Dolomitic marble		2.86	.2	4.5				16.0	8				
Do	do	Comm	1931	34061	do	Dolomite		2.85	.3	4.8				15.7	11				
Do	do	do	1936	42989	do	do		2.82	.6	5.0	33.0	A							
Do	do	do	1938	44920	do	do					27.0	A						S	1½–1
Do	do	do	1938	44950	do	do					30.1	A						1.3	1½–#4
Do	do	do	1938	46007	do	do					29.0	A						3.6	1½–#4
Do	do	do	1938	46058	do	do					32.1	A						2.7	1½–#4
Do	do	do	1938	46115	do	do					29.7	A							
Do	do	do	1938	46116	do	do					29.0	A							
Do	do	do	1939	46462	do	do					27.0	A							
Do	do	do	1939	46619	do	do					30.2	A							
Do	do	do	1939	46765	do	Siliceous limestone.					29.6	A							
Do	do	do	1940	49290	do	Argillaceous dolomite.					30.1	A							
Do	do	do	1940	50986	do	Dolomite					28.4	A							
Do	do	do	1941	52952	do	do					34.6	A							
Do	do	do	1941	52956	do	do					24.9	B							
Do	do	do	1941	53238	do	Argillaceous dolomite.					26.3	A							
Do	do	do	1941	53299	do	Dolomite					27.5	A							
Do	do	do	1941	53300	do	do					28.4	A							
Do	do	do	1941	53302	do	do					27.5	A							
Do	do	do	1941	53441	do	do					27.4	A							
Do	do	do	1941	53580	do	do					42.2	A						S	1½–1
Do	Linville Falls	Prosp	1936	42844	do	Quartzite				2.4	24.5	A						S	1½–1
Do	do	do	1936	42845	do	Sericite schist				5.3	34.7	A						S	1½–1
Do	do	do	1936	42846	do	Sericite gneiss				6.3	55.0	A						S	1½–1
Do	do	do	1936	42847	do	Granite				3.8	35.6	A						S	1½–1
Do	do	do	1936	42848	do	Hornblende schist				2.8	42.5	A						S	1½–1
Do	do	do	1937	44219	do	Sericite schist		2.90	.4	7.5	34.7	A						S	1½–1
Do	Little Switzerland.	do	1936	42634	do	Hornblende schist				4.4	28.3	A							
Do	do	do	1936	42814	do	do				5.8	53.5	A						S	1½–1
Do	do	do	1936	42815	do	Amphibolite				2.8	21.9	A						S	1½–1
Do	do	do	1936	42816	do	Hornblende schist				5.2	61.4	A						S	1½–1
Do	do	do	1936	42818	do	Mica gneiss				2.9	31.6	A						S	1½–1
Do	do	do	1936	42819	do	Aplitic gneiss				3.4	40.9	A							
Do	do	do	1936	42820	do	Mica gneiss				4.1	34.8	A						S	1½–1
Do	do	do	1937	44204	do	Quartzite		2.60	.7	3.9	55.4	A						S	1½–1
Do	do	do	1937	44205	do	do		2.65	.3	3.0	37.4	A						S	1½–1
Do	do	do	1937	44208	do	Hornblende schist		3.17	.3	4.9	41.0	A						S	1½–1
Do	do	do	1937	44209	do	do		3.11	.3	6.3	51.1	A						S	1½–1
Do	do	do	1937	44210	do	do		3.09	.3	6.4	48.9	A						S	1½–1
Do	do	do	1937	44211	do	do		3.09	.4	3.2	39.3	A						S	1½–1
Do	do	do	1937	44212	do	do		3.12	.4	4.6	51.4	A						S	1½–1
Do	do	do	1937	44213	do	Biotite schist		2.75	.4	3.7	34.8	A						S	1½–1
Do	do	do	1937	44729	do	do				5.2									
Do	do	do	1938	46136	do	Biotite gneiss					53.8	A							
Do	do	do	1938	46179	do	do					42.9	A							
Do	do	do	1938	46337	do						41.6	A							
Do	do	do	1938	46338	do						46.3	A							
Do	do	do	1938	46360	do						38.5	A							
Do	do	do	1938	46361	do						39.7	A							
Do	do	do	1939	46484	do	Mica gneiss					35.5	A							
Do	do	do	1939	46552	do	Quartzite					39.3	A							
Do	do	do	1939	46734	do	Hornblende schist					28.1	A							
Do	do	do	1940	50979	do	do					33.3	B							
Do	do	do	1940	50981	do	Quartzite					33.0	B							
Do	Marion	do	1903	867	do	Biotite gneiss		2.70	.1	2.3				17.0	19				

Do	do	do	1903	868	do	Dolomite		2.85	.2	4.7											
Do	Old Fort	Comm	1907	2124	do	Sericite gneiss		2.75	.1	3.8				19.0	13						
Do	do	do	1907	2190	do	do		2.70	.1	2.8				18.3	13						
Do	do	Prosp	1921	20150	do	Granite porphyry		2.71	.3	4.3				18.3	9						
Do	do	Local	1938	46377	do						30.3	A								S	1½–1
Do	Woodlawn	Prosp	1935	42473	do						38.0	A								S	1½–1
Do	do	Comm	1937	44214	do	Dolomite		2.84	.2	5.8	36.0	A								S	1½–1
Do	do	do	1937	44215	do	do		2.85	.2	5.8	44.8	A									
Do	do	Local	1941	52951	do	Siliceous dolomite					61.3	A									
Do	do	do	1941	52955	do	Dolomite					40.4	B									
Macon	Franklin	Prosp	1913	6882	do	Biotite gneiss		2.75	.2	5.4				18.0	6						
Do	do	do	1913	6883	do	do		2.75	.2	11.0				9.5	5						
Do	do	do	1913	6884	do	Feldspathic quartzite.		2.75	.2	3.3				17.2	8						
Do	do	do	1933	34990	do	Micaceous quartzite.		2.72	.3	2.4				18.3	15						
Do	do	do	1934	40007	do	Mica schist				6.4				15.3	4						
Do	do	do	1934	40008	do	Micaceous quartzite.				2.7				18.7	14						
Madison	Hot Springs	do	1902	504	do	Dolomite		2.90	.1	4.2											
Do	do	do	1903	771	do	Quartzite		2.65	.1	3.3											
Do	do	do	1903	772	do	Dolomite		2.85	.1	5.5											
Do	do	Comm	1921	18044	do	do		2.91	.1	3.5				15.0	11						
Do	do	Local	1931	34063	do	do		2.86	.2	3.7				18.3	13						
Mecklenburg.	Carson	do	1919	14514	do	Granite		2.61	.2	4.5				18.0	8						
Do	do	do	1919	14515	do	Quartzite		2.67	.3	2.3											
Do	do	do	1919	14516	do	Uralitic diabase		2.93	.4	2.9				18.7	14						
Do	Charlotte	do	1903	811	do	Granite		2.70	.1	2.3				18.8							
Do	do	do	1919	14633	do	Epidote quartzite		2.80	.5	3.0				18.7	29						
Do	Matthews	Prosp	1920	17284	do	Granite gneiss		2.68	.3	2.2											
Mitchell	Altapass	Local	1938	46293	do	Mica schist					25.8	A									
Do	do	do	1938	46398	do	do					31.4	B									
Do	do	Prosp	1941	52949	do	Amphibolite					29.6	A									
Do	Little Switzerland.	do	1936	42817	do	do				3.6	34.6	A								S	1½–1
Do	do	do	1936	42833	do	Pegmatite				8.6	47.5	A									
Do	do	do	1936	42834	do	do				8.6	43.6	A									
Do	do	Local	1941	52950	do	Mica schist					29.9	A									
Do	do	do	1941	52953	do	do					25.7	A									
Do	Spruce Pine	Prosp	1937	44220	do	Sericite schist		2.84	.6	6.9	43.6	A								S	1½–1
Do	do	do	1937	44221	do	Hornblende schist		3.11	.3	5.1	39.9	A								S	1½–1
Do	do	do	1937	44222	do	do		3.00	.3	4.6	36.2	A									
Do	do	do	1937	44223	do	Pegmatitic granite.		2.61	.3	5.6	51.1	A								S	1½–1
Do	do	Local	1938	46191	do	Hornblende schist					45.0	A									
Do	do	do	1938	46267	do	do					36.8	A									
Do	Toecane	Prosp	1904	913	do	Micaceous eclogite.		3.15	.1	2.1				17.4	31						
Montgomery.	Swift Island Ferry.	do	1920	17465	do	Amphibolite		2.97	.5	3.8				18.0	17						
Moore	Carthage	do	1903	840	do	Olivine diabase		2.95	.2	2.8				17.9	16						
Do	do	do	1903	841	do	Diabase		2.85	.4	2.7				18.0	18						
Nash	Bailey	do	1913	7352	do	Biotite granite		2.65	.2	5.0				19.5	8						
Do	West Rocky Mount.	do	1908	2768	do	Granite		2.65	.2	3.4				18.7	18						
New Hanover.	Castle Hayne	Local	1918	12888	do	Limestone		2.44	3.2	9.8				12.7	5						
Do.	Wilmington	do	1901	402	do	Fossiliferous limestone.		2.40	1.8	9.9											
Northampton.	Garysburg	Comm	1919	14286	Gravel	Quartz	2			21.9		A									
Do	do	do	1923	24323	do	QC	2			8.8		A									
Do	do	do	1936	42992	do	Quartz		2.63	.3	8.2	40.9	A								[9] 25.7	2½–#4
Onslow	Belgrade	do	1944	64455	Stone	Shell limestone		2.26	3.2		43.8	A									
Do	do	do	1946	70009	do	Fossiliferous limestone.		2.39	2.5		40.5	B									
Orange	Chapel Hill	Prosp	1903	834	do	Olivine basalt		3.00	.1	2.7											
Do	Hillsboro	do	1903	835	do	Diabase [6]		2.95	.4	1.4				18.9	50						
Do	do	Comm	1941	55762	do	Syenite		2.76	.2		17.7	B	47,400								
Pender	Rocky Point	do	1922	22650	do	Siliceous limestone		2.46	2.1	12.4											
Polk	Tryon	Prosp	1908	2465	do	Granite		2.65	.4	4.1				17.5	7						
Do	do	do	1908	2753	do	Biotite granite		2.65	.2	5.8				16.5	10						
Do	Rockcliff	Comm	1911	5430	do	Granite gneiss		2.75	.2	6.6				17.8							
Randolph	Asheboro	Prosp	1902	514	do	Felsite		2.70	.0	1.9											
Do	do	do	1921	19980	do			3.06	.2	2.2				18.0	14						
Do	Franklinville	Comm	1921	19419	do	Rhyolite tuff		2.75	.2	2.6				18.3	18						
Do	do	do	1921	19909	do	do		2.73	.1	2.8				18.7	24						
Do	Ramseur	do	1941	55766	do	Granite		2.73	.2		18.6	B	40,600								
Richmond	Rockingham	Prosp	1903	826	do	Gabbro		3.00	.0	3.2				16.4	14						

[6] Altered. [9] 10 cycles, sodium sulfate test.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

NORTH CAROLINA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Rockingham.	Reidsville	Comm.	1922	22332	Stone	Granite		2.62	0.4	4.2				18.5	6				
Do	do	do	1937	44330	do	Granite gneiss				2.7								S	1½–1
Do	Ruffin	do	1910	4109	do	do		2.60	.3	4.3				18.8	12				
Do	Stacey	Prosp.	1912	5956	do	do		2.65	.1	2.4			23,220	19.3	14				
Do	do	Comm.	1921	20527	do	Granite		2.62	.4	3.4			39,170	18.7	10				
Do	do	do	1921	20528	do	do		2.64	.2	2.9			41,410	18.3	9				
Rowan	Bear Poplar	do	1914	7560	do	Hypersthene gabbro.		2.90	.2	3.9				18.5	7				
Do	Granite Quarry	do	1903	808	do	Granite		2.65	.1	1.9									
Do	do	do	1907	2189	do	do		2.65	.1	2.3									
Do	do	do	1907	2385	do	do		2.65	.2	2.4				18.7	13				
Do	do	do	1916	9892	do	do		2.60	.2	4.6			21,120	19.3	10				
Do	do	do	1916	10306	do	do		2.63	.1	2.0			34,860	18.7	11				
Do	do	do	1916	10405	do	do									10				
Do	do	do	1919	15009	do	do		2.61	.4	3.5				18.0	15				
Do	do	Prosp.	1924	24976	do	do				4.4			31,340						
Do	do	Comm.	1924	25918	do	do		2.61	.2	1.5			31,880	18.7	12				
Do	do	do	1925	26768	do	do		2.63	.2	2.8			38,370	19.3	16				
Do	do	do	1936	42990	do	do		2.62	.3	2.0	30.1	A							
Do	do	do	1941	55678	do	do					25.0	B							
Do	do	do	1941	55680	do	do		2.64	.2				49,800		12				
Do	do	do	1941	55764	do	do		2.65	.2		26.0	B	48,100						
Do	do	do	1943	61580	do	do		2.63	.2		26.0	B							
Do	Salisbury	do	1904	1149	do	do		2.65	.2	2.6									
Do	do	do	1908	2527	do	do							30,250						
Do	do	do	1908	2528	do	do							24,450						
Do	do	do	1908	2529	do	do							25,750						
Do	do	do	1908	2530	do	do							26,650						
Do	do	do	1911	5496	do	do							36,950	18.8	13				
Do	do	do	1911	5719	do	do							37,340	19.4	14				
Do	do	do	1912	6414	do	do		2.64	.5	2.6			29,080	19.0	16				
Do	do	do	1915	9618	do	do		2.60	.2	2.9				19.3	10				
Do	do	do	1917	11415	do	do							28,340	19.3	7				
Do	do	do	1919	13972	do	Gneissoid granite				3.3				19.0	10				
Do	do	do	1929	31537	do	Granite								19.0	17				
Do	do	do	1931	33907	do	do		2.62	.3	3.2				18.7	12				
Do	do	do	1931	34137	do	do				2.1			41,050	18.7	14				
Do	do	do	1931	34504	do	do				2.4			43,070		16				
Do	do	do	1932	34779	do	do				3.5			35,190	18.7	10				
Do	do	do	1934	40579	do	do		2.61	.3	3.3					8				
Do	do	do	1935	40997	do	do				3.3					9				
Do	do	do	1935	42468	do	do				3.3					8				
Do	do	do	1941	53561	do	do				2.4					8				
Do	do	do	1942	57589	do	do				2.6					12				
Do	do	do	1942	60490	do	do				2.0					11				
Do	do	do	1942	60643	do	do				1.6					13				
Do	Woodleaf	Prosp.	1922	22477	do	do		2.63	.3	2.4			30,790	17.7	10				
Do	do	Comm.	1924	24823	do	Muscovite granite.								18.7	8				
Do	do	do	1925	27446	do	Granite		2.66	.2	2.4			28,420	18.7	12				
Do	do	do	1935	40931	do	do					33.3	A							
Do	do	do	1936	42999	do	do		2.64	.6	2.4	37.9	A							
Do	do	do	1941	52985	do	do					33.8	A							
Do	do	do	1941	53203	do	do					34.6	A							
Rutherford	Bostic	Prosp.	1912	6071	do	Biotite gneiss		2.70	.2	8.0			16,100	17.3	6				
Do	Harris	do	1917	11706	do	do		2.67	.4	7.1			12,290	16.3	6				
Do	do	do	1917	12116	do	Biotite granite		2.66	.3	5.1			13,680	17.3	4				
Stanly	New London	do	1912	5866	do	Epidosite		2.75	.1	2.7				18.7	29				
Do	do	do	1912	5867	do	Steatite		2.85	.8	6.9				4.3	6				
Do	do	Local	1912	5868	do	do		2.65	1.6	9.8									
Do	Norwood	Prosp.	1922	21273	do	Argillaceous sandstone.		2.73	.8	4.8				10.2	5			U	1½–1
Surry	Elkin	do	1903	764	do	Hornblende schist		3.00	.1	4.4									
Do	Low Gap	do	1935	42351	do	Mica gneiss					41.3	A							
Do	do	do	1935	42352	do	Granite gneiss				8.5	61.2	A							
Do	do	do	1935	42353	do	do				10.5	55.6	A							

Do	do	do	1935	42357	do	do				8.0	81.6	A							
Do	do	do	1939	46582	do						44.9	A							
Do	Mount Airy	Comm	1903	814	do	Granite		2.65	.1	4.3									
Do	do	do	1911	5497	do	do							20, 120	17.8	8				
Do	do	do	1914	7433	do	do		2.65	.2	6.0			15, 200	19.7	4				
Do	do	do	1915	8816	do	do		2.65	.2	4.2				18.2	7				
Do	do	do	1915	8901	do	do							5, 100						
Do	do	do	1915	9048	do	do		2.65	.3	4.7			16, 440	18.3	7				
Do	do	do	1917	11420	do	do							23, 990	18.7	6				
Do	do	do	1918	13527	do	do		2.61	.4	4.0					11				
Do	do	do	1918	13842	do	do				4.3				18.0	9				
Do	do	do	1919	14891	do	do		2.63	.4	4.6				18.0	6				
Do	do	do	1921	20120	do	do		2.60	.5	5.0			26, 380	18.3	7				
Do	do	do	1923	23158	do	do		2.61	.4	4.2			23, 990	18.7	8				
Do	do	do	1923	23593	do	do		2.68	.4	4.7			24, 130	18.3	7				
Do	do	do	1928	30642	do	do				4.4				18.7	7				
Do	do	do	1929	32121	do	do		2.64	.4	4.2				17.7	9				
Do	do	do	1930	33069	do	Biotite granite		2.64	.3	4.0				18.3	10				
Do	do	do	1935	40998	do	Granite				4.8					6				
Do	do	do	1938	44986	do	do					53.5	A						1.6	1½–#4
Do	do	do	1938	46036	do	do					53.5	A							
Do	do	do	1938	46298	do	do					52.3	A							
Do	do	do	1938	46335	do	do					54.6	A							
Do	do	do	1939	46599	do	Biotite granite					52.9	A							
Do	do	do	1939	46727	do	do					48.9	A							
Do	do	do	1940	49311	do	Granite				4.4									
Do	do	do	1940	49565	do	do					42.0	A							
Do	do	do	1940	49566	do	do					44.2	A							
Do	do	do	1941	55306	do	do		2.65	.5		43.6	B	27, 120		8				
Do	do	do	1943	61911	do	do		2.65	.4		52.2	A							
Do	do	do	1944	67031	do	do				2.0					11				
Swain	Big Witch Gap	Prosp	1935	42551	do	Biotite gneiss				6.6	45.9	A							
Do	Bryson City	do	1935	40897	do	Mica schist		2.69	.5	4.5					7			S	1½–1
Do	do	do	1935	40898	do	do		2.73	.5	9.4					5			S	1½–1
Do	do	do	1935	40899	do	Mica gneiss		2.66	.3	2.5					7			S	1½–1
Do	Bunches Bald	do	1946	70413	do	Micaceous quartzite.		2.57	1.0		36.7	A						2.4	1½–⅜
Do	do	do	1946	70414	do	Mica schist					31.5	A							
Do	do	do	1946	70586	do	Micaceous quartzite.		2.65	.7		26.2	A						1.7	1½–⅜
Do	do	do	1946	70587	do	do		2.64	.5									.9	1½–⅜
Do	do	do	1946	70588	do	do		2.65	.8		26.6	A						1.4	1½–¾
Do	do	do	1946	70589	do	do		2.78	1.0		21.6	A						5.7	¾–1½
Do	Cherokee	Local	1940	50395	do	Mica schist					28.9	A						S	1½–1
Do	do	do	1940	50396	do	do					23.6	A						S	1½–1
Do	do	do	1946	70757	do	Micaceous quartzite.					24.9	A						.6	1½–⅜
Do	Fontana Dam	Prosp	1946	71749	do	Aplitic granite		2.57	1.6		33.6	A						5.8	1½–#4
Do	do	do	1946	71750	do	Granite		2.65	.3		24.7	A						.4	1½–#4
Do	Hewitt	Comm	1913	6977	do	Dolomitic marble		2.90	.1	6.0				15.2	10				
Do	do	do	1915	8295	do	Dolomite		2.85	1.9	3.9				12.5	3				
Do	do	do	1936	43037	do	do		2.85	.3	4.3	30.4	A						S	1½–1
Do	Maggie	Prosp	1936	42903	do	Quartzite				2.6	28.6	A						S	1½–1
Do	do	do	1936	42904	do	Sericite gneiss				9.3	38.6	A						S	1½–1
Do	do	do	1936	42905	do	do				6.9	35.9	A						S	1½–1
Do	do	do	1936	42906	do	Granite				2.9	32.1	A						S	1½–1
Do	do	do	1936	42907	do	Sericite schist				8.4	44.1	A						S	1½–1
Do	do	do	1936	42908	do	Quartzite				3.2	26.1	A						S	1½–1
Do	do	do	1936	42909	do	Sericite schist				7.1	34.6	A						S	1½–1
Do	do	do	1936	42910	do	Granite porphyry				4.6	33.9	A						S	1½–1
Do	do	do	1950	82290	do	Granite		2.63	.8		25.4	A						2.7	1½–#4
Do	Needmore	do	1950	82403	do	Mica schist		2.64	.9		43.2	A	30, 350					6.8	1½–#4
Do	Newfound Gap	do	1933	34867	do	do		2.66	.9	5.5				18.0	7			S	1½–1
Do	do	Local	1943	62904	do						26.7	B							
Do	Ravensford	Prosp	1933	34803	do	Biotite gneiss		2.61	.4	2.8				18.3	9				
Do	do	do	1933	34833	do	Quartzite schist		2.65	.7	3.7				18.7	13				
Do	do	do	1934	40077	do	do		2.42	2.7	10.4				13.3	7			Q	1½–1
Do	do	do	1936	46149	do	Quartzite gneiss					28.3	A	39, 900		10			S	1½–1
Do	do	do	1940	52658	do	Micaceous quartzite.					22.4	A							
Do	do	do	1944	63822	do	Feldspathic quartzite.		2.64	.2		23.8	A						.2	1½–1
Do	do	do	1944	63823	do	Gneiss		2.49	2.4		63.5	A						9.2	1½–1
Do	Smokemont	do	1932	34736	do	Sericite gneiss								18.7	5			S	1½–1
Do	do	do	1932	34737	do	Micaceous quartzite.								18.0	9			S	1½–1
Do	do	do	1932	34738	do	Feldspathic quartzite.								17.0	10			S	1½–1
Do	do	do	1932	34739	do	Biotite gneiss								17.3	8			S	1½–1
Do	do	do	1932	34740	do	Schistose quartzite.								17.0	9			S	1½–1

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

NORTH CAROLINA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Swain	Soco Gap	Prosp	1935	42549	Stone	Granite gneiss				3.9	34.7	A						S	1½–1
Do	do	do	1935	42550	do	do				4.3	38.2	A						S	1½–1
Transylvania.	Beech Gap	do	1939	46853	do	Biotite schist		2.71	0.8		41.3	A							
Do	do	do	1939	46854	do	do		2.71	.9		59.1	A							
Do	Brevard	Local	1939	46466	do	Granite gneiss					38.0	A	36,900						
Do	do	do	1939	46535	do	Biotite gneiss					40.7	A	23,040						
Do	do	do	1939	46598	do	do					36.4	A							
Do	do	Prosp	1940	50254	do	Mica schist					35.8	A							
Do	do	do	1940	50255	do	do					62.1	A							
Do	do	Local	1940	51022	do	do					29.0	B							
Do	Davidson River	Prosp	1921	19024	do	Biotite gneiss		2.70	.8	7.0				14.0	4				
Do	do	do	1921	19025	do	do		2.65	.3	4.2				17.7	8				
Do	do	do	1921	19026	do	do		2.65	.4	4.2				18.3	9				
Do	do	do	1921	19027	do	do		2.67	.3	4.9				17.7	7				
Do	Lake Toxaway	do	1906	1787	do	do		2.65	.3	4.5				18.3	10				
Do	do	do	1906	1788	do	do		2.60	.6	6.3				12.7	10				
Do	do	do	1906	1789	do	Hornblende schist		3.00	.7	7.0				9.8	7				
Do	Penrose	Local	1921	20892	do	Biotite gneiss		2.64	.4	4.1				18.7	8				
Do	Waynesville	do	1948	76438	do	Mica schist					39.3	A							
Union	Monroe	do	1912	6301	do	Sandstone		2.75	.2	2.7				12.5	11				
Do	do	Prosp	1920	15442	do	Siliceous slate		2.78	.4	3.0				12.3	10				
Vance	Greystone	Comm	1919	14244	do	Gneissoid granite		2.73	.3	2.8				18.0	6				
Do	do	do	1919	15078	do	do		2.61	.4	3.6			35,140	18.0	7				
Do	do	do	1919	15079	do	do							31,050						
Do	do	do	1920	15474	do	do		2.67	.3	4.0				17.7	6				
Do	do	do	1923	23016	do	Biotite granite		2.60	.6	4.2			22,900	18.3	5				
Do	do	do	1923	23017	do	do		2.66	.3	3.2			24,490	18.3	6				
Do	do	do	1930	33966	do	Granite gneiss		2.61	.4	2.8				18.7	7				
Do	do	do	1933	34886	do	Biotite granite		2.65	.4	4.6					7				
Do	do	do	1934	40278	do	Granite					41.0	A							
Do	do	do	1935	40933	do	Gneissoid granite					40.6	A							
Do	do	do	1936	42993	do	Granite		2.62	.4	3.6	41.9	A							
Do	do	do	1946	72428	do	do		2.61	.6		41.1	A							
Do	Henderson	Prosp	1905	1274	do	Granite gneiss		2.65	.2	3.8				17.4	7				
Do	do	do	1905	1275	do	Granite		2.65	.2					17.3	7				
Do	do	do	1905	1276	do	do		2.65	.2	3.9				17.5	6				
Do	do	do	1905	1277	do	Gneissoid granite		2.65	.2	5.0				16.6	8				
Do	Middleburg	do	1913	6900	do	Granite gneiss		2.65	.1	4.5			19,730	18.3	7				
Do	do	do	1915	8927	do	do		2.65	.3	2.6				18.2	6				
Do	do	Comm	1923	23015	do	Gneissoid granite		2.64	.3	4.2			26,180	18.3	6				
Wake	Cary	Prosp	1921	19787	do	Biotite granite		2.64	.3	4.9				18.0	8				
Do	Raleigh	Comm	1919	14175	do	do		2.62	.3	3.2									
Do	do	Prosp	1919	15012	do	Olivine diabase		2.98	.2	1.7				18.0	19				
Do	do	do	1920	16004	do	Hornblende granite.		2.69	.4	4.9				18.7	9				
Do	do	Comm	1923	23105	do	Biotite granite		2.63	.4	4.7			26,590	18.7	8				
Do	do	do	1934	40437	Gravel	Quartz				18.7	52.6	A							
Do	Rockton	do	1946	70999	Stone	Granite					54.0	A							
Do	Rolesville	Prosp	1921	19654	do	Biotite granite		2.67	.3	7.0			21,790	18.0	7				
Do	do	Comm	1924	24536	do	Granite		2.64	.2	5.6			25,170	19.5	6				
Do	do	do	1931	33965	do	do		2.63	.3	3.9				18.7	7				
Do	do	do	1934	40786	do	Biotite granite		2.63	.3	7.2					6				
Do	do	do	1935	40857	do	do		2.64	.4	4.5					6				
Do	do	do	1936	42998	do	Granite		2.63	.5	3.9	58.4	A							
Do	Wake Forest	do	1922	22722	do	Biotite granite		2.62	.3	4.3			19,120	19.0	6				
Do	do	do	1923	23001	do	do		2.65	.3	5.6			20,920	18.0	8				
Do	do	do	1924	24964	do	do		2.64	.2	4.2			26,140	17.3	7				
Do	Wendell	do	1917	11402	do	do		2.62	.6	4.3				17.3	4				
Do	do	do	1919	14174	do	do								18.0	5				
Do	do	do	1933	34899	do	do		2.63	.4	3.8					6				
Do	do	do	1934	40750	do	do		2.63	.5	14.9					7				
Do	do	do	1934	40787	do	do		2.63	.4	4.7					8				
Do	do	do	1935	40858	do	do		2.63	.4	3.0					8				
Do	do	do	1935	40932	do	do					49.8	A							
Do	do	do	1936	42997	do	do		2.65	.5	2.6	53.5	A							
Warren	Manson	Prosp	1920	16256	do	Gneissoid granite		2.63	.5	4.2				17.0	6				

Do	Wise	Comm	1909	3807	do	Granite		2.65	.1	2.7			18,240	18.9	8				
Do	do	do	1909	3808	do	do		2.65	.1	2.3			18,560	18.8	12				
Do	do	Prosp	1913	6901	do	Biotite granite		2.65	.2	4.3			21,100	18.6	9				
Watauga	Blowing Rock	do	1941	54975	do	Schist		2.66	1.0		44.0	A							
Do	do	do	1941	54976	do	do		2.69	1.0		46.1	A							
Do	do	do	1941	54977	do	Augen gneiss		2.75	.4		34.0	A							
Do	do	Local	1946	72479	do	Gneiss		2.76	.5		17.0	A						.5	1½-#4
Do	Boone	do	1940	50919	do	do					31.6	A							
Do	do	Prosp	1940	51213	Gravel	Sc Q					49.3	A							
Do	do	Local	1940	51214	Stone	Hornblende schist					40.8	A							
Do	do	do	1941	53343	do	Gneiss					28.0	A							
Do	do	do	1946	72480	do	Mica schist		2.75	1.0		38.8	A							
Wilkes	Harmon	Prosp	1935	42506	do	Aplitic gneiss				3.3	41.7	A							
Do	do	do	1935	42507	do	do				4.6	32.2	A							
Do	do	do	1935	42508	do	Micaceous quartzite.				3.0	30.2	A							
Do	do	do	1935	42512	do	do				3.6	28.9	A							
Do	do	do	1935	42513	do	Mica gneiss				10.5	68.4	A							
Do	do	do	1935	42516	do	Sericite gneiss				4.0	36.0	A							
Do	Horse Gap	do	1936	43076	do	Quartzite				2.6	24.0	A							
Do	do	do	1936	43090	do	do				3.1	26.5	A							
Do	do	do	1936	43091	do	Hornblende schist				4.7	35.4	A							
Do	do	do	1936	43147	do	Sericite schist				8.4	40.5	A							
Do	do	do	1936	43148	do	do				3.8	28.6	A							
Do	do	Local	1937	44545	do	do				6.3	33.6	A							
Do	do	do	1938	44899	do	do					40.0	A							
Do	do	do	1948	74495	do	Mica schist		2.66	1.7		48.2	A						3.9	1½-#4
Do	Laurel Springs	do	1940	49647	do	do					26.0	B							
Do	do	do	1940	49648	do	do					24.6	A							
Do	do	do	1940	51182	do	do					26.0	B							
Do	McGrady	Prosp	1936	43122	do	Micaceous quartzite.		2.72	.2	2.4	26.0	A							
Do	North Wilkesboro.	do	1912	6284	do	Mica gneiss		2.80	.1	3.9				17.5	8				
Do	do	Comm	1948	75451	do	Gneiss		2.60	.7		35.5	B						1.2	1½-#4
Do	Summit	Prosp	1935	42552	do	Aplitic gneiss				7.2	60.1	A							
Do	do	do	1935	42558	do	do				8.9	75.0	A							
Do	do	do	1935	42559	do	Granite gneiss				7.3	61.1	A							
Do	do	do	1935	42560	do	Aplitic gneiss				11.7	78.9	A							
Do	do	do	1935	42561	do	Aplitic granite				7.0	72.1	A							
Do	Walsh	do	1935	42553	do	Mica gneiss				8.2	59.1	A							
Do	Wilbar	do	1935	42518	do	do				8.7	64.0	A							
Do	do	do	1935	42519	do	do				9.4	78.5	A							
Do	do	do	1935	42557	do	do				4.3	55.1	A							
Do	do	do	1936	43075	do	Granite				3.8	48.3	A							
Wilson	Elm City	do	1901	431	do	do		2.64	.2	2.8									
Do	Neverson Quarry.	do	1913	7353	do	do.[6]		2.60	1.8	4.9				18.8	4				
Do	do	Comm	1915	9038	do	do		2.65	.2	4.6			16,070	19.0	10				
Do	do	do	1917	11566	do	do		2.64	.2	5.4			21,920	18.7	9				
Do	do	do	1923	24472	do	do.[6]		2.65	.2	4.1			28,430	19.0	8				
Do	do	do	1935	42623	do	do				3.8					10				
Do	do	do	1935	42624	do	do					37.5	A							
Do	Wilson	Prosp	1901	432	do	do		2.64	.2	6.4									
Do	do	do	1901	433	do	do		2.60	.1	5.6									
Do	do	do	1907	2178	do	do		2.65	.1	5.6				17.9	4				
Do	do	do	1907	2179	do	do		2.60	.6	9.8				17.5	4				
Do	do	Local	1907	2181	do	Biotite granite		2.65	.3	5.2				17.9	6				
Do	do	Prosp	1907	2184	do	Granite		2.65	.3	4.7				18.5	7				
Do	do	do	1909	3944	do	do.[6]		2.65	.3	10.0				18.2	6				
Yancey	Bald Mountain	Comm	1921	19405	do	Rhyolite[6]		2.70	.0	2.9				19.2	28				
Do	do	do	1921	19406	do	do.[6]		2.66	.1	3.0			60,720	18.3	15				
Do	Busick	Prosp	1935	42584	do	Aplitic gneiss				4.0	33.1	A							
Do	do	do	1935	42585	do	Mica gneiss				7.6	54.5	A							
Do	do	do	1935	42586	do	Aplitic gneiss				2.8	29.2	A							
Do	do	do	1935	42587	do	do				6.0	43.4	A							
Do	do	do	1935	42588	do	Sericite gneiss				9.1	37.7	A							
Do	do	do	1935	42589	do	Granite gneiss				5.5	54.6	A							
Do	do	do	1935	42590	do	Sericite gneiss				5.9	48.9	A							
Do	do	do	1935	42591	do	do				10.8	65.4	A							
Do	do	do	1935	42602	do	Mica gneiss				4.7	47.2	A							
Do	do	do	1935	42603	do	Aplitic gneiss				3.2	41.3	A							
Do	do	do	1935	42604	do	Granite gneiss				2.8	36.9	A							
Do	do	do	1935	42605	do	Mica gneiss				5.3	50.2	A							
Do	do	do	1935	42606	do	do				4.2	40.3	A							
Do	do	do	1935	42607	do	Granite gneiss				5.2	76.2	A							
Do	do	do	1936	42635	do	do				4.5	44.6	A							
Do	do	do	1936	42636	do	do				3.7	34.6	A							
Do	do	do	1936	42638	do	Aplitic granite				3.0	44.5	A							
Do	do	do	1936	42784	do	Quartzite				5.9	43.8	A						S	1½-1

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

NORTH CAROLINA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Yancey	Busick	Prosp	1936	42785	Stone	Granite				2.7	46.7	A							
Do	do	do	1936	42786	do	do				4.4	38.3	A							
Do	do	do	1936	42787	do	do				5.1	53.0	A							
Do	do	do	1936	43062	do	Mica gneiss				5.3	50.4	A							
Do	do	do	1936	43063	do	do				3.5	33.2	A							
Do	do	do	1936	43141	do	do				4.8	40.6	A							
Do	do	do	1938	44840	do	Sandstone				3.1	38.7	A						S	1½–1
Do	do	do	1938	44841	do	do				2.8	28.8	A						S	1½–1
Do	do	do	1938	44842	do	do				23.2	92.3	A						U	1½–1
Do	Little Switzerland.	do	1941	52954	do	Actinolite schist					42.8	A							
NORTH DAKOTA																			
Billings	Fairfield	Prosp	1946	72452	Stone	Chert		2.49	2.1		14.3	A	41,600		18			5.0	1½–#4
Golden Valley.	Beach	Local	1922	22428	do	Vitrified clay				7.2									
Do	do	do	1922	22429	do	do				10.4									
McHenry	Velva	Prosp	1946	72455	do	Calcareous sandstone.		2.49	3.2		48.4	A	15,000		8			57.7	1½–#4
Ransom	Lisbon	Local	1920	16231	Gravel	GQL	2			10.9		A							
Do	do	do	1920	16269	do	QDoG	2			7.3		A							
Stark	Belfield	Prosp	1946	72451	Stone	Feldspathic quartzite.		2.53	1.0		17.9	A	63,600		31			.5	1½–#4
Ward	Carpio	Local	1922	21718	Gravel	Dolomite	1½			5.7		B							
Do	Minot	do	1921	20493	do	DoCQzG	1½			4.7		B							
OHIO																			
Adams	Liberty Township.	Comm	1920	16722	Stone	Limestone		2.77	0.4	5.5				11.0	4				
Allen	American Township.	Local	1922	21712	do	Dolomite		2.68	2.0	4.4				14.3	8				
Do	Bath Township	do	1922	21331	do	do		2.66	1.2	5.8				12.3	6				
Do	Bluffton	Comm	1914	7789	do	do		2.75	.8	5.0				15.3	7				
Do	do	do	1922	22255	do	do				3.2									
Do	do	do	1922	22256	do	do				3.1									
Do	do	do	1922	22258	do	do				3.5									
Do	do	do	1924	24674	do	do		2.74	.7	4.2				16.7	12				
Do	do	do	1929	31520	do	do		2.77	.5	5.3				15.7	7			S	1½–1
Do	do	do	1929	31521	do	do		2.69	1.2	5.2				13.3	8			S	1½–1
Do	do	do	1932	34723	do	do				3.7	24.4	A							
Do	Delphos	do	1919	14016	do	Argillaceous dolomite.		2.70	.1	4.8				16.2	6				
Do	do	do	1919	14018	do	Dolomite		2.78	.1	5.1				15.3	9				
Do	do	do	1919	14019	do	do		2.75	.5	4.4				14.7	9				
Do	do	do	1919	14772	do	Argillaceous dolomite.		2.72	.4	4.8				15.3	13				
Do	Lima	do	1912	6093	do	Dolomite		2.65	1.4	4.0				15.5	11				
Do	do	do	1915	9438	do	Argillaceous dolomite.		2.70	1.2	2.9				15.6	7				
Do	do	do	1916	9864	do	Dolomite		2.65	1.6	3.2				14.7	7				
Do	do	do	1916	10025	do	Argillaceous limestone.		2.70	1.6	3.5				14.7	12				
Do	do	do	1916	10026	do	do		2.70	1.2	3.7				16.0	11				
Do	do	do	1916	10027	do	do		2.70	1.3	3.6				15.0	11				
Do	do	do	1916	10305	do	Limestone		2.71	1.1	4.2				16.0	6				
Do	do	do	1919	15216	do	Argillaceous dolomite.		2.64	1.1	3.7				14.7	9				
Do	do	do	1922	21711	do	do				4.5									
Do	do	do	1932	34734	do	do				3.9	20.8	A							

Do	Sugar Creek Township.	do	1923	23842	do	Dolomite		2.68	1.1	4.4				14.7	7			
Ashtabula	Ashtabula	Prosp	1909	3186	do	Sandstone		2.45	1.6	10.0				9.2	5			
Athens	Lodi Township	Local	1924	24594	do	do.[1]		2.06	6.9	46.8				.0	1			
Do	do	Prosp	1924	24595	do	do.[1]		2.32	4.2	24.1				16.7	3			
Do	do	do	1924	24596	do	do.[1]		2.11	6.7	41.6				14.0	2			
Do	Troy Township	do	1924	24597	do	do.[1]		2.16	6.1	32.0				.0	2			
Auglaize	Douchouquet Township.	Local	1922	22572	Gravel	Dolomite	1½			6.0		A						
Do	Saint Johns	do	1920	16357	do	do	1½			6.8		A						
Belmont	Bellaire	Comm	1918	13180	Slag	Blast furnace		2.24	.3	13.0								
Do	do	do	1922	22567	do	do				12.9								
Do	do	do	1923	23727	do	do				17.1						70	2½–#4	
Do	Martins Ferry	do	1944	66186	do	do					37.4	A						
Do	Somerset Township.	Local	1921	20055	Stone	Sandstone		2.27	1.3	6.2				14.7	7			
Do	Union Township.	Prosp	1921	19379	do	do		2.16	5.5	26.6				.0	2			
Do	do	Local	1921	20449	do	do		2.18	5.3	24.2				.0	2			
Do	Warren Township.	do	1921	20054	do	Feldspathic sandstone.		2.26	4.4	24.6				4.0	4			
Brown	Lewis Township.	Prosp	1921	19625	do	Limestone		2.71	.1	6.9								
Do	do	Local	1921	20101	do	do				6.2								
Do	Perry Township	do	1921	20099	do	Argillaceous limestone.		2.70	.4	7.2				10.7	7			
Do	do	do	1921	20921	do	do		2.66	1.2	6.4				11.7	6			
Do	Sterling Township.	do	1921	20922	do	do		2.40	1.5	4.3				11.3	5			
Butler	Hamilton	Comm	1937	44584	Slag	Blast furnace					36.5	A				76	2–#4	
Do	Middletown	do	1916	9953	do	Open hearth		3.35	1.1	4.1								
Do	do	do	1916	9954	do	do		3.05	1.4	20.4								
Do	do	do	1917	12414	do	do		3.56	1.0	5.3								
Champaign	Mechanicsburg	do	1920	17239	Gravel	LDo(CSh)	1½			16.9		A						
Do	do	do	1921	19582	do	Dolomite	1½			11.8		A						
Do	do	do	1921	19674	do	do	1½			7.0		A						
Do	do	do	1922	21608	do	do	1½			8.5		A						
Do	do	do	1922	21675	do	do	1½			11.4		A						
Do	do	do	1922	21848	do	do	1½			15.1		A						
Do	Urbana	Prosp	1904	977	Stone	Calcareous sandstone.		2.55	2.3	11.4			15,080	7.3	7			
Do	do	do	1904	978	do	do		2.55	2.4	32.8			3,850	.0	5			
Do	do	Local	1920	16772	Gravel	LSQzSh	1½			27.7		A						
Do	do	Comm	1935	42075	do	Limestone	1½	2.62	1.9								10.1	1½–#4
Do	do	do	1935	42076	do	do	1½	2.60	2.0								7.0	1½–#4
Do	do	do	1937	43155	do	do					30.8	A						
Clark	Bethel Township.	Local	1921	20103	do	Dolomite	2			6.6		A						
Do	Cold Springs	do	1910	4307	Stone	do		2.60	2.2	9.1				11.4	6			
Do	Harmony Township.	do	1929	32008	Gravel	LDo	1½	2.67	1.5	9.0		A						
Do	Springfield	do	1910	4692	Stone	Dolomite		2.70	.9	6.8				11.3	4			
Do	do	do	1910	4695	do	do		2.70	.4	6.7			18,960	14.0	9			
Do	do	Prosp	1920	16660	do	Micaceous sandstone.		2.27	5.2	19.6					3			
Clermont	Batavia Township.	Local	1920	16728	do	Limestone		2.70	.5	10.0				11.7	6			
Do	Goshen	Comm	1921	19139	Gravel	LDoS	1½			5.1		A						
Do	Loveland	do	1920	16342	do	LDoQz	1½			7.0		A						
Do	Miamiville	do	1920	17062	Stone	Limestone		2.73	.1	5.5			18,580	13.0	5			
Do	do	do	1921	19626	do	do				4.7								
Do	Stonewick Township.	Local	1921	19140	do	do		2.74	.3	5.3				11.3	6			
Clinton	Farmers	do	1916	10516	do	do		2.74	1.0	5.2				13.2	4			
Do	do	do	1916	10517	do	Siliceous limestone.		2.68	.3	6.6				13.7	5			
Do	Melvin	do	1911	5247	do	Dolomite		2.60	1.3	6.8				13.3	7			
Do	do	Comm	1921	19772	do	do				7.2								
Do	do	do	1921	20098	do	do				6.1								
Do	do	do	1921	20523	do	do				7.3								
Do	do	do	1923	22863	do	do				5.6								
Do	do	do	1923	23700	do	do				6.2								
Do	do	do	1923	24228	do	do				5.7								
Do	do	do	1946	70529	do	do					28.1	A					8.6	1½–#4
Do	do	do	1946	71307	do	do		2.62	2.2								4.4	⅜–#4
Do	do	do	1946	71308	do	do		2.56	2.2								4.6	1–¾
Do	do	do	1946	72230	do	do											4.6	1½–#4
Do	Richland Township.	Local	1919	14524	do	Argillaceous dolomite.		2.52	2.2	9.4				13.3	5			

[1] Weathered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

OHIO—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Columbiana.	Center Township.	Local	1922	22207	Stone	Sandstone		2.17	5.2	23.5				1.7	4				
Do	do	do	1922	22668	do	do		2.19	5.3	19.8				10.7	3				
Do	East Liverpool	Comm	1922	22670	Gravel	GSCQ	1½			11.2		A							
Do	do	do	1937	43172	do	SQQz					48.2	A							
Do	Leetonia	do	1913	6718	Slag	Blast furnace				11.8				13.8	3				
Do	do	do	1915	8597	do	do				13.1									
Do	do	do	1919	15096	do	do		1.78	7.6	16.2									
Do	do	do	1920	16516	do	do				20.5						51	1½–¾		
Do	do	do	1921	21242	do	do										74	1½–⅜		
Do	do	do	1921	21243	do	do										72	¾–#4		
Do	do	do	1925	27553	do	do							920	11.3	5				
Do	do	do	1925	27554	do	do							9,350	16.0	8				
Coshocton	Coshocton	Prosp	1905	1309	Stone	Limestone		2.70	.6	3.5				16.2	19				
Do	Oxford Township (Tuscarawas River).	Local	1922	21304	Gravel	LSQ	2			12.1		A							
Crawford	Bucyrus	Comm	1925	27396	Stone	Limestone		2.56	1.7									U	1½–1
Do	do	do	1925	27399B	do	do		2.49	2.6	6.8			14,740	7.0	5			Q	1½–1
Do	do	do	1925	27399M	do	do		2.65	.9	7.0			16,160	13.0	5			Q	1½–1
Do	do	do	1925	27399T	do	do		2.75	.6	3.6			31,040	15.3	15			S	1½–1
Do	do	do	1925	27400	do	do		2.77	.3	2.8			34,220	15.3	13				
Do	Spore	Local	1922	22554	do	do				6.6									
Cuyahoga	Chagrin Falls	do	1903	765	do	Sandstone		2.50	2.6	4.4									
Do	Cleveland	Comm	1921	18718	Slag	Blast furnace		2.25	2.9	15.6									
Do	do	do	1921	18730	do	do		2.18	3.8	21.0									
Do	do	do	1937	44341	do	do					38.2	A				75	1½–⅜		
Do	Warrensville	Local	1906	1570	Stone	Limestone		2.60	1.1	7.5				12.4	6				
Darke	Fort Jefferson	Comm	1919	15180	Gravel	Dolomite	1½			5.6		A							
Do	do	do	1920	16224	do	do	1½			9.8		A							
Do	do	do	1920	16249	do	LCG	1½			7.1		A							
Do	do	do	1920	16367	do	Dolomite	1½			7.3		A							
Do	do	do	1920	17207	do	do	1½			8.3		A							
Do	do	do	1920	17309	do	DoL(C)	1½			19.0		A							
Do	do	do	1921	19729	do	Dolomite	1½			6.2		A							
Delaware	Delaware	do	1919	15215	Stone	Argillaceous limestone.		2.62	.6	5.3				15.8	8				
Do	Troy Township	Local	1921	20394	do	do		2.69	.9	3.5				15.0	9				
Do	do	do	1921	20531	Gravel	Dolomite	3			18.1		A							
Do	White Sulphur	do	1910	4399	Stone	Limestone		2.65	.8	6.1				13.2	10				
Do	do	Comm	1925	27552	do	Dolomite		2.33	5.3	8.6				10.7	4				
Do	do	do	1928	30761	do	Argillaceous dolomite.		2.42	4.1	6.4								S	1½–1
Do	do	do	1928	30765	do	do		2.32	5.3	9.6				8.0	5			S	1½–1
Erie	Castalia	do	1912	5753	do	Limestone		2.65	1.1	5.6			18,530	13.9	7				
Do	do	do	1912	6055	do	do		2.75	.3	5.5			20,810	13.7	7				
Do	Sandusky	do	1907	1944	do	do		2.65	1.1	4.3				13.7	7				
Do	do	do	1907	1989	do	do		2.65	.8	4.9				9.7	6				
Do	do	do	1907	1990	do	do		2.70	.8	3.5				14.0	7				
Do	do	Prosp	1908	2979	do	do		2.70	.8	3.8				13.1	7				
Do	do	Comm	1910	4378	do	do		2.64	.9	4.4			19,400	10.4	8				
Do	do	do	1911	5554	do	do		2.70	.6	3.9			21,850	17.3	10				
Do	do	do	1917	11331	do	Argillaceous limestone.		2.68	.8	3.0			14,610	12.9	9				
Do	do	do	1918	13073	do	Limestone		2.73	.6	4.8				15.9	10				
Do	do	do	1918	13074	do	do		2.67	.9	4.7				12.4	7				
Do	do	do	1921	19783	do	Argillaceous dolomite.		2.68	.4	3.9				13.3	6				
Do	do	do	1921	19790	do	Dolomite				4.9									
Do	do	do	1921	20052	do	Argillaceous limestone.				3.7									
Do	do	do	1923	23055	do	do		2.67	1.0	3.1			17,420	14.3	6				
Do	Wilmer	Local	1908	2895	do	Calcareous sandstone.		2.45	3.1	6.8				7.8	5				
Fayette	Greenfield	Prosp	1931	34023	do	Argillaceous dolomite.		2.69	1.6					15.5	7			Q	1½–1

Do	do	do	1931	34024	do	do		2.69	2.0					15.4	6			U	1½–1
Do	do	do	1931	34025	do	do		2.69	1.6					14.2	7			S	1½–1
Franklin	Columbus	Comm	1902	663	do	Limestone		2.55	2.0	6.7									
Do	do	do	1902	664	do	do		2.60	1.0	7.0									
Do	do	do	1902	665	do	Dolomite		2.60	1.7	6.0									
Do	do	do	1902	666	do	Limestone		2.50	1.7	3.8									
Do	do	do	1908	2896	do	do		2.70	.4	3.8				15.9	6				
Do	do	do	1908	3077	do	do		2.65	1.0	3.1				17.0	6				
Do	do	do	1909	3766	do	do		2.70	.6	4.3				15.5	9				
Do	do	do	1912	5861	do	do		2.65	.6	3.8				14.5	6				
Do	do	do	1920	16347	Slag	Blast furnace		2.23	3.9	12.1									
Do	do	do	1920	17378	Gravel	Dolomite	1½			15.6		A							
Do	do	do	1921	19415	do	do	2			13.6		A							
Do	do	do	1923	24251	do	do	2			8.8		A							
Do	do	do	1927	29676	do	Limestone	2½	2.61	1.0	15.1		A						S	1½–1
Do	do	do	1935	42078	do	LDo	1	2.62	1.7									8.7	1–#4
Do	do	do	1935	42079	do	LDoCG	1½	2.60	1.9									6.9	1½–⅜
Do	do	do	1937	43161	do	LDoSSh					27.7	A							
Do	do	do	1937	43162	do	LDoQz					29.4	A							
Do	Marble Cliff	do	1908	2449	Stone	Calcareous sandstone.		2.60	.8	3.1				12.8	12				
Do	do	do	1909	3356	do	Limestone		2.65	.9	4.0				16.0	10				
Do	do	do	1911	5505	do	do		2.60	.8	3.6			16,750		11				
Do	do	do	1911	5506	do	do		2.60	1.3	7.2			12,350		7				
Do	do	do	1916	10536	do	do								15.2	6				
Do	do	do	1920	15888	do	Argillaceous limestone.		2.67	.9	4.7			25,900	15.3	7				
Do	do	do	1920	16340	do	Limestone		2.68	.8	4.3					7				
Do	do	do	1920	16418	do	Argillaceous limestone.		2.60	.7	5.4									
Do	do	do	1920	17079	do	Limestone		2.65	.9	4.0				14.7	6				
Do	do	do	1920	17390	do	do				3.7									
Do	do	do	1920	17411	do	do		2.66	.9	4.5									
Do	do	do	1921	19368	do	do				3.4									
Do	do	do	1921	20579	do	do				4.0									
Do	do	do	1922	21363	do	ho				5.2									
Do	do	do	1922	21364	do	do				4.2									
Do	do	do	1922	22394	do	do				4.1									
Do	do	do	1922	22623	do	do				3.3									
Do	do	do	1923	23699	do	do				7.4									
Do	do	do	1923	24144	do	do				4.8									
Do	do	do	1928	30287	do	do		2.67	.7	5.0				14.7	8			S	1½–1
Do	do	do	1932	34717	do	do				4.4	22.0	A							
Do	do	do	1934	40125	do	Argillaceous limestone.					20.2	A							
Do	do	do	1936	42662	do	Limestone												19.9	1½–#4
Do	do	do	1936	42663	do	do												23.6	1½–#4
Do	do	do	1946	70528	do	do					24.4	A						8.1	1½–#4
Do	do	do	1946	71303	do	do		2.61	1.7									6.3	⅜–#4
Do	do	do	1946	72231	do	do												12.9	1½–#4
Gallia	Raccoon Township.	Local	1923	24266	do	Sandstone		2.21	6.9	27.6				.0	2				
Do	Rodney	do	1920	17437	do	Dolomitic limestone.				6.2									
Do	Springfield Township.	do	1920	16660	do	Micaceous sandstone.		2.27	5.2	19.6					3				
Do	do	do	1921	19327	do	Sandstone		2.28	5.1	23.7				.0	3				
Do	do	do	1923	23748	do	Limestone		2.71	.0	6.0				18.3	6				
Do	do	do	1923	23749	do	Sandstone		2.16	6.6	40.8				.0	2				
Geauga	Auburn	do	1922	22640	Gravel	SLDo	1½			17.4		A							
Greene	Jamestown	do	1910	4308	Stone	Dolomite		2.55	.9	11.0				12.7	5				
Do	Osborn	Prosp	1910	4694	do	Dolomite limestone.		2.70	.2	6.2			8,690	9.3	4				
Do	Xenia	Local	1909	3179	do	Limestone		2.65	.5	7.8				8.3	5				
Do	do	do	1909	3180	do	Sandstone		2.80	.8	4.7				15.3	8				
Do	do	Prosp	1909	3182	do	Dolomite		2.70	.8					14.8	8				
Do	do	do	1909	3370	do	Limestone		2.65	.4	7.2				13.5	6				
Do	do	Local	1911	5475	do	Dolomite		2.55	2.3	7.1				12.3	5				
Guernsey	Center Township.	Prosp	1926	28408	do	Sandstone		2.10	6.4	33.6				.0	2				
Do	Senecaville	Local	1909	3522	do	Limestone		2.70	.2	5.6				17.2	10				
Hamilton	Cleves	Comm	1923	23527	Gravel	LDoG	2			13.3		A							
Do	Greenhills	Prosp	1936	42760	Stone	Argillaceous limestone.				6.3	34.5	A							
Do	Harrison	do	1920	16436	Gravel	Do(C)	1½			6.7		A							
Do	do	do	1920	17326	do	Do(Qz)	2			5.6		A							
Do	Newtown	Comm	1946	70526	do	DoL(GnQz)		2.63	1.6		24.6	A						7.3	2–#4
Do	do	do	1946	71304	do	DoL(GnQz)		2.64	1.4									9.2	1–¾
Do	do	do	1946	71305	do	DoL(GnQz)		2.66	1.5									3.0	⅜–#4
Do	do	do	1946	72228	do	DoL(GnQz)												4.2	1½–#4

Table 10.—Results of tests of coarse aggregate to Jan 1, 1951—Continued

OHIO—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Hamilton	Remington	Comm	1922	22482	Gravel	DoGS	1½			6.2		A							
Do	Valley Junction	do	1922	21782	do	Dolomite	1½			10.2		A							
Do	White Water Park.	Prosp	1920	16438	do	do	1½			9.9		A							
Do	do	do	1921	19624	do	LDoQ	2			6.3		A							
Hancock	Findlay	Comm	1912	5849	Stone	Dolomite		2.70	1.4	3.3				16.3	19				
Do	do	do	1924	24675	do	do		2.67	1.0	3.6			36,680	16.7	13				
Hardin	Blanchard	do	1922	21698	do	do		2.67	1.4	4.1				13.7	7				
Do	Dunkirk	do	1911	5553	do	do		2.65	1.7	3.5			26,200	15.1	16				
Do	do	do	1915	9227	do	Argillaceous dolomite.		2.70	1.5	4.0				15.8	11				
Do	do	Prosp	1917	11329	do	do		2.68	1.3	3.4			26,300	15.0	10				
Do	do	Comm	1922	22261	do	Dolomite				3.8									
Do	do	do	1923	23679	do	do				4.0									
Do	do	do	1923	23840	do	do		2.67	1.5	4.4				16.7	6				
Do	do	do	1924	24620	do	do		2.60	1.3	3.6				16.7	7			S	1½-1
Do	do	do	1924	24621	do	do		2.73	.6	3.8				17.0	12			S	1½-1
Do	do	do	1924	24622	do	do		2.70	1.4	3.9				16.7	12			U	1½-1
Do	do	do	1924	24623	do	do		2.63	1.3					18.7	12			S	1½-1
Do	do	do	1927	29431	do	do		2.49	2.8	4.1				15.3	14				
Do	Forest	do	1924	24688	do	do		2.60	1.2	7.3				13.7	5			S	1½-1
Do	do	do	1924	24689	do	do		2.60	1.4	8.4				11.0	5			S	1½-1
Do	do	do	1924	24690	do	do		2.56	1.6	7.6				11.3	4			S	1½-1
Do	do	do	1924	24691	do	do		2.58	1.3	7.6				11.3	4			S	1½-1
Do	do	do	1925	26935	do	do				10.9									
Do	do	do	1925	27372	do	do		2.50	1.4	9.0			13,620	14.3	6			S	1½-1
Do	do	do	1925	27391	do	do		2.51	1.9	8.1								S	1½-1
Do	do	do	1929	31291	do	do		2.62	1.5	4.4				15.3	9			S	1½-1
Do	Kenton	do	1917	11202	do	do		2.68	1.2	2.7				15.3	15				
Do	do	do	1917	11225	do	do		2.63	1.4	2.5				17.0	7				
Do	do	do	1919	15286	do	do				3.2									
Do	do	do	1920	16417	do	do		2.70	1.3	2.9									
Do	do	do	1920	17407	do	do				3.2									
Do	do	do	1921	19369	do	do				4.5									
Do	do	do	1922	21695	do	do		2.66	1.5	4.2				11.5	7				
Do	do	do	1922	21696	do	do		2.70	1.2	3.7				14.6	8				
Do	do	do	1922	21853	do	do				3.2									
Do	do	do	1922	22254	do	do				3.2									
Do	do	do	1922	22260	do	do				3.9									
Do	do	do	1922	22556	do	do				3.8									
Do	do	do	1922	22625	do	do				3.4									
Do	do	do	1924	24642	do	do		2.69	1.1	3.6				17.3	13			S	1½-1
Do	Lynn Township	Local	1922	21699	do	do		2.65	1.8	4.6				12.7	6				
Do	Patterson	do	1910	4693	do	do		2.65	.5				11,360	13.3	4				
Do	Pleasant Township.	Comm	1923	23841	do	do		2.61	1.8	4.0				14.7	10				
Highland	Fairfield Township.	Prosp	1921	20519	do	do		2.66	1.4	13.5				14.0					
Do	do	do	1921	20520	do	do		2.47	2.9	14.2				9.3	5				
Do	do	do	1921	20521	do	do		2.57	1.8	7.1				12.7	6				
Do	do	Local	1922	22288	do	do		2.64	1.2	6.2				12.3	7				
Do	Greenfield	Comm	1921	20522	do	Limestone				5.6									
Do	Hamer Township.	Local	1919	14525	do	Argillaceous dolomite.		2.71	.8	7.4				12.7	5				
Do	Hillsboro	do	1910	4707	do	Cherty limestone		2.65	1.7	5.5			15,590	11.8	6				
Do	Paint	Prosp	1921	19141	do	Dolomite		2.58	1.8	12.5				12.7	6				
Do	do	do	1921	19142	do	do		2.56	2.4	11.6				12.7	10				
Do	do	do	1921	19730	do	do		2.65	1.1	6.5				13.3	7				
Do	do	do	1921	20094	do	do				9.4									
Do	Sinking Spring	Local	1923	24352	do	Dolomitic limestone.		2.78	.3	3.9				15.3	13				
Hocking	Falls Gore Township.	Comm	1921	19974	Slag	Blast furnace				8.5									
Do	do	Local	1921	19976	Stone	Sandstone				9.8									
Do	Logan	Prosp	1907	1986	do	Argillaceous sandstone.		2.50	3.3	6.0				.0	6				
Do	do	do	1907	1987	do	Limestone		2.70	.6	4.5				11.3	6				

Holmes	Kill Buck	Comm	1923	24139	Gravel	SL	2			20.2		A							
Do	do	do	1923	24140	do	SL	2			22.7		A							
Do	do	do	1931	34545	do	S(QCL)		2.47	2.7	13.8		A							
Do	Salt Creek Township.	Local	1921	19929	Stone	Argillaceous limestone.		2.63	.6	6.9				13.7	6				
Huron	Bellevue	Comm	1915	9233	do	do		2.55	2.4	6.7				8.3	4				
Do	do	do	1917	11198	do	Dolomite		2.50	3.1	4.9				6.0	5				
Do	do	do	1918	13095	do	Argillaceous limestone.		2.54	3.7	6.3				10.3	5				
Do	do	do	1922	21629	do	do		2.43	3.5	6.6				14.7	8				
Do	do	Local	1923	24457	do	Limestone		2.51	2.4	6.6			20,340	14.7	6				
Do	do	do	1923	24459	do	Dolomite		2.53	2.4	5.0			23,360	11.7	7				
Do	do	do	1924	24537	do	Limestone		2.70	.7	3.0			26,480	14.9	9				
Do	do	do	1924	24863	do	Dolomitic limestone.		2.48	2.9	6.2				12.7	7				
Do	Clarksfield	Prosp	1915	8347	do	Calcareous sandstone.		2.45	2.6				9,490	10.7	5				
Do	do	Local	1917	11203	do	Feldspathic sandstone.		2.18	5.7	7.5			7,910		5				
Jackson	Jackson	Comm	1915	9162	Slag	Blast furnace		2.85	.4	4.3				16.8	7				
Do	do	do	1920	16656	do	do		2.43		13.6									
Do	do	do	1921	18717	do	do		2.82	.2	4.5									
Do	do	do	1921	19697	do	do										76	2½–½		
Do	do	do	1921	20566	do	do		2.50	1.8	10.3									
Do	do	do	1922	22473	do	do				4.3						82	3–¾		
Do	do	do	1923	23805	do	do										90	1¼–#4		
Do	do	do	1937	44331	do	do					28.2	A				100	1½–#4		
Jefferson	Island Creek Township.	Prosp	1921	20348	Stone	Sandstone		2.33	3.0	18.2				15.2	4				
Do	Mingo Junction	Comm	1922	21740	Slag	Blast furnace				12.6									
Do	do	do	1922	22404	do	do				10.7						99	3–#4		
Do	Steubenville	do	1922	21218	do	do				17.1						63	2½–#4		
Do	do	do	1922	21305	do	do				17.1						63	2½–¾		
Do	do	do	1922	22403	do	do				17.7						76	3–#4		
Do	do	do	1930	33265	do	do		2.13		14.8						72	2–#4		
Do	Wells Township	do	1922	22402	Gravel	Sandstone	2			17.2		A							
Knox	Mount Vernon (Dry Creek).	Local	1919	14789	do	do	2			28.3		A							
Lawrence	Ironton	Comm	1915	9408	Slag	Blast furnace		2.75	.9	6.5				16.6	7				
Do	do	do	1916	9854	do	do		2.90	.4	5.8				16.0	6				
Do	do	do	1920	15996	do	do		2.38	2.8	7.2				18.0	9				
Do	do	do	1920	15997	do	do		2.46	2.3	7.1									
Do	do	do	1921	18728	do	do		2.17	2.9	8.6									
Licking	Newark	Prosp	1908	2516	Stone	Chert		2.50	1.3	3.4									
Do	do	do	1908	2635	do	Limestone		2.65	.7	4.3				18.1	7				
Logan	Bellefontaine	Comm	1906	1655	do	Dolomite		2.45	4.5	8.7									
Do	do	do	1906	1687	do	Limestone		2.50	2.6	9.6				13.7	8				
Do	Big Springs	Local	1910	4656	do	Argillaceous limestone.		2.50	3.2	5.6			16,380	9.5	6				
Do	East Liberty	do	1902	582	do	Dolomitic limestone.		2.80	.5	4.1									
Do	do	do	1924	25908	do	Dolomite				7.6								S	1½–1
Do	Perry Township.	Prosp	1923	24381	do	do		2.72	.5	4.6				15.3	10				
Do	Richland	Local	1919	15218	Gravel	do	1½			22.2		A							
Do	do	do	1920	17242	do	do	1½			22.2		A							
Lorain	Lorain	do	1901	345	Slag	Blast furnace		2.30	2.9	8.3									
Do	do	do	1908	2787	do	do		2.70	.8	8.6									
Do	do	Comm	1914	7474	do	do		3.50	.4	2.3				18.2	9				
Do	do	do	1915	8988	do	do		2.65	1.5	10.6				13.2	4				
Do	do	do	1919	14833	do	do		1.98	4.8	16.8									
Do	do	do	1920	16517	do	do										72	2–¾		
Do	do	do	1920	16518	do	do										70	1¼–¾		
Do	do	do	1920	16721	do	do										65	1¼–#4		
Do	do	do	1921	18731	do	do		1.97	4.6	24.3									
Do	do	do	1921	19570	do	do										68	1¼–⅜		
Do	do	do	1922	22328	do	do										72	1¼–⅜		
Do	do	do	1922	22531	do	do		2.14	1.9	14.8				10.0	6				
Do	do	do	1922	22600	do	do										77	1¼–#4		
Do	do	do	1923	24234	do	do										72	1¼–#4		
Do	do	do	1923	24456	do	do		1.71	7.0	20.7			3,640	13.7	5				
Do	do	do	1937	44535	do	do					23.4	A				93	1½–⅜		
Lucas	Holland	do	1909	3735	Stone	Dolomite		2.75	.9	6.8				13.7	7				
Do	do	do	1909	3938	do	do		2.80	.3	4.1				17.7	14				
Do	do	do	1912	5756	do	do		2.70	1.6	4.9			26,950	18.8	9				
Do	do	do		6057	do	do		2.70	1.4	5.8			19,430	11.3	6				
Do	do	do	1921	20195	do	do				4.3									
Do	Silica	do	1909	3734	do	do		2.60	1.7	5.0				15.7	8				
Do	do	do	1921	19636	do	do				7.9									
Do	do	do	1921	19935	do	do				6.0									
Do	do	do	1925	27374	do	do		2.23	5.8	13.8				8.0	3				

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

OHIO—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Lucas	Silica	Comm	1925	27445	Stone	Dolomite		2.77	0.7	5.4				15.3	7				
Do	do	do	1931	34544	do	do		2.15	7.9	23.6	98.5	A		.0	2				
Do	do	do	1905	1184	do	do		2.65	.5	4.8				14.2	10				
Do	Toledo	do	1910	4342	do	Limestone		2.65	1.4	8.0				6.8	5				
Do	do	Local	1918	13093	do	Dolomite		2.77	.3	6.1				12.7	6				
Do	do	Comm	1920	16548	Slag	Blast furnace				12.8						70	1¼–¾		
Do	do	do	1920	17263	do	do		2.22	2.0	8.3						72	2½–¾		
Do	do	do	1921	18865	do	do		2.16	2.6	15.7									
Do	do	do	1921	19353	do	do				15.0						76	2–½		
Do	do	do	1937	44324	do	do					33.5	A				90	1½–#4		
Do	Vulcan	do	1912	5754	Stone	Dolomite		2.75	.7	4.5				16.9	12				
Do	do	do	1912	6054	do	Siliceous limestone.		2.70	.6	4.2			25,480	15.7	12				
Do	do	do	1915	8402	do	Dolomite		2.75	.5				11,600	13.0	3				
Do	Waterville	do	1911	4995	do	do		2.75	1.0	3.1									
Do	do	do	1912	6084	do	do		2.70	1.2	2.3				15.0	15				
Do	do	do	1916	9890	do	Argillaceous dolomite.		2.70	1.4	3.3				16.3	11				
Do	do	do	1916	9983	do	Dolomite		2.70	1.2	2.8				16.3	14				
Do	do	do	1918	13179	do	Slate		2.74	.2	8.6				16.0	14				
Do	do	do	1918	13397	do	Limestone		2.65	.1	4.0				16.0	19				
Do	do	do	1920	16747	do	Dolomitic limestone.		2.62	1.3	6.9				4.3	5				
Do	do	do	1926	28570	do	Limestone		2.53	2.5	9.7				8.0	4				
Do	do	do	1928	30799	do	Calcareous sandstone.		2.17	6.6	16.2				5.3	4			S	1½–1
Do	do	do	1928	31200	do	Limestone		2.69	.5	4.0				14.7	8			S	1½–1
Do	Whitehouse	do	1916	11097	do	do		2.57	1.8	6.2				9.3	6				
Do	do	do	1921	19289	do	do		2.56	2.2	6.1				7.0	6				
Madison	Deercreek Township.	Prosp	1923	24258	Gravel	Dolomite	2			16.4		A							
Do	West Jefferson	Comm	1935	42111	do	LSC	2½	2.64	2.6									5.2	2½–¾
Do	do	do	1935	42112	do	do	1½	2.61	2.3									9.4	1½–#4
Mahoning	Youngstown	Local	1905	1352	Stone	Limestone		2.70	.1	4.4									
Do	do	Comm	1909	3449	Slag	Blast furnace		2.80	.7	7.1				18 3					
Do	do	do	1914	7648	do	do		2.20	3.3	8.1				14.3	5				
Do	do	do	1915	8992	do	Open hearth		3.20	.4	4.7									
Do	do	do	1915	8993	do	do		3.00	.3	7.7				18.0	14				
Do	do	do	1917	11333	do	Blast furnace		2.02	5.8	13.5			4,210	13.2	4				
Do	do	do	1920	16052	Gravel	Sandstone	2			17.5		A							
Do	do	do	1920	16290	Slag	Blast furnace		3.22	1.5	12.8									
Do	do	do	1920	17504	do	do				20.1									
Do	do	do	1920	17505	do	do				26.0									
Do	do	do	1921	18737	do	do		2.16	3.8	19.5									
Do	do	do	1921	19474	do	do		2.18	2.8	16.0						61	2½–¾		
Do	do	do	1921	19475	do	do		1.89	6.8	13.5						69	2½–¾		
Do	do	do	1921	19930	do	do				11.9						80	2½–¾		
Do	do	do	1921	19931	do	do				14.4						67	2½–¾		
Do	do	do	1921	19964	do	do				13.9						76	2½–¾		
Do	do	do	1921	20450	do	do				19.3									
Do	do	do	1921	20451	do	do				14.1									
Do	do	do	1922	22206	do	do				15.0						72	3–¾		
Do	do	do	1923	23512	do	do				9.1									
Do	do	do	1923	23868	do	do				11.6						66	3–1		
Do	do	do	1923	24117	do	do				19.6									
Do	do	do	1923	24287	do	do										70	1½–#4		
Do	do	do	1928	30070	do	do				15.8						78	1½–#4		
Do	do	do	1928	30071	do	do				15.3						74	1½–#4		
Do	do	do	1929	31279	do	do		2.06	4.2	13.7				18.0	14				
Do	do	do	1929	31293	do	Open hearth		3.53	.5	2.6						77	1½–#4		
Do	do	do	1931	33276	do	Blast furnace		2.29		11.8						80	1½–#4		
Do	do	do	1937	44337	do	do					33.4	A				83	1½–#4		
Do	do	do	1937	44338	do	do					32.9	A							
Do	do	do	1943	61479	do	do					37.3	B							
Do	do	do	1944	66184	do	do					34.0	A							
Do	do	do	1949	77153	do	do					37.2	A							
Marion	Marion	Local	1910	4400	Stone	Limestone		2.60	2.0	3.1				12.[illegible]	7				

Do	do	do	1910	4423	do	Sandstone		2.45	1.7	4.2				17.2	8			
Do	do	do	1921	20009	do	Fossiliferous limestone.				4.9								
Do	do	do	1921	20010	do	do				7.2								
Do	do	do	1922	21852	do	Limestone				5.9								
Do	do	Comm	1922	21854	do	Dolomite				3.6								
Do	do	do	1922	22257	do	do				4.2								
Do	do	do	1922	22555	do	Limestone				5.7								
Miami	Covington	do	1912	5891	do	Dolomite		2.75	1.1	3.8			20,200	12.4	8			
Do	Ludlow Falls	do	1906	1747	do	Limestone		2.75	.2	5.0				16.0	9			
Do	do	do	1907	2015	do	do		2.75	.4	3.8				14.7	11			
Do	do	do	1908	2457	do	do		2.70	1.6	5.3				11.9	7			
Do	Piqua	do	1909	3714	do	do		2.70	.1	6.0				12.1	5			
Do	do	do	1912	5862	do	Marble		2.65	.6	7.8				5.6	3			
Do	do	do	1912	5880	do	Crystalline limestone.		2.75	.3	6.0				11.6	5			
Do	do	do	1916	10537	do	Dolomite		2.50	1.6	10.3			9,810	11.0	4			
Do	do	do	1916	10538	do	do		2.77	.6	4.8			15,150	15.0	13			
Do	do	do	1921	19290	do	Limestone				9.0								
Do	do	do	1921	20100	do	do				5.0								
Do	Pleasant Hill	do	1919	15194	Gravel	LDo	2			6.4		A						
Do	do	do	1921	19768	do	Dolomite	1½			7.6		A						
Montgomery	Butler Township.	Prosp	1905	1180	Stone	do		2.65	.7	7.5				14.8	10			
Do	do	Local	1925	26940	Gravel	LDoC	2			14.4		A						
Do	Centerville	Comm	1909	3257	Stone	Limestone		2.65	.4	6.2				9.3	5			
Do	do	Local	1909	3369	do	do		2.70	.6	7.4				14.8	6			
Do	do	do	1916	10532	do	Argillaceous limestone.									3			
Do	do	do	1916	10533	do	do									5			
Do	do	do	1916	10535	do	Limestone								10.9	3			
Do	Dayton	Prosp	1906	1732	do	do		2.80	.4	3.9				15.2	12			
Do	do	do	1906	1763	do	do		2.60	.3	8.7				12.0	9			
Do	do	Comm	1920	16371	Gravel	Dolomite	2			12.2		A						
Do	do	do	1920	17191	do	do	2			9.8		A						
Do	do	do	1921	20108	do	do	1½			8.1		A						
Do	do	Local	1925	26821	do	LDo	1½			8.8		A						
Do	Germantown	Comm	1919	15213	do	LDo	2			6.8		A						
Do	do	do	1920	16381	do	Dolomite	1½			5.4		A						
Do	Liberty	do	1920	16382	do	Do(S)	1½			12.5		A						
Do	Madison Township.	Prosp	1905	1179	Stone	Limestone		2.65	.4	10.2				11.2	7			
Morgan	Deerfield Township.	Local	1921	19350	do	Sandstone		2.20	6.2	16.7				.0	3			
Do	do	Prosp	1921	19352	do	Argillaceous limestone.		2.69	.4	6.2				13.3	6			
Do	Malta	Local	1920	16171	do	Feldspathic sandstone.		2.30	4.7	7.7				.0	4			
Do	do	do	1920	16173	do	do		2.22	5.5	10.5				.0	4			
Do	do	do	1921	19351	do	Argillaceous limestone.		2.60	1.0	5.9				14.7	8			
Do	Malta Township.	Prosp	1920	16922	do	Limestone		2.69	.3	6.5				12.7	6			
Do	do	Local	1920	17389	do	Argillaceous limestone.		2.62	.8	4.7				15.3	7			
Do	Morgan Township.	do	1920	16921	Gravel	SQGn	1½			14.5		A						
Morrow	Shauck	do	1923	23782	do	QSL	2			33.5		A						
Muskingum	Dresden	Comm	1922	22219	do	LQS	2			12.5		A						
Do	do	do	1922	22493	do	DoLQSG	1½			11.0		A						
Do	do	do	1935	42113	do	LSC	1½	2.55	2.1								11.7	1½–⅜
Do	do	do	1935	42114	do	LSCSh	1	2.57	1.9								9.1	1–#4
Do	Gratiot	Prosp	1914	8270	Stone	Siliceous limestone.		2.60	1.1	4.2				18.3	13			
Do	Zanesville	do	1913	7126	do	Sandstone		2.45	1.4	43.9				.0	1			
Noble	Stock Township	do	1921	19377	do	Ferruginous sandstone.		2.27	4.9	11.9				.0	4			
Do	do	do	1921	19378	do	Argillaceous limestone.		2.69	.1	6.0				16.0	7			
Do	do	do	1922	21325	do	do		2.68	.2	5.2				15.3	10			
Ottawa	Clay Center	Comm	1924	25406	do	Dolomite		2.45	2.5	12.6				14.0	4		S	1½–1
Do	do	do	1927	29386	do	do		2.54	2.5	6.1				7.0	4			
Do	Genoa	do	1919	15331	do	do				6.7								
Do	Limestone	Prosp	1916	9973	do	do		2.60		5.5				12.0	7			
Do	Marblehead	Comm	1924	25396	do	Limestone		2.56	2.0	6.6				8.7	4		Q	1½–1
Do	do	do	1925	26938	do	do				5.8								
Do	do	do	1927	29403	do	do		2.53	2.1	8.1				.7	4			
Do	do	do	1932	34733	do	do				8.2	62.8	A						
Do	do	do	1934	40126	do	do					54.8	A						

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

OHIO—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Ottawa	Oakharbor	Local	1903	779	Stone	Dolomite		2.80	0.1	6.1									
Do	do	do	1903	788	do	Limestone		2.65	.6	8.1									
Do	Rockyridge	Comm	1916	9945	do	Dolomite		2.80	.2	5.4				12.0	9				
Do	White Rock	do	1909	3541	do	do		2.80	.4	4.2				15.7	11				
Do	do	do	1912	5757	do	do		2.70	.8	5.8				15.5	10				
Do	do	do	1912	6052	do	do		2.75	.6	5.9			16,620	14.7	5				
Do	do	do	1921	19793	do	do		2.60	1.9	9.4				13.3	5				
Do	do	do	1923	23760	do	do		2.61	1.1	7.3				10.0	4				
Do	do	do	1932	34722	do	do				8.6	37.3	A							
Perry	Thorn Township.	Local	1921	19452	do	Chert		2.43	1.3	7.4									
Pickaway	Circleville	Comm	1919	15217	do	Dolomitic marble		2.63	1.7	4.4				14.7	9				
Do	do	do	1932	34572	Gravel	LDo		2.56	2.4	7.2		A							
Do	Jackson Township.	Local	1922	22291	do	DoD	3			15.5		A							
Pike	Sargents	Comm	1920	16013	do	LDo	1½			16.4		A							
Do	do	do	1920	17208	do	DoQC	1½			23.0		A							
Portage	Atwater Township.	Prosp	1913	6692	Stone	Limestone		2.70	.7	4.7				17.4	8				
Do	Freedom Township.	do	1913	6690	do	do		2.65	.8	4.6				15.1	13				
Do	Palmyra	do	1913	6790	do	Ferruginous sandstone.		2.45	3.7	10.0									
Do	do	do	1913	7118	do	do		2.40	1.0	21.4				1.3	2				
Preble	Lewisburg	do	1912	5930	do	Argillaceous dolomite.		2.55	3.5	7.2				2.3	4				
Do	do	Comm	1926	28150	do	Dolomite		2.64	2.2	5.7				14.3	9			U	1½–1
Do	do	do	1926	28151	do	Crystalline limestone.		2.67	.5	4.0				12.0	6			Q	1½–1
Do	do	do	1926	28152	do	Dolomite		2.72	1.1	4.6				13.7	10			Q	1½–1
Do	do	do	1929	31566	do	Argillaceous dolomite.		2.35	5.0	11.0				9.7	4			U	1½–1
Do	do	do	1929	31567	do	do												U	1½–1
Do	do	do	1929	32355	do	do				8.0				1.7	5			UU	1½–1
Do	do	do	1929	32356	do	do								9.7	9			US	1½–1
Do	do	do	1929	32357	do	do								12.3	8			S	1½–1
Do	do	do	1929	32358	do	Dolomite								12.3	11				
Do	New Paris	do	1908	2893	do	Limestone		2.80	.2	4.3				17.9	7				
Do	do	do	1909	3181	do	Dolomite		2.75	.6	3.6				15.3	13				
Do	do	do	1912	5980	do	do		2.80	.3	2.6				15.8	14				
Do	do	do	1916	10539	do	do		2.68	.7	3.4			16,480	16.7	6				
Do	do	do	1922	21381	do	do				3.8									
Do	Somers Township.	Local	1921	20128	Gravel	do	1½			16.8		A							
Putnam	Pleasant Township.	do	1922	21330	Stone	do				4.6									
Ross	Franklin Township.	do	1922	22474	Gravel	LDoS	2			15.3		A							
Do	Thrifton	Comm	1909	3183	Stone	Sandstone		2.65	2.2					15.8	11				
Do	do	do	1921	19370	do	Dolomite				5.9									
Do	do	Prosp	1931	34026	do	Argillaceous dolomite.		2.68	1.7					14.8	6			Q	1½–1
Do	do	do	1931	34027	do	do		2.66	1.7					15.4	6			S	1½–1
Sandusky	Bellevue	Comm	1908	2794A	do	Limestone		2.50	3.1					7.6	4				
Do	do	do	1908	2794B	do	do		2.75	.6	3.4				15.0	8				
Do	do	do	1910	4342	do	do		2.65	1.4	8.0				6.8	5				
Do	do	do	1910	4889	do	do		2.65	.6	4.1				12.3	6				
Do	do	do	1911	5090	do	do		2.69	.6	6.3				14.8	10				
Do	do	do	1911	5091	do	do		2.76	.8	4.2				16.4	14				
Do	do	do	1921	19569	do	do				7.6									
Do	Fremont	Local	1914	7776	do	Dolomite		2.70	.8	7.8				11.2	6				
Do	do	Comm	1922	22299	do	do		2.51	2.8	7.5				8.7	4				
Do	do	do	1923	23655	do	do		2.46	3.5	7.0				16.3	5				
Do	Gibsonburg	do	1924	25404	do	do		2.49	2.9	10.0				12.0	5			S	1½–1
Do	do	do	1924	25408	do	do		2.48	2.4	9.4				10.7	5			S	1½–1
Do	Woodville	do	1917	12358	do	do		2.56	2.6	7.5				17.0	7				
Do	do	do	1919	13888	do	do		2.55	2.3	5.8				16.0	7				

Do	do	do	1920	16547	do	do		2.60	2.2	5.8					6				
Do	do	do	1922	21628	do	do		2.42	3.7	8.0				12.7	6				
Do	do	do	1924	25394	do	do		2.75	.4	8.8				13.7	5				
Do	do	do	1924	25413	do	do		2.71	.5	5.6				16.7	8			S	1½-1
Do	do	do	1924	26936	do	do				7.0									
Do	do	do	1927	29354	do	do		2.63	1.8	7.4				8.3	5				
Do	do	do	1930	33269	do	do		2.43	4.7	5.8				12.8	5				
Scioto	Portsmouth	do	1921	19715	Gravel	SQz	2			6.9		A							
Do	do	do	1923	24147	do	QSC	1½			9.0		A							
Seneca	Bascom	do	1921	19781	Stone	Dolomite		2.58	2.3	7.9				8.7	4				
Do	do	do	1924	24915	do	do		2.44	3.7	7.4				13.0	6				
Do	Bloomville	do	1908	2477	do	Argillaceous limestone.		2.70	1.3	3.3				15.2	17				
Do	do	do	1908	2478	do	Limestone		2.75	.2	4.3				12.8	8				
Do	do	do	1911	5556	do	do		2.70	.6	3.6			20, 250	12.5	6				
Do	do	do	1915	9281	do	do		2.50	2.1	4.3				13.5	7				
Do	do	do	1917	11330	do	Argillaceous limestone.		2.66	1.3	3.6			16, 560	12.5	6				
Do	do	do	1921	19586	do	do				5.0									
Do	do	do	1922	22220	do	do				3.9									
Do	do	do	1922	22221	do	Limestone				4.2									
Do	do	do	1922	22532	do	do				3.3									
Do	do	do	1924	24886	do	Dolomitic limestone.		2.63	1.4	4.4				13.0	7			S	1½-1
Do	Clinton Township.	Local	1921	19331	do	Dolomite		2.57	2.4	5.4				12.0	7				
Do	Maple Grove	Comm	1921	19782	do	do		2.64	1.6	7.5				11.0	7				
Do	do	do	1924	25020	do	do		2.35	3.4	10.8				7.3	5			U	1½-1
Do	do	do	1924	25397	do	do		2.64	.9	6.6				13.0	5			S	1½-1
Do	do	do	1925	26937	do	do				6.1									
Do	do	do	1927	29544	do	do		2.73	.7	6.3				9.7	6				
Do	do	do	1931	34571	do	do		2.37	4.4	8.2	49.2	A		10.3	4				
Do	Republic	Prosp	1908	2532	do	Limestone		2.70	1.3	4.5				15.3	8				
Shelby	Sidney	Comm	1935	40968	Gravel	do	2		1.8	5.8		A						8.6	2-¾
Do	do	do	1935	40969	do	LSShSc	2		1.5	8.5		A						11.6	2-¾
Do	do	do	1935	40970	do	Limestone	2		1.4	6.3		A						9.9	2-¾
Do	do	do	1935	40971	do	do	2		1.5									12.1	2-¾
Do	do	do	1935	40972	do	do	1		2.0									15.6	1-#4
Do	do	do	1935	40973	do	do	1		2.0									12.5	1-#4
Do	do	do	1935	40974	do	L(SCQ)	1		1.9									16.9	1-#4
Do	do	do	1935	42115	do	Limestone	2	2.60	2.0									8.5	2-¾
Do	do	do	1935	42116	do	do	1½	2.59	2.5									10.3	1½-#4
Do	Washington Township.	Local	1926	28624	do	LDo	2			17.4		A							
Stark	Canton	Comm	1920	17007	Stone	Dolomite		2.65	1.3	3.4									
Do	do	do	1920	17059	Slag	Blast furnace				17.5									
Do	Massillon	do	1923	23691	Gravel	SDoQ	1½			15.4		A							
Do	do	do	1938	46097	do	LDoSSh	1½			17.0	33.0	A						7.2	1½-#4
Do	do	do	1945	68768	do	LGQzSSh					30.7	A						[12] 19.0	1½-#4
Do	Navarre	do	1938	46095	do	LDoS	1½			14.5	29.6	A						4.1	1½-#4
Do	North Industry	Prosp	1908	2663	Stone	Limestone		2.70	.3	3.9				15.8	9				
Summit	Akron	Comm	1921	18946	Gravel	SQC	1½			18.0		A							
Do	Twinsburg	Prosp	1908	2833	Stone	Sandstone		2.45	2.8	5.2				13.8	14				
Trumbull	Girard	Comm	1917	11334	Slag	Blast furnace		2.26	3.6	4.7			19, 080	16.4	12				
Do	Howland Township.	Prosp	1903	828	Stone	Sandstone		2.60	.5	3.1					8				
Do	Hubbard	Comm	1921	18732	Slag	Blast furnace		2.19	4.1	13.0									
Do	Kinsman	do	1937	43174	Gravel	Sandstone					36.9	A							
Do	McDonald	do	1921	18734	Slag	Blast furnace		2.00	4.6	15.4									
Do	Warren	do	1937	44340	do	do					46.1	A				80	1½-#4		
Do	do	do	1943	61478	do	do					44.8	B							
Tuscarawas	Dover	Local	1913	6710	do	do				16.5				11.4	5				
Do	do	Comm	1921	20578	do	do		1.93	6.4	18.0				12.7	5				
Do	do	do	1923	23710	do	do										66	1½-#4		
Do	do	do	1923	23728	do	do				17.1									
Do	Port Washington.	Local	1921	20157	Gravel	GSQ	2			15.7		A							
Union	York	do	1929	32145	Stone	Dolomite		2.72	1.0	6.6								S	1½-1
Van Wert	Middle Point	Comm	1911	5555	do	do		2.75	.4	5.3			25, 200	16.3	13				
Do	do	do	1917	11328	do	Argillaceous limestone.		2.71	1.0	3.8			27, 570	15.6	10				
Do	do	do	1919	14771	do	Dolomite		2.66	1.2	5.0				15.7	8				
Do	do	do	1924	25052	do	do		2.69	.7	4.6				15.3	10			S	1½-1
Do	do	do	1924	25053	do	do		2.76	.4	3.8				18.0	12			S	1½-1
Do	do	do	1924	25054	do	do		2.72	.8	5.2				14.0	8			S	1½-1
Do	Willshire	do	1912	6116	do	do		2.55	.7	11.5				9.2	4				
Washington	Grandview	do	1946	70527	Gravel	LDoQzGnCSh		2.58	2.3		30.0	A						14.3	1½-#4
Do	do	do	1946	71311	do	LDoGn		2.59	2.0									23.7	1½-1
Do	do	do	1946	71312	do	LDoCQz		2.59	2.1									22.4	1-¾
Do	do	do	1946	72229	do	LDoCQz	1½											11.6	1½-#4

[12] 20 cycles, freezing and thawing; loss determined with half-size sieves.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

OHIO—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Washington	Marietta (Ohio River).	Comm	1920	16560	Gravel	SQC	1½			7.2		A							
Do	do	do	1920	16942	do	SQC	1½			11.6		A							
Do	do	do	1921	19797	do	SQC	1½			11.6		A							
Do	do	do	1921	20417	do	SQC	1½			10.5		A							
Do	do	do	1922	22492	do	SQC	1½			7.1		A							
Do	do	do	1922	22494	do	SQC	1½			8.8		A							
Wood	Bowling Green	do	1916	9947	Stone	Dolomite		2.70	0.8	7.5				12.2	6				
Do	Luckey	Prosp	1916	10316	do	do		2.60	2.3	7.3				12.0	6				
Do	do	Comm	1924	25475	do	do		2.54	1.5	7.4				14.0	4			S	1½–1
Do	do	do	1924	25477	do	do		2.73	.6	7.2				16.7	5			S	1½–1
Do	Middleton Township.	Prosp	1924	26248	do	Argillaceous dolomite.		2.74	.8	3.6				17.7	17			Q	1½–1
Do	North Baltimore	Comm	1916	9883	do	do		2.70	1.6	5.0				16.0	4				
Do	do	do	1916	9957	do	Dolomite		2.70	1.2	4.0				14.3	14				
Do	do	do	1919	15047	do	Argillaceous dolomite.		2.70	1.5	4.6									
Do	do	do	1924	24619	do	do		2.72	.7	4.3				16.7	14			U	1½–1
Do	do	do	1924	24848	do	do		2.68	1.3	3.8				16.3	15			Q	1½–1
Do	do	do	1924	24849	do	do		2.71	1.2	3.6				17.0	16			Q	1½–1
Do	do	do	1924	24850	do	Dolomite		2.69	1.0	4.8				17.0	9			S	1½–1
Do	do	do	1927	29370	do	do		2.72	1.0	4.7				17.0	8				
Wyandot	Carey	Local	1910	4691	do	do		2.65	.8	5.9			34,650	8.8	3				
Do	do	Comm	1924	25021	do	do		2.21	7.0	26.2				.0	2			U	1½–1
Do	do	do	1924	25399	do	do		2.44	3.4	18.2				12.3	4			S	1½–1
Do	do	do	1925	26934	do	do				11.0									
Do	do	do	1926	28392	do	do				11.9									
Do	do	do	1926	28393	do	do		2.72	.7	5.7				15.3	12				
Do	do	do	1927	29417	do	do		2.42	2.8	19.7					3				
Do	Marseilles	Local	1922	21697	do	do		2.55	2.2	5.7				13.2	5				
Do	Upper Sandusky	Comm	1929	31522	do	do		2.62	2.3	4.9				14.0				S	1½–1

OKLAHOMA

Atoka	Chockie	Prosp	1910	4352	Stone	Chert		2.45	1.9	6.3				18.8	5				
Do	do	Local	1912	6374A	do	do		2.60	.3	4.5									
Do	do	do	1912	6374B	do	Limestone		2.70	.4	4.5				16.0	7				
Do	Stringtown	Pros	1912	5853	do	Chert		2.45	1.9	6.3				18.7	5				
Do	do	do	1912	5982	do	do.[1]		2.55	1.1	7.4									
Do	do	do	1915	9464	do	Argillaceous limestone.		2.60	1.2	4.3				18.8	17				
Do	do	Comm	1921	19366	do	Chert		2.53	1.1	4.6				15.7	9				
Do	do	do	1921	19367	do	do		2.58	.5	4.0				19.3	16				
Do	do	do	1929	31508	do	Limestone				4.1									
Blaine	Watonga	Prosp	1909	3347	do	Dolomite		2.70	.7	5.5				16.8	13				
Do	Watonga (Salt Creek Canyon).	do	1908	2950	do	Gypsum		2.30	2.3	38.2				4.8	3				
Bryan	Armstrong	Local	1919	14997	do	Fossiliferous limestone.		2.64	.9	6.3				13.3	6				
Do	do	Prosp	1920	16134	do	Limestone		2.67	.9	4.9				15.7	6				
Do	Caddo	do	1919	15118	do	do		2.45	3.3	6.4				.0	5				
Do	do	do	1920	16170	do	Argillaceous limestone.		2.53	2.3	6.1				14.7	6				
Do	Durant	do	1920	16135	do	Fossiliferous sandstone.		2.68	.7	4.9				14.7	7				
Do	do	do	1920	16136	do	Calcareous sandstone.		2.47	3.4	6.8				11.3	7				
Caddo	Cement	do	1910	4365	do	Limestone		2.64	.4	4.1				16.2	7				
Do	do	do	1924	24887	do	do				6.8									
Cherokee	Keough	Comm	1929	31530	Gravel	Chert	2	2.47	1.8	6.9		A							
Comanche	Fort Sill	Prosp	1910	4703	Stone	Limestone		2.70	.3					13.7	5				
Do	do	Local	1910	4704	do	do		2.60	.7					14.8	6				
Do	do	Prosp	1910	4705	do	Rhyolite[6]		2.60	.7					18.7	15				

Do	Richards	Comm	1910	4366	do	Limestone		2.70	.1	4.0				16.6	6				
Do	do	do	1911	5251	do	do		2.70	.4	3.9				16.2	9				
Do	do	do	1927	29562	do	do				5.5								S	1½-1
Do	do	do	1929	31440	do	do		2.70	.3									S	1½-1
Do	do	do	1929	31489	do	do		2.69	.3									S	1½-1
Do	do	do	1929	32073	do	do		2.68	.3	4.0									
Do	do	do	1935	42119	do	Argillaceous limestone.												8.1	1½-#4
Do	do	do	1935	42120	do	do												12.8	1½-#4
Greer	Granite	do	1909	3388	do	Granite							18,170						
Do	do	do	1910	4368	do	Granite porphyry		2.65	.1	2.5				19.3	21				
Do	do	do	1910	4369	do	Hornblende granite.		2.65	.1	6.3				18.7	8				
Do	do	Local	1910	4370	do	do		2.65	.1	3.8				19.0	9				
Johnston	Bromide	do	1920	17159	do	Limestone				5.0									
Do	do	Comm	1921	20583	do	do		2.62	1.2	5.9				15.3	8				
Do	Mannsville	Local	1924	26259	Gravel	do	2			19.4		A							
Do	Ravia	Prosp	1910	4355	Stone	Granite		2.60	.1	3.3				19.0	9				
Do	do	do	1910	4356	do	Asphaltic limestone.		2.16	2.0	4.0				3.2	6				
Do	do	do	1911	5590	do	Granite		2.60	.2	4.2									
Do	Tishomingo	do	1910	4353	do	do		2.64	.0	6.0				19.2	8				
Do	do	do	1910	4354	do	Diabase		3.04	.1	4.1				18.8	25				
Do	Troy	do	1921	19348	do	do		3.03	.1	4.0				18.7	20				
Do	do	Comm	1921	19349	do	Granite		2.61	.4	10.3				18.0	6				
Do	do	do	1922	21335	do	Biotite granite		2.64	.4	10.5			18,420	18.7	4				
Do	Wapanucka	Prosp	1914	7496	do	Limestone		2.50	1.8	5.6									
Kay	Newkirk	do	1910	4348	do	Argillaceous limestone.		2.29	4.8	9.9				.0	4				
Do	Ponca City	do	1910	4346	do	do		2.29	3.5					.0	3				
Do	do	do	1910	4347	do	Limestone		2.45	2.5	5.7				8.3	5				
Do	do	do	1911	5142	do	do		2.50	1.9					13.2	7				
Do	do	do	1911	5143	do	do		2.50	1.9					12.3	5				
Do	do	do	1911	5144	do	do		2.40	3.7					11.0	5				
Do	do	do	1911	5145	do	do		2.40	3.1					8.6	5				
Do	do	do	1911	5325	do	do		2.50	2.0	6.1				8.6	5				
Do	do	Local	1927	28799	do	Argillaceous limestone.		2.38	3.0	10.4				8.7	5			Q	1½-1
Do	do	do	1927	28800	do	do		2.34	3.6	9.4				12.0	5			S	1½-1
Do	Uncas	Prosp	1910	4349	do	Shell limestone		2.40	3.5	9.3				.0	3				
Kiowa	Cold Springs	Comm	1910	4367	do	Diorite		2.86	.1	2.8				18.8	22				
Do	Lone Wolf	Prosp	1923	23862	do	Granite [6]		2.55	.9				34,810	18.0	9				
Do	Mountain View	do	1922	22620	do	Limestone		2.47	3.4	11.7				12.7	7				
Latimer	Gowen	do	1920	17057	do	Sandstone		2.29	3.5	15.8									
LeFlore	Wister	do	1920	16050	do	do		2.51	1.1	2.3				18.0	13				
Do	do	do	1920	16060	do	do		2.55	1.2	1.7				18.3	12				
Do	do	do	1920	16062	do	do		2.49	1.5	4.9									
McCurtain	Garvin	do	1912	6077	do	Limestone		2.50	1.3	10.0				.0	4				
Marshall	Madill	do	1909	3872	do	do		2.60	1.6	4.9				13.0	5				
Mayes	Salina	Local	1921	18228	do	Chert				4.3									
Do	do	do	1921	18229	do	do				4.8									
Do	do	do	1921	18230	do	Limestone				5.7									
Do	do	do	1922	21310	do	Chert		2.33	4.5	4.6				18.7	19				
Murray	Big Canyon	Comm	1947	74228A	do	Argillaceous limestone.		2.68	.6		23.0	A						[13] 18.0	¾-½
Do	do	do	1947	74228B	do	do		2.54	2.7									[13] 64.0	¾-½
Do	Crusher	do	1910	4362	do	Limestone		2.70	.1	4.4				15.1	8				
Do	do	do	1911	5376	do	do		2.75	.2	3.5				14.8	7				
Do	do	do	1921	19244	do	Dolomite				5.0									
Do	do	do	1924	24955	do	Limestone				5.4								Q	1½-1
Do	do	do	1929	31574	do	Argillaceous limestone.		2.71	.2									S	1½-1
Do	Dougherty	do	1910	4359	do	Bituminous limestone.		2.50	.6	4.2									
Do	do	do	1920	16085	Gravel	Chert	2			9.7		A							
Do	do	do	1920	16687	do	Limestone	2			11.2		A							
Muskogee	Fort Gibson (Arkansas River).	do	1929	31531	do	Chert	1½	2.40	2.6										
Do	do	do	1929	31569	do	do	2½	2.43	2.0	6.8		A							
Do	do	do	1929	32025	do	do	2	2.42	2.1	7.7		A							
Do	do	do	1929	32088	do	do	2	2.40	2.6	8.0		A							
Do	Muskogee	do	1919	14835	do	do	2			5.7		A							
Do	do	do	1920	15479	do	do	2			9.6		A							
Do	do	do	1929	32005	do	do	2	2.39	2.8	7.1		A							
Okmulgee	Okmulgee	Prosp	1921	19098	Stone	Ferruginous sandstone.		1.63	5.5	15.6				.7	4				
Osage	Avant	do	1910	4383	do	Limestone		2.60	1.4	5.7				12.3	4				

[1] Weathered. [6] Altered. [13] 10 cycles, freezing and thawing.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

OKLAHOMA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Ottawa	Century	Comm	1933	34859	Stone	Chert breccia				6.9				18.7	16				
Do	do	do	1933	34860	do	do				4.8				19.3	17				
Do	do	do	1933	34866	do	do		2.56	1.5	7.7									
Payne	Ripley	do	1911	5425	do	Dolomite		2.80	.3	4.6				14.6	7				
Pittsburg	Hartshorne	do	1910	4350	do	Limestone		2.69	.2					16.8	8				
Do	do	do	1910	4351	do	do		2.64	.7	4.4				16.6	13				
Do	do	do	1920	15957	do	do		2.70	.3	4.1				15.7	5				
Do	do	do	1921	17875	do	do		2.62	.8	3.8									
Pontotoc	Ada	do	1910	4364	do	do		2.64	.2	9.0				8.2	3				
Do	do	do	1924	26035	do	do												Q	1½–1
Do	Fitzhugh	do	1915	8856	do	Fossiliferous limestone.		2.55	1.4	16.7				6.7	2				
Do	do	do	1915	8857	do	do		2.70	.4	12.0				17.7	7				
Pushmataha	Tuskahoma	Prosp	1911	5693	do	Chert		2.60	.3	5.8				19.4	6				
Tillman	Frederick	Local	1938	46420	Gravel	Limestone					29.1	B							
Tulsa	Garnett	Comm	1920	15510	Stone	do				4.2									
Do	Lost City	Local	1919	14914	do	Argillaceous limestone.		2.65	.7	7.1				14.7	6				
Do	do	Comm	1920	15790	do	Limestone		2.62	1.9	5.7									
Do	do	Local	1920	15791	do	do		2.59	1.6	7.4				13.3	4				
Do	Sand Springs	Prosp	1920	16586	do	do		2.55	1.6	8.2				11.0	5				
Do	do	do	1920	16825	do	Argillaceous limestone.		2.62	1.6	6.0				12.0	6				
Do	do	do	1920	16826	do	Limestone		2.66	.7	5.1				13.3	7				
Do	do	Local	1927	29246	do	do				7.7								S	1½–1
Do	do	do	1927	29621	do	Argillaceous limestone.		2.44	3.6	7.9				10.0	5			U	1½–1
Do	Tulsa	Prosp	1909	3717	do	Sandstone		2.55	2.0	9.6				14.2	13				
Do	do	do	1920	15788	do	Argillaceous limestone.		2.59	1.2	5.8				13.0	5				
Do	do	do	1920	15789	do	do		2.64	.6	5.7				12.7	5				
Do	do	Comm	1934	40098	do	Limestone					40.4	A							
Washington	Dewey	do	1913	6468	do	do		2.65	.8	5.0				17.3	5				
Do	do	do	1917	11640	do	Argillaceous limestone.		2.66	.7	5.3				14.0	5				
Do	do	do	1917	11641	do	do		2.64	.7	5.3				11.3	5				
Do	do	do	1922	22711	do	do		2.66	.5	6.2				14.3	5				

OREGON

Baker	Nelsons	Prosp	1921	18222	Stone	Marble		2.65	0.4	5.9				16.7	7				
Benton	Corvallis	Comm	1942	56884	Gravel	BSy					17.6	B							
Do	do	do	1942	56888	do	RAnGB					18.0	B							
Clackamas	Oregon City	do	1942	56877	do	BR					16.4	B							
Do	do	do	1942	59606	do	BR(Qz)	1½	2.58	1.8		14.4	B							
Clatsop	Seaside	do	1942	56883	do	DB					13.1	B							
Columbia	Rainier	do	1942	56864	Stone	Basalt		2.95	.1				59,350		18				
Do	do	do	1942	56865	do	do					17.6	B							
Do	Saint Helens	do	1908	2920	do	do		2.80	1.0	1.8				18.8	22				
Douglas	Reedsport	do	1942	56873	Gravel	RAnFe					13.1	B							
Do	Roseburg	do	1942	56876	do	Basalt					15.5	B							
Jackson	Griffen Creek	Prosp	1913	7357	Stone	Basalt breccia [6]		2.90	.2	1.8				18.5	24				
Do	Rogue River	Comm	1943	61960	do	Quartzite		2.63	.3		22.3	B							
Josephine	Grants Pass	do	1942	56882	Gravel	PAnSy					19.0	B							
Klamath	Crater Lake	Prosp	1925	28010	Stone	Augite andesite		2.60	1.6	6.0				17.3	10				
Do	do	do	1925	28011	do	do		2.68	1.2	3.8				16.0	8				
Do	do	do	1925	28012	do	do		2.65	1.2	4.6				15.3	8				
Do	do	do	1925	28013	do	do		2.63	1.4	3.6				17.3	13				
Do	Klamath Falls	Comm	1942	56870	do	Basalt		2.76	.2				53,300		15				
Do	do	do	1942	56871	do	do					16.6	B							
Do	do	do	1942	56879	do	do		2.74	.4		19.5	B	36,300		14				
Do	do	do	1944	66848	do	do		2.72	1.4		13.4	B						2.0	¾–#4

Do	do	do	1944	67115	do	do		2.71	1.3		17.6	B						2.5	1–#4
Lane	Eugene	Prosp	1904	980	do	do		2.70	1.4	5.9					7.9	7			
Do	do	do	1904	982	do	do [6]		2.95	.4	2.8					10.7	6			
Do	do	Comm	1942	56862	Gravel [14]	BRAn		2.65	.9				37,320			16			
Do	do	do	1942	56863	do	do					17.6	B							
Lincoln	Otis	Prosp	1928	30283	Stone	Basalt tuff		2.27	3.6	7.0					4.7	6			
Linn	Harrisburg (Willamette River).	Comm	1942	56881	Gravel	BRAn					16.6	B							
Do	do	do	1944	66701	do	BAnRFe	1	2.58	2.1		16.4	B						8.8	1–#4
Malheur	Nyssa	Local	1945	67091	do	GSB	2											5.6	1½–#4
Marion	Jefferson (Santiam River).	do	1922	22612	do	AnBR	3			3.9		A							
Do	Salem	do	1906	1766	Stone	Basalt		2.80	.5	3.9					18.0	38			
Do	do	Comm	1942	56885	Gravel	do					17.7	B							
Do	do	do	1942	59607	do	BAnR	1½	2.53	2.6		20.0	B							
Multnomah.	Portland	Prosp	1904	1136	Stone	Basalt		2.60	1.4	6.8					15.8	20			
Do	do	do	1904	1137	do	do		2.75	1.2	3.8					16.4	26			
Do	do	Comm	1941	54788	Gravel	QzBFeG	2½	2.70	1.2		16.9	A							
Do	do	do	1941	55222	Stone	Basalt		2.75	.1				59,780			26			
Do	do	do	1941	55223	do	do					13.5	B							
Do	do	do	1942	56868	Gravel [14]	AnRB		2.74	.2				48,930			19			
Do	do	do	1942	56869	do	AnRB					16.0	B							
Do	do	do	1942	56886	do	Basalt					13.8	B							
Do	do	do	1942	59162	do	B(QR)	1½	2.68	1.8		13.3	B							
Do	do	do	1942	59605	do	BR(Qz)	1	2.61	2.1		14.3	B							
Do	do	do	1943	61961	do	BR	1	2.68	1.0		14.1	B							
Do	Troutdale	Local	1904	1135	Stone	Basalt		2.70	1.4	3.7					16.0	19			
Polk	Independence	Comm	1942	56880	Gravel	BAnFe					18.4	B							
Tillamook	Tillamook	do	1942	56875	do	Basalt					17.5	B							
Umatilla	Pendleton	Local	1907	2070	Stone	do		2.85	1.2	2.1					17.9	20			
Do	Umatilla	Comm	1944	66645	Gravel	GBRQQz	1	2.72	.9		14.6	B						1.3	1–#4
Union	LaGrande	Prosp	1921	18224	Stone	Basalt		2.80	.9	3.4					18.7	18			
Washington.	Hillsboro	do	1909	3758	do	do		2.70	1.1	4.3					17.2	12			
Do	do	do	1911	5354	do	do		2.65	.8	4.2					17.9	15			
Yamhill	Dayton	Comm	1942	56889	Gravel	TBAn					15.0	B							
Do	Newberg	Prosp	1905	1454	Stone	Basalt		2.75	1.0						18.4	30			

PENNSYLVANIA

Adams	Abbottstown	Prosp	1907	1950	Stone	Sandstone		2.60	0.5	3.2					18.9	8			
Do	Berwick Township.	Local	1906	1612	do	Quartzite		2.60	.4	4.0					18.3	5			
Do	Bittinger	Comm	1905	1177	do	Limestone		2.75	.1	4.9					14.2	9			
Do	do	Local	1905	1178	do	Feldspathic sandstone.		2.70	.6	3.7					12.2	7			
Do	do	Comm	1935	42168	do	Limestone				4.9						3			
Do	do	do	1935	42320	do	Dolomite				3.9						6			
Do	do	do	1935	42321	do	do				3.1						14			
Do	do	do	1935	42322	do	Limestone				5.0						4			
Do	Cumberland Township.	Local	1907	2244	do	Diabase		3.00	.5						18.6	24			
Do	do	Prosp	1907	2245	do	Sandstone		2.45	1.9						17.1	12			
Do	do	do	1908	2549	do	Limestone		2.65	.8	2.0					17.2	25			
Do	Flora Dale	do	1907	2171	do	Basalt [6]		2.90	.6	2.0					18.2	9			
Do	Gettysburg	Local	1936	42937A	do	Argillaceous sandstone.				4.9	23.9	A				12		S	1½–1
Do	do	do	1936	42937B	do	Slate				1.8	11.5	A				32		S	1½–1
Do	Granite	Prosp	1913	6881	do	Diabase		3.10	.1	2.5					17.9	8			
Do	do	do	1915	8705	do	do		3.05	.2	3.8					18.7	12			
Do	do	do	1915	9786	do	do							23,440		15.2	14			
Do	Lime Rock Siding.	Comm	1912	6089	do	Marble		2.70	.2	5.8					13.3	3			
Do	do	do	1914	7499	do	do		2.70	.2	5.1					11.0	6			
Do	do	do	1914	7670	do	Siliceous limestone.		2.85	.1	3.5					17.7	9			
Do	Littlestown	Prosp	1905	1483	do	Slate		2.70	.9						11.1	12			
Do	do	do	1905	1486	do	do		2.65	1.3						1.1	7			
Do	do	Comm	1935	40855	do					5.3	27.9	A				6			
Do	Menallen Township.	Prosp	1906	1814	do	Rhyolite		2.65	.1	2.0					19.6	42			
Do	do	do	1906	1815	do	do		2.60	.2	1.9					19.5	34			
Do	Midway	do	1907	1949	do	Chlorite schist		2.90	.6	6.6									
Do	do	Local	1912	6064	do	Marble		2.70	.1	4.0					14.7	8			
Do	do	do	1912	6069	do	Limestone		2.80	.1	4.1					16.0	7			

[6] Altered. [14] Gravel boulders.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

PENNSYLVANIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Adams	Oxford Township.	Local	1906	1611	Stone	Dolomite		2.75	0.2	3.9				17.7	16				
Do	York Springs	do	1920	16012	do	Diabase		3.03	.3	1.8				18.7	34				
Do	Zora	Comm	1935	40959	do					3.9	21.0	A			13				
Allegheny	Carnegie	Prosp	1919	14382	Slag	Smelter		3.82	.2	4.3				17.3	14				
Do	Coraopolis	do	1907	2180	Stone	Limestone		2.65	.5	5.9				16.7	12				
Do	Duquesne	Comm	1908	2447	Slag	Blast furnace		2.10	3.4	6.4									
Do	do	do	1917	11332	do	do		2.13	4.1	4.5			14,200	15.7	7				
Do	do	do	1921	18729	do	do		2.24	2.7	13.7									
Do	do	do	1937	44343	do	do					31.9	A				84	1½–#4		
Do	do	do	1937	44344	do	do					35.3	A				73	1½–#4		
Do	Munhall	do	1909	3168	do	Smelter		3.30	1.0	4.9									
Do	Oakdale	Prosp	1907	2118	Stone	Limestone		2.75	.2	4.2				16.4	7				
Do	do	Comm	1925	27386	Gravel	Sandstone		2.60	1.2	12.3		A							
Do	do	do	1932	34559	do	SCQz												U	2–#4
Do	Pittsburgh	Prosp	1904	1072	Stone	Limestone		2.70	.1					17.0	13				
Do	do	do	1907	2152	do	do		2.75	.4					16.6	9				
Do	do	Comm	1908	3112	Slag	Blast furnace		2.55	.4	3.6									
Do	do	Prosp	1911	5546	Stone	Limestone		2.70	.2	4.5				15.3	3				
Do	do	do	1913	6686A	do	Slate		2.75	.2					19.0	29				
Do	do	do	1913	6686B	do	Pyroxene gneiss		2.90	.2					18.1	8				
Do	do	Comm	1937	43177	Gravel	SQQzCG					28.1	B						[12] 12.3	1½–#4
Do	do	do	1945	67697	do	SQzG(LC)					33.7	B						[12] 7.9	1½–#4
Do	do	do	1945	67698	do	SQzL(CGnQ)												[12] 10.2	1½–#4
Do	do	do	1945	68775	do	SL(QzG)					30.8	A						[12] 5.1	1½–#4
Do	do	do	1945	68778	do	SQ(LCG)					29.6	B						[12] 9.5	1½–#4
Do	do	do	1945	68780	do	SLQ					30.3	B							
Do	Pittsburgh (Allegheny River).	do	1933	34799	do	Sandstone				7.8	34.4	A							
Do	do	do	1935	42178	do	do					51.3	A							
Do	do	do	1935	42179	do	S(QC)					30.8	A						[12] 14.2	1½–#4
Do	do	do	1945	67858	do	SQzL(G)					26.4	B						[12] 6.3	1½–1½
Do	do	do	1945	67859	do	SQzL(G)												[12] 7.4	1–#4
Do	do	do	1945	68769	do	LSG(Q)					26.3	A						[12] 6.6	1–#4
Do	do	do	1945	68770	do	SL(CQzG)					27.1	A							
Do	Sewickley Township.	Prosp	1910	4877	Stone	Siliceous limestone.		2.70	.7	3.8				14.1	12				
Do	do	do	1910	4878	do	Limestone		2.75	.2	4.5				14.3	11				
Armstrong	Apollo	do	1909	3723	do	do		2.70	.3	5.1				14.8	6				
Do	do	do	1910	4671	do	do		2.70	.1	6.3				15.8	6				
Do	Craigsville	do	1908	2551	do	do		2.75	.3	4.7				16.2	7				
Do	East Brady	do	1908	2552	do	do		2.65	.6					15.5	7				
Do	Ford City	do	1905	1357	do	do		2.70	.2	5.0									
Do	do	do	1905	1358	do	do		2.70	.4	4.0				16.4	17				
Do	Freeport	do	1908	2906	do	Siliceous limestone.		2.70	.4	2.9				16.6	9				
Do	Kittanning	do	1907	2096	do	Limestone		2.65	.7	4.8				15.5	8				
Do	do	do	1907	2159	do	do		2.65	.7	4.1				15.0	7				
Do	do	do	1907	2296	do	do		2.70	.2	4.9				15.7	8				
Do	do	do	1908	2696	do	do		2.65	.5	4.8				16.4	9				
Do	Parkers Landing.	do	1920	16077	do	do		2.59	.6	4.2			19,470	15.3	6				
Do	Worthington	Comm	1950	81495	do	do					23.4	C							
Do	do	do	1950	81926	do	do					23.5	B							
Beaver	Beaver	Prosp	1908	2716	do	do		2.70	.4	6.7				14.7	6				
Do	Midland	Comm	1943	61476	Slag	Blast furnace					35.6	B							
Bedford	Bedford	Local	1907	2066	Stone	Limestone		2.70	.4	4.3				16.5	7				
Do	Bloomfield Township.	Prosp	1907	2194	do	Quartzite		2.50	.9	4.6				17.4	9				
Do	Hyndman	do	1909	3851	do	Limestone		2.75	.3	3.4				17.2	15				
Do	do	Comm	1911	5602	do	do		2.70	.1	2.9			24,150	14.3	6				
Do	do	do	1911	5603	do	Siliceous limestone.		2.70	.1	4.1			21,860	16.5	10				
Do	do	do	1935	40911	do	Limestone				3.7	22.1	A			10				

Do	South Woodbury Township.	Prosp	1907	2330	do	Dolomitic limestone.		2.70	.3	4.2								
Do	do	do	1907	2331	do	Dolomite		2.85	.5	3.4				15.8	11			
Do	Waterside	Local	1908	2752	do	Limestone		2.75	.2	3.5				16.7	10			
Berks	Bally	Prosp	1907	2248	do	Diabase		3.00	.2	2.7				18.2	10			
Do	Barto	do	1907	2033	do	Diorite [6]		3.35	.3	2.3				18.7	16			
Do	do	Local	1914	8242	do	do [6]		3.15	.2	2.4				19.0	12			
Do	do	do	1914	8243	do	Granite [1]		2.60	.5					19.0	10			
Do	Bechtelsville	Prosp	1911	5573	do	Gabbroitic diabase.		2.95	.4	3.9				18.3	12			
Do	Birdsboro	Comm	1907	1947	do	Diabase		2.95	.4	1.9				18.0	12			
Do	do	do	1909	3434	do	Gabbro		3.00	.2	1.5				18.6	9			
Do	do	Prosp	1909	3435	do	do		2.95	.4	1.8				18.6	23			
Do	do	Comm	1909	3517	do	do									14			
Do	do	do	1911	5585	do	Diabase		2.95	.1	2.0				18.0	26			
Do	do	do	1911	5626	do	do		3.00	.2	2.4				18.8	17			
Do	do	do	1911	5632	do	do		2.95	.2	2.0			39,220	18.2	21			
Do	do	do	1912	6359	do	Gabbroitic diabase.		2.95	.2	2.0				17.5	21			
Do	do	do	1915	8786	do	do		2.95	.3	3.6				17.9	10			
Do	do	do	1916	10104	do	Diabase		3.02	.2	1.7				18.7	13			
Do	do	do	1919	14468	do	do		3.01	.2					18.7	10			
Do	do	do	1921	18863	Slag	Blast furnace		2.26	2.3	9.5								
Do	do	do	1924	24547	do	do		1.78	6.9	20.0								
Do	do	do	1926	28155	Stone	Diabase		2.97	.1	3.1				18.7	20			
Do	do	do	1929	32272	Slag	Blast furnace		2.47	4.8	12.2						87		
Do	do	do	1935	40999	Stone	Diabase				3.0	18.7	A			15			
Do	do	do	1938	46051	do	do		2.97	.2		21.1	A						
Do	do	do	1941	55304	do	do					17.1	B						
Do	do	do	1941	55305	do	do		2.98	.3				42,910		16			
Do	do	do	1943	61647	do	Gabbroitic diabase.		3.03	.3		15.8	B						
Do	Clingan	do	1917	12132	do	do		2.99	.1	3.9				18.7	16			
Do	do	do	1917	12140	do	Diabase		2.97	.2	3.7				18.7				
Do	Douglass Township.	Local	1909	3167	do	Sandstone		2.80	.4	2.5				17.3	38			
Do	do	Prosp	1919	14642	do	Slate [6]		2.73	.2	1.9				18.7	28			
Do	Douglassville	do	1911	5569	do	Ferruginous sandstone.		2.70	.3	1.6				19.2	35			
Do	do	do	1914	7413	do	Basalt breccia [6]		2.70	.7	1.4				19.3	34			
Do	do	do	1914	7414	do	Diabase		3.00	.2	2.8				18.5	19			
Do	Lyon Station	do	1914	7610	do	Chert [1]		2.50	1.7	5.4								
Do	Monocacy	Comm	1905	1365	do	Gabbro		3.00	.1	1.6				18.2	17			
Do	do	do	1908	2659	do	do		2.95	.4	2.4				18.6	19			
Do	do	do	1908	2660	do	do [6]		2.90	.4	3.9								
Do	do	do	1908	2661	do	do		3.05	.2	2.3				18.2	12			
Do	Oley	Prosp	1911	5720	do	Ferruginous sandstone.		2.50	1.5	1.8				18.2	35			
Do	Pine Forge	Local	1907	2192	do	Slate		2.75	.3	1.6				18.4	40			
Do	do	Prosp	1909	3121	do	Clayey slate		2.70	.2	2.0				18.8	56			
Do	do	do	1909	3122	do	Argillaceous sandstone.		2.55	2.2	2.0				18.7	36			
Do	Reading	Local	1909	3385	do	Dolomite		2.70	.1	3.6				16.2	11			
Do	do	Prosp	1911	5361	do	Hornblende granite.		2.75	.6	2.0				18.3	24			
Do	do	Local	1915	8985	do	Argillaceous dolomite.		2.70	.2	3.3				17.7	5			
Do	do	Prosp	1915	9615	do	Dolomite		2.85	.2	5.7								
Do	Seisholtzville	Local	1907	1983	do	Granite		2.70	.2	3.2				18.0	18			
Do	Temple	Comm	1921	18862	Slag	Blast furnace		1.83	7.1	18.8								
Do	Tuckerton	do	1921	18221	Stone	Siliceous limestone.		2.73	.1	3.7				15.7	10			
Blair	Allegheny Township.	Local	1908	2432	do	Limestone		2.70	.2	4.9				13.7	5			
Do	Altoona	Prosp	1907	2034	do	do		2.70	.4	5.4				11.3	8			
Do	do	Local	1907	2384	do	do		2.70	.2	3.2				14.2	6			
Do	do	do	1907	2406	do	do		2.70	.2	2.8				16.7	11			
Do	do	do	1907	2407	do	do		2.70	.5	4.3				15.3	6			
Do	do	do	1917	12224	do	Argillaceous limestone.		2.69	.3	6.6				11.6	6			
Do	Catherine Township.	do	1908	2421	do	Siliceous limestone.		2.70	.3	3.6				16.7	22			
Do	El Dorado	Comm	1909	3745	do	Dolomite		2.85	.2	3.3				16.8	10			
Do	Hollidaysburg	Prosp	1906	1601	do	Sandstone		2.60	.4	2.3				18.5	12			
Do	do	Comm	1908	2482	do	Dolomite		2.75	.5	3.3				17.2	10			
Do	do	do	1908	2483	do	Limestone		2.75	.3	3.7				17.3	20			
Do	do	do	1908	2484	do	do		2.75	.5	3.0				17.1	16			

[1] Weathered. [6] Altered. [12] 20 cycles, freezing and thawing; loss determined with half-size sieves.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

PENNSYLVANIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Blair	Juniata	Local	1915	8724	Stone	Crystalline limestone.		2.70	0.2	5.9			15,430	13.7	4				
Do	do	do	1915	8725	do	Argillaceous limestone.		2.70	.3	5.9			20,880						
Do	Tyrone	do	1908	2492	do	Dolomite		2.85	.2	3.1				16.5	10				
Do	do	Prosp	1918	13129	do	Sandstone		2.57	.1	3.3				18.7	12				
Do	do	Local	1920	15989	do	Chert				3.0									
Bradford	Camptown	Prosp	1908	3080	do	Limestone		2.70	.4	4.2				15.2	8				
Do	East Smithfield	do	1914	7730	do	Fossiliferous limestone.		2.70	.2	6.8				15.7	10				
Do	Sheshequin Township.	do	1909	3715	do	Limestone		2.70	.1	6.7				16.0	10				
Do	do	do	1909	3716	do	do		2.65	.2	5.3				16.8	11				
Do	Towanda	do	1923	23530	do	Argillaceous limestone.		2.70	.6	4.9				15.3	7				
Do	Wells	do	1907	2068	do	Siliceous limestone.		2.70	.4	3.5				15.9	14				
Do	do	do	1907	2069	do	Feldspathic sandstone.		2.65	.5					17.2	25				
Do	Wyalusing	do	1908	2419	do	Limestone		2.70	.4	4.3				15.2	7				
Do	do	do	1908	2535	do	do		2.70	.2	3.7				16.3	4				
Do	do	do	1908	2541	do	Dolomite		2.70	.4	4.7				17.9	22				
Do	Wysox Township.	do	1908	3097	do	Calcareous sandstone.		2.65	.5	2.9				17.3	9				
Do	do	do	1909	3119	do	Siliceous limestone.		2.70	.5	3.9				16.0	9				
Do	do	do	1909	3120	do	do		2.70	.3	3.1				16.7	12				
Do	do	do	1909	3123	do	Limestone		2.70	.2	5.3				14.3	7				
Do	do	do	1909	3719	do	do		2.70	.1	3.7				17.8	16				
Do	do	do	1909	3802	do	do		2.70	.1	3.3				17.0	13				
Bucks	Bensalem Township.	Local	1904	979	do	Mica-hornblende schist.		2.85	.1	2.9				16.4	27				
Do	do	do	1904	1000	do	Mica schist		2.75	.1	4.1				17.5	13				
Do	Bridge Valley	Prosp	1905	1245	do	Argillaceous sandstone.		2.70	.6	2.8				17.5	26				
Do	do	do	1905	1246	do	Sandstone		2.45	2.0	2.7				16.6	20				
Do	do	do	1906	1565	do	Slate		2.70	.3	4.2				17.3	11				
Do	Edison	Local	1907	2064	do	Shale		2.70	.3	3.2				17.7	12				
Do	Lahaska	Prosp	1911	5408	do	Gabbroitic diabase.		2.95	.1	2.0				18.5	16				
Do	Morrisville (Delaware River).	Comm	1925	27417	Gravel	SQCG		2.56	1.0	6.3		A							
Do	do	do	1927	29698	do	SQR				6.0		A							
Do	do	do	1932	34749	do	SQC				5.5	29.3	A							
Do	do	do	1932	34750	do	SQGn				15.2	34.6	A							
Do	do	do	1935	40771	do	Sandstone					33.8	B							
Do	do	do	1935	40772	do	do				9.6	32.4	A							
Do	do	do	1936	42613	do	SQC				14.2	37.1	B							
Do	do	do	1936	42615	do	SQzCQ				8.7	26.6	A							
Do	do	do	1936	42616	do	SQC				5.8	27.2	B							
Do	do	do	1937	43163	do	SQCGD					28.7	A							
Do	do	do	1938	46052	do	QCSQz		2.57	1.0		28.1	A							
Do	do	do	1938	46341	do	QQzSDiSl					25.8	B							
Do	do	do	1943	61640	do	QGSQzB	1	2.57	1.5		29.8	B							
Do	do	do	1945	67525	do		1½				27.2	A							
Do	do	do	1945	68773	do	QSG (DBQz)	2				26.6	A						[12]4.1	2–#4
Do	New Hope	Prosp	1911	5386	Stone	Diabase		2.95	.2	2.2				18.5	22				
Do	Newtown	do	1910	4929	do	Indurated sandstone.		2.70	.3	3.6				18.4	27				
Do	Perkasie	Comm	1929	32242	do	Slate		2.66	.6	2.7			37,810	15.3	26				
Do	Quakertown	do	1907	2323	do	Gabbro		3.00	.2	1.7				18.6	15				
Do	do	Prosp	1917	11409	do	Diabase							34,040	18.0	10				
Do	do	Comm	1917	12166	do	Hypersthene diabase.		3.07	.1	2.8				18.3	25				
Do	Rockhill	do	1903	731	do	Diabase		3.10	.1	1.2									

Do	do	Prosp	1908	2742	do	Gabbro		3.05	.1	1.9				18.8	21				
Do	do	do	1915	8660	do	Hypersthene diabase.		3.05	.2	3.7									
Do	do	Comm	1920	15987	do	do				2.3									
Do	do	do	1923	24267	do	Diabase		3.05	.2	2.0			40,640	18.7	17				
Do	do	do	1934	40653	do	do				2.2					16				
Do	do	do	1934	40740	do	do					21.4	B							
Do	do	do	1934	40773	do	do		3.02	.3	2.7					13				
Do	Rushland	do	1904	1038	do	Limestone		2.70	.3	2.3				17.0	20				
Do	do	Local	1913	7277	do	Siliceous limestone.		2.75	.2	2.5				17.5	22				
Do	Shelly	Comm	1909	3200	do	Diabase		3.00	.2	2.4				18.3	19				
Do	do	do	1922	22675	do	do		3.00	.2	2.4			[36,090]	18.7	11				
Do	Yardley	Prosp	1917	11733	do	Granite gneiss		2.66	.1	4.0			16,330	18.3	15				
Butler	Annandale	Comm	1950	80477	do	Limestone					22.2	A							
Do	West Winfield	do	1908	2727	do	do		2.70	.1	3.7				16.1	16				
Cambria	East Taylor Township.	Prosp	1908	2894	do	Calcareous sandstone.		2.70	.2	2.8				17.5	11				
Do	Johnstown	do	1911	5221	do	Limestone		2.70	.2	2.8				16.8	14				
Do	do	Local	1918	12908	do	Sandstone		2.44	1.0	7.4				15.3	9				
Do	do	do	1918	13174	do	do		2.45	.2	6.7				18.3	8				
Do	do	Comm	1919	14150	Slag	Open hearth		2.98	1.1	11.0					7				
Do	do	do	1919	14151	do	Blast furnace		2.05	5.4	18.9					4				
Do	Mundys Corner	Local	1918	13178	Stone	Sandstone		2.44	.2	8.2				16.7	7				
Carbon	East Mauch Chunk.	Prosp	1907	2267	do	Quartzite		2.70	.2	2.4				19.3	15				
Do	Hazard	Local	1915	8625	Slag	Smelter(?)		2.85	1.2	6.6			8,800	17.3	6				
Do	Lehigh Gap	Prosp	1917	12477	Stone	Quartzite		2.64	.3	3.3				18.7	17				
Do	do	do	1917	12478	do	Feldspathic quartzite.		2.87	.2	2.8				18.7	16				
Do	Palmerton	Comm	1908	2622	Slag	Blast furnace		2.70	2.1	12.2				15.0	8				
Do	do	do	1913	7371	do	do		2.30	3.4	12.2				15.3	7				
Do	do	do	1919	14111	do	do		1.96	6.1	13.1									
Do	Summit Hill	Prosp	1917	11261	Stone	Feldspathic sandstone.		2.61	.5	4.7			15,090	18.0	10				
Do	White Mill	do	1914	7424	do	Feldspathic quartzite. [12]		2.65	.2	2.6				18.8	13				
Centre	Bellefonte	Local	1905	1163	do	Limestone		2.70	.2	5.8				16.3	11				
Do	do	do	1907	2251	do	do		2.70	.3	3.7				14.7	6				
Do	do	do	1908	2431	do	do		2.70	.3	4.5				13.6	6				
Do	do	Prosp	1913	6766	do	Calcareous sandstone.		2.65	.4	4.5				15.3	7				
Chester	Aldham	do	1908	2695	do	Granite [6]		2.70	.1	1.8				18.5	26				
Do	Atglen	do	1907	1955	do	Quartzite schist		2.65	.3	3.0				18.7	7				
Do	Avondale	do	1908	2710	do	Crystalline limestone.		2.75	.2	13.2				14.0	3				
Do	do	do	1908	2711	do	Quartzite		2.65	.1	7.1									
Do	do	Comm	1908	2712	do	Marble		2.75	.2	4.5				14.7	5				
Do	do	Local	1908	2713	do	Biotite gneiss		2.60	.3	5.6				17.7	7				
Do	Cedar Hollow	Comm	1901	339	do	Dolomite		2.85	.1	3.8									
Do	do	do	1909	3757	do	do		2.85	.1	4.5				16.3	8				
Do	do	Local	1912	6110	do	Dolomitic marble		2.80	.2	4.7				16.0	10				
Do	Coatesville	Prosp	1904	964	do	Marble		2.85	.1	3.8				15.9	9				
Do	do	Local	1904	965	do	Limestone		2.80	.1	3.7				15.4	9				
Do	do	Prosp	1906	1546	do	Hornblende gneiss		3.05	.6	3.1				16.6	8				
Do	do	Comm	1911	5344	do	Marble		2.76	.1	5.9				11.8	5				
Do	do	do	1924	24510	Slag	Blast furnace		1.77	7.3	19.3									
Do	Cornog	do	1913	6877	Stone	Amphibolite		3.00	.1	3.2				15.6	8				
Do	do	do	1913	6924	do	Hornblende schist		3.05	.1	2.1				18.8	30				
Do	Devault	do	1919	14943	do	Dolomitic marble		2.83	.4	7.7				14.0	5				
Do	do	do	1921	19087	do	Dolomite		2.84	.3	4.0				14.0	8				
Do	do	do	1924	26142	do	Hornblende granite.		2.75	.6	3.4			31,060	18.7	10				
Do	do	do	1924	26143	do	Dolomite		2.85	.1	5.0			39,250	15.3	10			S	1½–1
Do	do	do	1928	30779A	do	Hornblende gneiss		2.95	.1	3.7				18.7	21				
Do	do	do	1928	30779B	do	Biotite-hornblende gneiss.		2.78	.1	2.7				18.7	22				
Do	do	do	1936	43095	do	Dolomite				4.5									
Do	do	do	1938	46053	do	do		2.83	.3		35.3	A							
Do	do	do	1943	61646	do	Hornblende granite.		2.78	.2		23.8	B							
Do	Dorlan	Prosp	1915	9068	do	Sericite gneiss		2.65	.1	3.5				18.7	13				
Do	Downington	do	1913	6866	do	Biotite gneiss		2.65	.2	4.1				18.2	6				
Do	do	do	1913	6972	do	Diorite [6]		3.00	.1	2.8				17.8	9				
Do	East Whiteland Township.	Local	1904	1076	do	Dolomite		2.85	.1	4.2				14.9	7				
Do	do	do	1904	1077	do	Dolomitic limestone.		2.85	.2	3.9				15.7	7				
Do	Exton	do	1909	3355	do	Dolomite		2.85	.3	4.2				16.3	9				

[6] Altered.

[12] 20 cycles, freezing and thawing; loss determined with half-size sieves.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

PENNSYLVANIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Chester	Glenmoore	Local	1906	1682	Stone	Diabase [6]		3.10	0.2	2.2				19.0	36				
Do	do	do	1906	1683	do	do.[6]		3.00	.5	4.5				18.4	8				
Do	do	do	1907	2043	do	do		3.00	.4	2.3				19.0	32				
Do	do	do	1907	2044	do	Diabase porphyry [6]		3.00	.2	1.7				19.0	33				
Do	do	do	1907	2045	do	do.[6]		3.00	.3	2.1				18.7	32				
Do	do	Prosp	1909	3345	do	Hornblende gneiss		3.05	.1	3.4				18.3	15				
Do	Howellville	Comm	1909	3540	do	Marble		2.80	.1	4.2				13.0	8				
Do	do	do	1919	14294	do	do		2.77	.2	4.3									
Do	do	do	1921	17919	do	do		2.80	.2	4.6				14.0	5				
Do	do	do	1921	17920	do	do				3.6									
Do	do	do	1924	24525	do	Dolomitic marble		2.76	.1	5.7				12.3	4				
Do	Knickerbocker	do	1909	3746	do	Limestone		2.75	.2	4.0				17.1	15				
Do	do	do	1914	7427	do	Dolomitic marble		2.85	.1	2.9				14.9	8				
Do	do	do	1924	24511	do	Dolomite		2.84	.3	4.1				15.3	7				
Do	Malvern	Prosp	1909	3133	do	Sericite schist		2.80	.6	18.2									
Do	Phoenixville	do	1909	3406	do	Siliceous limestone.		2.70	.5	3.0				17.2	14				
Do	do	do	1913	6885	do	Feldspathic sandstone.		2.90	.2	2.0				18.8	44				
Do	Saint Peters	do	1905	1172	do	Gabbro		3.05	.2	1.3				18.7	17				
Do	do	do	1905	1333	do	Feldspathic sandstone.		2.75	.2	5.6				18.0	27				
Do	Spring City	Local	1905	1308	do	do		2.50	1.1	3.8				18.1	15				
Do	Valley Forge	Comm	1915	8423	do	Feldspathic quartzite.		2.70	.2	3.5				19.3	8				
Do	Wawaset	Prosp	1907	1957	do	Eclogite		3.15	.1	2.6				18.7	14				
Do	West Grove	Local	1909	3349	do	Crystalline limestone.		2.75	.2	4.2				13.8	6				
Do	do	do	1909	3424	do	Mica schist		2.75	.2	3.8				16.8	10				
Do	Whitford	do	1914	8244	do	Quartzite		2.65	.2	3.0									
Clarion	Fryburg	Prosp	1908	2792	do	Limestone		2.70	.2	4.7				15.5	6				
Do	Leeper	do	1906	1712	do	do		2.70	.2	4.4				14.5	23				
Clinton	Lamar Township	Local	1909	3788	do	do		2.70	.1	5.0				15.9	10				
Do	Lock Haven	Comm	1907	2093	do	do		2.70	.4	4.5				13.8	8				
Do	do	Prosp	1907	2094	do	do		2.70	.8	6.5				8.4	4				
Do	Salona	Comm	1908	2575	do	do		2.70	.2	5.6				15.0	5				
Do	do	do	1911	5578	do	Argillaceous limestone.		2.70	.0	4.3			18,710	15.3	8				
Columbia	Berwick	Prosp	1912	6413	do	Calcareous slate		2.75	.3	10.0				7.3	10				
Do	do	do	1918	12767	do	Sandstone		2.64	.2	4.8				18.7	14				
Do	Catawissa	do	1908	2599	do	Feldspathic sandstone.		2.70	.3	2.7				18.9	12				
Do	do	do	1917	12181	do	do		2.68	.2	2.8				19.3	17				
Do	do	do	1917	12186	do	do		2.67	.2	3.2				19.3	25				
Do	Espy	Comm	1914	7807	do	Argillaceous dolomite.		2.80	.4	4.0				15.6	14				
Do	Limeridge	Local	1905	1313	do	Limestone		2.70	.2	3.6				16.3	16				
Do	do	do	1921	18677	Gravel	do	2			[11] 2.4									
Cumberland	Bowmansdale	Prosp	1907	2086	Stone	do		2.70	.2	4.1				17.2	10				
Do	Carlisle	Local	1915	9354	do	do		2.70	.3	7.1				15.7	10				
Do	Dickinson Township.	Prosp	1912	6281	do	do		2.75	.2	5.2				15.0	8				
Do	Lemoyne	do	1907	2065	do	do		2.75	.2	3.4				17.4	9				
Do	do	Comm	1924	25192	do	do		2.78	.2	4.2				18.3	12				
Do	Mechanicsburg	Local	1908	2448	do	do		2.75	.1	3.4				16.1	8				
Do	do	Prosp	1913	7034	do	Siliceous marble		2.70	.1	5.5				15.2	2				
Do	Silver Spring Township.	do	1908	2890	do	Diabase		3.00	.3	1.6				18.7	28				
Do	West Fairview	do	1906	1734	do	Calcareous sandstone.		2.70	.2	3.6				15.7	17				
Do	do	Local	1907	2004	do	Feldspathic sandstone.		2.70	.1	4.1				17.2	11				
Do	do	Prosp	1907	2349	do	do		2.70	.3	2.9				17.4	11				
Do	do	Local	1909	3380	do	Calcareous sandstone.		2.75	.1	4.2				17.0	14				

Dauphin	Conewago	do	1912	5813	do	Diabase		3.05	.1	4.1				18.3	17						
Do	do	do	1912	6453	do	do		3.10	.2	2.1				18.2	15						
Do	do	Comm	1917	12361	do	do		3.02	.2	2.8				18.0	20						
Do	Fort Hunter	Local	1904	1003	do	Sandstone		2.65	.3	2.5				17.9	21						
Do	Harrisburg	do	1907	2173	do	Dolomite		2.75	.3	4.2				18.0	13						
Do	do	do	1907	2174	do	do		2.80	.1	2.9				17.9	12						
Do	do	Prosp	1908	2784	do	Calcareous sandstone.		2.70	.2	3.5				15.2	13						
Do	Hershey	Local	1915	8306	do	Limestone		2.70	.3	5.5				14.2	2						
Do	High Spire	do	1907	2383	do	do		2.70	.4	3.9				13.3	6						
Do	Hummelstown	Prosp	1912	6104	do	Calcareous sandstone.		2.70	.3	4.2				16.0	19						
Do	do	Local	1913	7295	do	Dolomitic limestone.		2.80	.3	3.7				17.7	7						
Do	do	do	1915	8720	do	do		2.85	.1	4.1				17.3	10						
Do	Londonderry Township.	Prosp	1907	2051	do	Diabase		3.05	.1	2.3				18.7	17						
Do	Paxtang	Local	1906	1894	do	Limestone		2.75	.1	3.2				17.3	14						
Do	Rockville	do	1912	5902	do	Quartzite		2.70	.3	2.2				19.1	20						
Do	do	do	1912	5903	do	Sandstone		2.45	5.7	5.6				18.7	7						
Do	do	do	1912	5904	do	Quartzite		2.65	.2	2.4				19.3	23						
Do	do	do	1912	5905	do	Feldspathic sandstone.		2.65	.4	2.2				17.8	26						
Do	Steelton	do	1905	1395	do	Dolomite		2.35	.2	4.2				18.3	18						
Do	do	Comm	1939	46571	do	Limestone		2.77	.2		24.7	A								S	1¼–1
Do	do	do	1950	80476	do	do					22.7	A									
Delaware	Glen Mills	do	1900	254	do	Eclogite				2.8											
Do	do	do	1904	998	do	do		3.00	.1	1.8											
Do	do	do	1906	1780	do	Hornblende schist		3.20	.1	2.7				18.7	24						
Do	do	do	1908	2626	do	Diorite		3.10	.2	2.2				17.0	12						
Do	do	do	1908	2800	do	Pyroxene quartzite.		3.05	.1	2.0				18.5	22						
Do	do	do	1909	4042	do	Eclogite		3.10	.1	1.9				18.5	28						
Do	do	do	1912	5970	do	Pyroxene quartzite.		3.15	.1	1.9				18.3	18						
Do	do	do	1924	24524	do	do		2.94	.1	2.3				18.7	7						
Do	do	do	1926	28154	do	Quartz-biotite schist.		2.80	.1	3.3				18.0	15						
Do	do	do	1934	40118	do	Quartzite		2.77	.2	4.4					9						
Do	do	do	1934	40119	do	do					26.5	A									
Do	do	do	1935	40841	do	do				2.1	22.6	A			21						
Do	do	do	1938	46048	do	do		2.88	.2		23.0	A									
Do	do	do	1938	46340	do	Pyroxene quartzite.					16.2	B									
Do	do	do	1943	61644	do	Hornblende schist		2.87	.3		22.2	B			15						
Do	Landsdowne	Prosp	1914	7751	do	do		3.00	.3	3.8				16.7	7						
Do	Lenni	Comm	1912	5827	do	Hornblende gneiss		2.90	.1	2.7				18.3	10						
Do	do	do	1914	7682	do	Biotite gneiss		2.75	.1	2.8				18.6	13						
Do	Llanerch	Local	1932	34682	do	Biotite schist				2.6											
Do	Marcus Hook	Prosp	1913	6949	do	Biotite gneiss		2.75	.1	4.2				18.1	18						
Do	Markham	Local	1937	44233	do	Gneiss		2.75	.2	2.3	23.1	A			16						
Elk	Daguscahonda	Comm	1912	5881	do	Feldspathic sandstone.		2.50	1.9	5.0				16.7	7						
Do	Kersey	Local	1905	1354	do	Limestone		2.75	.1	3.8											
Do	Saint Marys	Prosp	1912	5870	do	Argillaceous limestone.		2.70	.3	5.0				16.0	5						
Erie	Erie	Comm	1921	18866	Slag	Blast furnace		2.17	1.7	16.5											
Do	do	do	1930	33262	do	do		2.33		7.8							81				
Do	Fairview	do	1945	67909	Gravel	SLQ(GnC)					23.2	A							[12] 18.0	1–#4	
Fayette	Bidwell	Local	1912	6097	Stone	Limestone		2.70	.5	3.0			13,450	15.7	12						
Do	Brownsville	Prosp	1909	3161	do	do		2.70	.3	3.5				17.6	12						
Do	Casparis	Comm	1908	2612	do	do		2.70	.1	2.4				17.6	13						
Do	do	do	1909	4025	do	Calcareous sandstone.		2.70	.1	2.6				18.0	11						
Do	do	do	1922	21366	do	Siliceous dolomite		2.68	.1	2.7			31,090	15.0	14						
Do	do	do	1922	22710	do	Siliceous limestone.		2.66	.3	2.4				17.7	15						
Do	do	do	1924	24625	do	do		2.68	.2	3.1				17.5	9				S	1¼–1	
Do	Cheat Haven	Prosp	1924	24490	do	Feldspathic sandstone.		2.49	2.5	6.4			12,800	16.0	4						
Do	Connellsville	do	1913	6629	do	Siliceous limestone.		2.70	.0	2.5				16.3	18						
Do	do	Comm	1915	9347	do	Limestone		2.70	.3	3.2			26,050	17.3	12						
Do	do	do	1935	40962	do	do				2.5	23.4	A			13						
Do	do	do	1935	42002	do	do				3.4	26.4	A			8						
Do	Dunbar	Local	1907	1925	do	do		2.70	.2	2.3				18.3	14						
Do	do	do	1907	2028	do	do		2.70	.2	2.3				17.0	9						
Do	do	Prosp	1909	3853	do	do		2.70	.2	3.6				16.6	7						
Do	do	do	1911	5290	do	Siliceous limestone.		2.70	.2	2.4				17.1	15						

[6] Altered. [11] Tested by method for stone. [12] 20 cycles, freezing and thawing; loss determined with half-size sieves.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

PENNSYLVANIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Fayette	Dunbar	Comm	1921	18727	Slag	Blast furnace		2.08	4.9	14.5									
Do	Evans	Prosp	1909	3852	Stone	Limestone		2.70	1.3	3.1				15.5	17				
Do	Farmington	Local	1907	1956	do	do		2.70	.3	4.0				15.7	8				
Do	Fayette City	do	1909	3130	do	do		2.70	.1	5.5				16.3	4				
Do	Humberston	do	1907	1967	do	do		2.70	.2	2.6				16.0	8				
Do	Indian Creek	Prosp	1912	5771	do	Calcareous sandstone.		2.70	.2	3.3			37,740	17.0	17				
Do	Masontown	do	1907	2079	do	Limestone		2.70	1.4	3.9				16.5	9				
Do	do	do	1907	2080	do	Sandstone		2.50	2.0	10.1					3				
Do	Point Marion	Comm	1919	13993	do	Feldspathic sandstone.		2.43	3.5	10.3				11.0	6				
Do	Point Marion (Cheat River).	do	1933	34831	Gravel	Sandstone				28.4	64.8	A							
Do	do	do	1935	42121	do	do					82.4	A							
Do	do	do	1935	42141	do	do					58.8	A							
Do	do	do	1950	80517	do	do					54.0	A							
Do	Somerfield	Local	1907	2040	Stone	Limestone		2.70	.5	5.5				14.3					
Do	do	do	1907	2041	do	do		2.70	.4	3.1				15.9	9				
Do	do	do	1907	2226	do	do		2.70	.3	2.6				16.2	9				
Do	Uniontown	Prosp	1907	1941	do	do		2.70	.4	4.4				13.0	5				
Do	do	Local	1907	2228	do	do		2.70	.1	5.2				13.5	5				
Do	do	Prosp	1909	3789	do	Siliceous limestone.		2.70	.1	2.9				17.3	11				
Do	do	do	1909	3806	do	do		2.70	.2	3.4				17.8	11				
Do	do	do	1911	5692	do	Limestone		2.70	.1	3.5				15.7	7				
Do	do	Local	1915	9374	do	Siliceous limestone.		2.65	.1	3.0				18.2	11				
Do	do	do	1915	9402	do	do		2.70	.2	3.5				17.2	15				
Do	do	do	1916	9773	do	do		2.70	.3	2.8				17.7	13				
Forest	Loleta	Prosp	1948	76343	do	Conglomerate			1.3		66.0	A							
Do	Marienville	Local	1948	76341	do	Sandstone			3.1		83.8	A							
Do	do	do	1948	76342	do	do			2.7		71.1	A							
Do	do	do	1949	79464	do	do					61.5	A							
Do	do	do	1950	81036	do	do					65.5	A							
Do	do	do	1950	81924	do	do					73.0	A							
Franklin	Chambersburg	Comm	1934	40585	do	Argillaceous limestone.		2.71	.1	3.8					7				
Do	do	do	1934	40586	do	do		2.70	.1	5.0					5				
Do	do	do	1934	40587	do	do		2.71	.2	4.3					6				
Do	do	do	1934	40634	do	Siliceous limestone.									6				
Do	do	do	1934	40635	do	do									7				
Do	do	do	1934	40636	do	do									6				
Do	do	do	1934	40637	do	do									6				
Do	do	do	1934	40638	do	do									7				
Do	do	do	1934	40639	do	do									6				
Do	do	do	1934	40640	do	do									6				
Do	do	do	1934	40641	do	do									5				
Do	do	do	1934	40642	do	do									5				
Do	do	do	1935	40799	do	Argillaceous limestone.					27.0	A							
Do	Fayetteville	Prosp	1919	15199	do	Quartzite		2.55	.5	4.9				19.0	11				
Do	Guilford Township.	do	1908	2600	do	do		2.60	.2	4.3				19.2	9				
Do	Mercersburg	do	1909	3142	do	Limestone		2.70	.2	4.3				15.8	9				
Do	Montgomery Township.	do	1909	3141	do	Dolomite		2.85	.3	3.2				17.9	10				
Do	Richmond Furnace.	do	1908	2677	do	Limestone		2.80	.1	2.4				17.3	18				
Do	Waynesboro	Local	1907	2089	do	do		2.80	.4	3.6				17.5	9				
Huntingdon.	Birmingham	Prosp	1914	8005	do	Sandstone							34,830						
Do	Brady Township.	do	1907	2113	do	Limestone		2.70	.2	5.0				15.5	5				
Do	do	do	1907	2119	do	do		2.70	.3	4.1				15.3	5				
Do	do	do	1907	2120	do	Sandstone				6.5				18.5	5				
Do	do	do	1907	2121	do	do								16.7	7				

Do	do	Local	1907	2211	do	Limestone		2.70	.1	6.6				11.0	4			
Do	do	do	1907	2212	do	do		2.75	.1	4.0				15.0	9			
Do	do	Prosp	1907	2215	do	do		2.70	.2	5.4				16.0	7			
Do	Huntingdon	do	1907	2126	do	do		2.80	.1	3.1				16.7	14			
Do	do	do	1907	2127	do	Siliceous dolomite		2.70	.3	4.5								
Do	do	do	1908	2692	do	Feldspathic sandstone.		2.70	.2	2.2				17.5	24			
Do	do	Local	1911	5337	do	Limestone		2.70	.2	4.8				15.6	7			
Do	do	Prosp	1911	5726	do	Feldspathic sandstone.		2.65	.3	2.5				18.1	21			
Do	do	do	1911	5727	do	do		2.65	.4	3.3				18.6	14			
Do	do	Local	1914	7432	do	Argillaceous limestone.		2.75	.3					16.0	4			
Do	Mill Creek	Prosp	1907	2345	do	Limestone		2.70	.6	4.8				15.2	5			
Do	Mount Union	do	1907	2275	do	do		2.70	.4	4.2				14.4	6			
Do	do	Comm	1943	61694	do	Quartzitic sandstone.		2.57	.8		35.9	C						
Do	Shirley Township.	Prosp	1907	2337	do	Limestone		2.70	.2	4.1				15.2	6			
Do	Union Furnace	Comm	1907	2242	do	Dolomite		2.85	.1	3.5				16.1	11			
Do	do	do	1908	2491	do	Limestone		2.70	.1	3.8				16.2	6			
Do	do	do	1917	12379	do	Marble		2.77	.2	3.9				15.7	7			
Do	Warriors Mark	Local	1907	2243	do	Siliceous limestone.		2.80	.3	2.5				18.2	14			
Do	Water Street	do	1911	5604	do	Feldspathic sandstone.		2.70	.4	2.3			22,330	18.7	20			
Indiana	Indiana	Prosp	1908	2834	do	Limestone		2.70	.0	2.7				16.8	13			
Do	do	do	1908	2835	do	Sandstone		2.40	2.2	18.8				5.7	5			
Juniata	Mifflin	do	1911	5495	do	Argillaceous limestone.		2.75	.2	4.4				16.3	9			
Lackawanna	Dunmore	Comm	1907	2047	do	Sandstone		2.60	.6	2.5				18.3	9			
Do	Glenburn	Prosp	1907	2317	do	Ferruginous sandstone.		2.70	.7	4.0				15.4	15			
Do	Scranton	Comm	1906	1888	do	Sandstone		2.65	.2	2.0				17.7	15			
Do	do	do	1909	3191	do	do		2.60	.4	3.7				19.0	9			
Lancaster	Bainbridge	do	1931	42001	do	Dolomite		2.74	.2	2.6	20.8	A			20			
Do	Bart Township	Prosp	1906	1688	do	Diabase		3.00	.1	1.8				19.1	39			
Do	Eden Township	do	1906	1534	do	do		3.00	.1	1.7				18.5	39			
Do	Elizabethtown	Local	1911	5326	do	do		3.10	.2	1.8				17.9	18			
Do	Gap	Prosp	1911	5380	do	Micaceous marble		2.75	.2	5.0				11.5	7			
Do	do	Local	1912	6113	do	Dolomitic marble		2.90	.1	7.6				12.7	4			
Do	do	do	1913	6663	do	do		2.90	.1	4.7				11.8	4			
Do	do	do	1913	6670	do	do		2.85	.2	4.8				13.6	6			
Do	Lancaster	Prosp	1906	1847	do	Olivine diabase		3.05	.2	3.7				17.6	13			
Do	do	do	1908	2945	do	Diabase		3.00	.2	1.8				18.7	29			
Do	do	Local	1914	8139	do	Calcareous schist		2.75	.2	4.0				15.5	5			
Do	Lititz	do	1913	7048	do	Limestone		2.70	.1	5.0				12.7	4			
Do	do	Prosp	1913	7091	do	Marble		2.75	.1	4.2				11.5	5			
Do	Maytown	do	1912	6283	do	Limestone		2.65	.2	6.0				15.8	5			
Do	Millway	Local	1913	7044	do	do		2.75	.1	3.9				16.5	8			
Do	Mount Hope	Prosp	1907	2026	do	Diabase		3.10	.2	1.9				18.3	30			
Do	Quarryville	do	1911	5548	do	Marble		2.70	.1	5.2				14.5	5			
Do	Refton	do	1906	1590	do	Dolomite		2.85	.1	3.9				11.8	9			
Do	do	do	1906	1614	do	do		2.85	.6	4.7				12.7	6			
Do	Rheems	do	1909	3423	do	Limestone		2.70	.3	5.8				15.2	14			
Do	do	do	1914	7809	do	do		2.80	.3	4.9				16.7	16			
Do	Rothsville	do	1913	6700	do	Argillaceous dolomite.		2.85	.2	4.5				16.0	4			
Do	do	do	1913	7047	do	Limestone		2.85	.1	4.3				16.9	10			
Do	Salisbury Township.	do	1913	6567	do	Siliceous limestone.		2.70	.2	3.7				14.3	9			
Do	do	Local	1913	6568	do	Calcareous schist		2.90	.2	15.2								
Do	Strasburg Township.	do	1906	1569	do	Dolomite		2.85	.2	5.0				14.3	4			
Do	West Donegal Township.	Prosp	1904	1123	do	Diabase		3.00	.1					18.2	39			
Do	do	do	1905	1222	do	Gabbro		3.05	.2	2.4				18.3	18			
Lawrence	Chewton	Comm	1908	2686	do	Limestone		2.70	.2	4.4				15.8	8			
Do	Ellwood City	do	1908	2460	do	do		2.70	.4	4.5								
Do	do	do	1908	2717	do	do		2.70	.3	3.9				16.5	9			
Do	do	do	1917	12049	do	do								15.3	7			
Do	Rock Point	Prosp	1910	4322	do	do		2.70	.3	5.1				15.6	7			
Do	Walford	Comm	1911	5557	do	do		2.70	.2	4.9			27,500	16.5	7			
Lebanon	Annville	Local	1913	6532	do	Carbonaceous dolomite.		2.80	.5	2.9				17.0	7			
Do	Cornwall	Comm	1913	6632	do	Dolomitic limestone.		2.85	.3	4.1				13.7	8			
Do	do	Prosp	1914	7920	do	Siliceous dolomite							16,040					
Do	Donaghmore	Comm	1920	15440	Slag	Blast furnace		1.97	6.9	8 8								

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

PENNSYLVANIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Lebanon	Lebanon	Comm	1913	6612	Stone	Dolomite		2.80	0.3	3.7				17.6	20				
Do	do	Local	1913	6682	do	Argillaceous limestone.		2.70	.2	4.3				12.9	9				
Do	do	Prosp	1913	6887	do	Siliceous limestone.		2.75	.1	3.8				16.1	9				
Do	do	Local	1914	7540	do	do		2.71	.1	4.3				15.8	3				
Do	do	do	1914	7653	do	Argillaceous limestone.		2.75	.1	3.2				14.7	7				
Do	Sheridan	Prosp	1907	2374	do	Marble		2.75	.1	3.6				16.5	6				
Do	South Lebanon Township.	Comm	1913	6593	do	Limestone		2.70	.2	4.1				13.3	6				
Lehigh	Allentown	Prosp	1906	1692	do	Dolomite		2.80	.0	6.9				16.7	20				
Do	do	do	1914	7556	do	Argillaceous dolomite.		2.85	.1					16.4	10				
Do	do	Comm	1917	12297	do	Marble		2.83	.2	3.8				16.3	13				
Do	do	do	1917	12298	do	Limestone		2.82	.3	4.7				16.2	15				
Do	Catasauqua	do	1912	6327	do	Argillaceous dolomite.		2.80	.1	2.4									
Do	Emmaus	Prosp	1919	14999	do	Diorite [6]		2.81	.4	5.8					7				
Do	do	do	1919	15351	do	do		2.95	.5	5.0				18.0	10				
Do	do	Local	1921	18740	Slag	Blast furnace		2.14	4.2	13.1									
Do	Hokendauqua	Comm	1920	15441	do	do		2.09	5.9	17.1				12.3	3				
Do	do	do	1921	18867	do	do		1.95	4.2	19.5									
Do	Vera Cruz	Prosp	1905	1207	Stone	Gneiss		2.75	.3					18.6	14				
Do	do	Comm	1908	2662	do	Syenite		2.75	.2	2.2				18.3	16				
Luzerne	Conyngham	Prosp	1904	1114	do	Sandstone		2.70	.2	1.8				17.0	23				
Do	Duryea	Comm	1912	6305	do	Calcareous sandstone.		2.70	.3	2.4				15.5	10				
Do	do	do	1912	6308	do	do		2.65	.3	3.0				16.3	12				
Do	do	do	1914	7681	do	do		2.70	.2	2.9				18.6	7				
Do	do	do	1917	11255	do	do		2.68	.2	3.4				16.7	13				
Do	Hazleton	Local	1905	1396	do	Feldspathic sandstone.		2.65	1.0	3.3				15.6	10				
Do	do	do	1906	1698	do	Sandstone		2.70	.7	3.7				15.7	13				
Do	Pittston	Comm	1945	68776	Gravel	SQ					31.8	B						[12] 23.0	1-#4
Do	Shickshinny	Local	1923	23850	Stone	Feldspathic quartzite.		2.66	.4	2.8				18.3	17				
Do	Tannery	Prosp	1908	2577	do	Feldspathic sandstone.		2.70	.1	2.0				18.3	22				
Do	Wapwallopen	Comm	1914	7680	do	do		2.70	.2	1.7				18.3	33				
Do	White Haven	do	1905	1252	do	Quartzite		2.70	.1	1.8				18.0	26				
Do	do	do	1905	1278	do	Feldspathic quartzite.		2.70	.1	2.1				18.6	20				
Do	do	Prosp	1906	1874	do	Sandstone		2.65	.2	1.0				18.5	22				
Do	do	Comm	1914	7679	do	Feldspathic quartzite.		2.65	.2	1.9				18.7	22				
Do	do	do	1917	11352	do	do		2.66	.1				36,000	19.3	19				
Do	do	do	1921	18104	do	Sandstone		2.70	.1	2.6				18.3	16				
Do	do	do	1926	28313	do	do				5.8									
Do	Wilkes-Barre	do	1902	697	do	do		2.70	.3	3.8									
Do	do	Prosp	1904	1074	do	do		2.70	.2	2.8				18.6	37				
Do	do	do	1904	1075	do	Slate		2.75	.3					18.0	22				
Do	do	Comm	1908	2993	do	Feldspathic sandstone.		2.70	.3	2.3				18.8	32				
Lycoming	Cogan House	Prosp	1906	1653	do	Calcareous sandstone.		2.65	.7	4.8				13.0	7				
Do	Hughesville	Local	1911	5721	do	Argillaceous sandstone.		2.70	.5	3.3				12.3	13				
Do	Jersey Shore	Prosp	1906	1872	do	Limestone		2.75	.2	4.1				17.3	10				
Do	do	do	1908	2571	do	do		2.70	.5	5.1				14.3	8				
Do	do	do	1912	6153	do	Argillaceous limestone.		2.65	.2	3.8			28,580	18.0	22				
Do	do	do	1912	6154	do	do		2.70	.3	4.2			26,860	17.3	21				
Do	do	do	1912	6155	do	do		2.75	.7	5.4			18,610	12.5	14				
Do	do	do	1912	6156	do	Limestone		2.70	.3	4.6			22,930	16.0	11				
Do	do	do	1912	6157	do	do		2.75	.2	3.0			21,900	16.5	8				

Do	do	do	1912	6158	do	do		2.70	.4	3.2			14,160	14.7	7				
Do	do	do	1916	10672	do	Siliceous limestone.		2.67	.3	2.6			20,360	18.2	9				
Do	do	Comm	1922	22478	do	Limestone		2.68	.2	3.1			23,030	18.8	9				
Do	Larryville	Prosp	1910	4735	do	Feldspathic sandstone.		2.60	.7	4.6				18.2	22				
Do	Lime Bluff	Local	1921	19239	do	Argillaceous limestone.		2.70	.2	7.3			21,160	14.7	8				
Do	Lower Fairfield Township.	Prosp	1913	6691	do	Limestone		2.70	.1	4.7				16.2	8				
Do	Loyalsock Township.	Local	1914	7453	do	Carbonaceous limestone.		2.70	.9	4.1				16.8	8				
Do	Montgomery	Prosp	1905	1279	do	Limestone		2.75	.4	4.9				8.7	9				
Do	Montoursville	do	1914	7477	do	Calcareous chert		2.60	.6	4.9				19.7	3				
Do	do	Local	1916	10518	do	Argillaceous limestone.		2.63	.1	6.6			23,460	16.2	6				
Do	do	do	1918	12929	do	Limestone		2.71	.1	7.5				15.3	5				
Do	do	Comm	1933	34797	Gravel	Sandstone				4.0	33.9	A							
Do	do	do	1933	34798	do	SLC				4.2	32.6	A						[12] 17.2	1½–⅜
Do	do	do	1945	67910	do	Sandstone					25.0	A						[12] 20.4	1½–⅜
Do	do	do	1945	67954	do	do					27.8	B						[12] 29.2	1–⅜
Do	do	do	1945	68777	do	do					32.4	A							
Do	Muncy Township.	Prosp	1913	6880	Stone	Siliceous limestone.		2.75	.1	7.4				13.0	6				
Do	do	Local	1913	7322	do	Limestone		2.70	.3	6.0				15.7	4				
Do	Newberry	Prosp	1904	1121	do	Diabase		3.05	.1					18.6	31				
Do	do	do	1904	1122	do	do		3.05	.1					18.7	54				
Do	Piatt Township	do	1909	3783	do	Sandstone		2.60	.5	3.3				17.7	13				
Do	Picture Rocks	Local	1914	7445	do	Feldspathic sandstone.		2.60	1.1	2.6				19.2	19				
Do	Porter Township.	do	1905	1164	do	Limestone		2.70	.4	4.6				16.2	8				
Do	Williamsport	Prosp	1904	914	do	Sandstone		2.60	1.2	2.9				16.4	33				
Do	do	do	1904	1103	do	Calcareous shale		2.75	.5					13.9	3				
Do	do	do	1904	1139	do	Slatey limestone		2.70	.2	7.4				14.6	13				
Do	do	Local	1905	1161	do	Limestone		2.70	.1	5.8				16.4	8				
Do	do	do	1909	3868	do	Argillaceous limestone.		2.70	.2	4.8				17.3	8				
Do	do	Prosp	1909	4035	do	Feldspathic sandstone.		2.60	1.3					13.7	9				
Do	do	do	1909	4036	do	do		2.60	1.5					12.3	8				
Do	do	do	1909	4037	do	do		2.60	1.3					12.3	8				
McKean	Port Allegany	do	1914	7980	do	do		2.45					9,680						
Mercer	Sharon	Comm	1949	77152	Slag	Blast furnace					25.2	A							
Do	Sharpsville	do	1913	6813	do	do		2.50	2.8	19.1				14.5	3				
Do	do	do	1929	31278	do	do		2.27	2.8	12.2									
Do	do	do	1944	66187	do	do					30.7	A							
Mifflin	Hawstone	do	1943	61695	Stone	Feldspathic sandstone.		2.56	1.0		46.5	B							
Do	Lewistown	Prosp	1909	3224	do	Limestone		2.70	.2	4.1				18.3	18				
Do	do	do	1915	8653	do	Argillaceous limestone.		2.70	.2	2.3				16.8	7				
Do	Milroy	Local	1910	4396	do	Siliceous limestone.		2.75	.2	3.0				17.0	17				
Do	Naginey	Prosp	1907	2224	do	Limestone		2.70	.2	4.9				15.0	10				
Do	Reedsville	Comm	1908	2531	do	do		2.65	.5	5.5				11.9	4				
Monroe	Smithfield Township.	Prosp	1906	1816	do	Calcareous slate		2.70	.2	3.9				15.0	14				
Do	Tobyhanna	Local	1905	1359	do	Feldspathic sandstone.		2.70	.2	3.7				18.4	19				
Montgomery.	Ambler	do	1908	2624	do	Slate		2.80	.4	4.5				16.2	6				
Do	Bethayes	Prosp	1910	4601	do	Gneiss		2.65	.2	4.8				18.7	17				
Do	Bridgeport	Local	1907	2322	do	Feldspathic sandstone.		2.55	.8	3.1				19.4	14				
Do	Bryn Athyn	Prosp	1914	8050	do	Aplitic granite		2.65	.1	4.6				19.0	6				
Do	do	do	1915	9448	do	Eclogite		2.95	.1	3.3				19.3	15				
Do	Cold Point	Comm	1929	31663	do	Siliceous dolomite		2.87	.2	5.8			26,700	15.0	9			S	1½–1
Do	do	do	1929	32006	do	Dolomite		2.86	.2	5.6			35,370	14.7	11				
Do	do	do	1929	32007	do	do		2.85	.2	5.6			37,690	14.7	8				
Do	Conshohocken	do	1907	2274	do	Limestone		2.85	.3	4.2				16.0	8				
Do	do	Prosp	1914	7667	do	Schistose quartzite.		2.60	.4	4.0				19.3	14				
Do	Earnest	Comm	1914	8212	do	Dolomitic marble		2.85	.1	3.6				15.8	8				
Do	East Conshohocken.	do	1914	8213	do	do		2.85	.2	3.4				17.0	9				
Do	Fort Washington.	Prosp	1913	6665	do	Quartzite schist		2.65	.1	4.5				18.1	11				
Do	Franconia Township.	Local	1906	1895	do	Slate		2.70	.1	2.5				16.5	6				

[6] Altered. [12] 20 cycles, freezing and thawing; loss determined with half-size sieves.

Table 10.—Results of tests of coarse aggregate to Jan. 1 1951—Continued

PENNSYLVANIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Montgomery.	Green Lane	Prosp	1904	1037	Stone	Slate		2.75	0.4	2.6				17.9	17				
Do	do	Comm	1907	2049	do	do		2.70	.4	1.7				18.9	40				
Do	do	Prosp	1907	2092	do	Gabbro		3.10	.2	2.5				17.5	12				
Do	do	do	1907	2172	do	Slate		2.80	.3	2.6				15.4	10				
Do	do	do	1908	2558	do	Diabase		3.10	.2	2.7				17.1	8				
Do	do	Local	1908	2682	do	do.[6]		2.90	.2	1.6				18.5	40				
Do	do	do	1908	2683	do	Slate		2.75	.1	3.3				18.6	38				
Do	do	do	1908	2684	do	Calcareous sandstone.		2.70	1.1	2.0				18.7	23				
Do	do	do	1908	2760	do	Diabase		3.00	.2	1.4				18.5	33				
Do	do	Prosp	1911	5197	do	Slate		2.75	.3	2.9				18.9	52				
Do	do	Local	1915	8728	do	Micaceous slate		2.75	.2	2.0				17.5	17				
Do	do	Comm	1917	12261	do	Slate[6]		2.71	.2	2.3				17.3	24				
Do	do	do	1920	16587	do	Siliceous slate		2.76	.2	4.2				18.0	10				
Do	Hatboro	Local	1901	365	do	Sandstone		2.64	.5	4.0									
Do	Hendricks	do	1907	2039	do	Calcareous slate		2.65	.8	2.2				16.4	8				
Do	Huntingdon Valley.	do	1914	7853	do	Granite gneiss		2.70	.1	5.1				18.8	20				
Do	do	do	1915	8418	do	do		2.65	.2	3.4				19.3	15				
Do	Ivy Rock	Comm	1907	2021	do	Dolomite		2.80	.5	4.1				14.7	8				
Do	do	do	1919	13939	do	Dolomitic marble		2.84	.2	4.9				15.3	7				
Do	Lafayette Hill	Prosp	1921	17921	do	Granite		2.69	.3	3.2				19.0	10				
Do	Linfield	do	1914	7420	do	Ferruginous sandstone.		2.50	1.6	3.0				18.5	9				
Do	Lower Gwynedd Township.	do	1913	6639	do	Slate		2.70	.7	2.7				13.5	17				
Do	Norristown	Local	1913	6719	do	Dolomitic marble		2.85	.2	4.5				14.5	5				
Do	do	Comm	1914	7463	do	do		2.85	.2	4.1				15.9	6				
Do	do	Local	1914	8114	do	Siliceous limestone.		2.80	.3	3.4				17.4	10				
Do	do	Prosp	1919	14770	do	Siliceous slate		2.76	.6	1.7									
Do	Oreland	Local	1910	4623	do	Dolomite		2.85	.2	6.4									
Do	Paper Mills	do	1907	2261	do	Pyroxene granulite.		3.05	.1	2.7				19.2	14				
Do	Pencoyd	do	1915	8785	do	Granite gneiss		2.65	.2	2.6				18.1	8				
Do	Plymouth Meeting.	Comm	1914	8008	do	Dolomitic marble		2.85	.1	7.3				14.3	3				
Do	do	do	1914	8087	do	do		2.85	.3	4.0				12.7	6				
Do	Port Kennedy	Prosp	1905	1315	do	Dolomite		2.85	.1	4.2				14.7	11				
Do	do	do	1905	1316	do	Diabase		2.90	.1	2.8									
Do	do	Local	1913	6624	do	Dolomitic marble		2.70	.1	6.3				14.8	5				
Do	Pottstown	Prosp	1912	6459	do	Siliceous slate		2.75	.4	2.1				18.5	13				
Do	do	do	1912	6460	do	do		2.75	.4	2.1				18.3	43				
Do	do	do	1914	8211	do	do		2.70	.2	2.0				19.1	28				
Do	do	Comm	1921	18735	Slag	Blast furnace		2.13	3.6	14.4									
Do	do	do	1922	21168	do	do				15.9									
Do	do	do	1924	24526	do	do										64	1½–#4		
Do	do	do	1937	44357	do	do					41.0	A				65			
Do	Salford	Prosp	1911	5132	Stone	Argillaceous sandstone.		2.75	.7	2.2				15.8	6				
Do	Spring House	Local	1910	4624	do	Calcareous slate		2.70	.1	5.1									
Do	Stowe	Comm	1934	40447	do					2.4					45				
Do	Sumneytown	Prosp	1911	5080	do	Slate		2.75	.1	2.6				18.7	24				
Do	Swedeland	Comm	1924	24527	Slag	Blast furnace										61	1½–#4		
Do	do	do	1937	43182	Gravel	QQzGCS	1½				28.3	A							
Do	do	do	1937	43183	do	QzSSl	1½				30.3	A							
Do	Upper Salford Township.	Prosp	1914	7669	Stone	Siliceous slate		2.75	.8	4.4				18.2	11				
Do	Westmoreland Township.	Comm	1913	6862	do	Eclogite		2.95	.1	2.8				18.8	20				
Do	do	do	1913	6926	do	do		2.95	.1	2.6				18.4	19				
Do	Whitemarsh Township.	Local	1913	6638	do	Feldspathic quartzite.		2.60	.5	3.3				18.9	19				
Montour	Danville	Prosp	1906	1879	do	Chert		2.00	3.4	6.0				15.0	7				
Northampton.	Bath	do	1907	2186	do	Siliceous dolomite		2.80	.1	2.1				17.7	13				
Do	Bethlehem	Comm	1918	12690	do	Limestone		2.74	.1	5.2			18,990	14.7	7				

Do	do	do	1918	12691	do	do		2.68	.2	6.2			21,440	11.8	8				
Do	do	do	1920	15439	Slag	Blast furnace		2.22	3.7	20.2				12.3	3				
Do	do	do	1921	18736	do	do		2.07	4.8	11.9									
Do	do	do	1937	44342	do	do					32.1	A				69			
Do	Easton	Prosp	1904	1032	Stone	Limestone		2.85	.1	3.5				15.4	10				
Do	do	do	1905	1508	do	Diorite		3.00	.2	1.9				17.8	21				
Do	do	Local	1907	2014	do	Dolomite		2.80	.2	3.6				17.9	17				
Do	do	Comm	1915	8333	Slag			2.85	.5	3.7				17.6	11				
Do	do	do	1915	8494	do			2.90	.5	3.1			24,380	17.5	10				
Do	Glendon	do	1919	15264	do			2.80	1.1	6.1				15.7	8				
Do	Lehigh Gap	Prosp	1910	4599	Stone	Slate		2.75	.2	7.8				10.8	9				
Do	Mount Bethel	Comm	1917	11396	Gravel	Quartzite	2			6.8		A							
Do	Nazareth	Local	1905	1223	Stone	Dolomite		2.80	.1	2.4				17.4	27				
Do	do	do	1907	2240	do	Argillaceous limestone.		2.65	.9	4.2				10.9	6				
Do	Portland	Comm	1933	34796	Gravel	SSlLQz				2.4	21.8	A							
Do	do	do	1945	67757	do	Q(LSC)												[12] 4.2	1–⅜
Do	do	do	1945	68779	do	Q(LSC)					25.5	B						[12] 3.4	1–#4
Do	Redington	Prosp	1903	730	Stone	Dolomite		2.90	.0	5.5									
Do	Siegfried	Comm	1909	3322	do	do		2.80	.2	2.5				17.3	19				
Do	do	do	1909	3323	do	do		2.80	.1	2.8				17.4	12				
Do	South Bethlehem.	do	1916	10137	Slag	Blast furnace		2.32	3.1	9.3				13.7	3				
Do	do	do	1917	12179	Stone	Dolomite		2.83	.2	3.5									
Do	do	do	1918	12688	do	do		2.78	.0	4.9			38,950	15.0	10				
Northumberland.	Dalmatia	Prosp	1907	1994	do	Sandstone		2.65	.3	1.7				19.0	25				
Do	do	Comm	1912	6079	do	Feldspathic sandstone.		2.65	.2	2.1				19.0	33				
Do	do	do	1917	12234	do	do		2.67	.3	2.4				19.5	32				
Do	Dewart	Prosp	1904	1105	do	Limestone		2.65	.2	3.8				15.6	9				
Do	do	do	1905	1165	do	do		2.70	.2	4.6				15.5	8				
Do	McEwensville	do	1907	2357	do	Siliceous limestone.		2.55	1.3	10.0				16.6	9				
Do	Mount Carmel	do	1916	10429	do	Quartzite		2.61	.3	3.3				19.0	13				
Do	Shamokin	Local	1912	6092	do	Feldspathic sandstone.		2.65	.2	3.0				18.7	16				
Do	Sunbury	Prosp	1908	2507	do	Limestone		2.70	.2	5.6				15.8	6				
Do	do	do	1922	21395	do	Argillaceous limestone.		2.69	.1	10.0				13.3	4				
Do	Turbotville	do	1905	1162	do	Limestone		2.70	.3	6.1				17.0	10				
Do	Watsontown	do	1907	1998	do	do		2.75	.2	3.3				13.2	7				
Perry	Marysville	Comm	1907	2013	do	Sandstone		2.65	.3	1.8				18.0	14				
Do	do	do	1907	2225	do	Feldspathic sandstone.		2.65	.5	1.3				18.2	11				
Do	do	do	1907	2339	do	do		2.60	.6	2.0				19.0	16				
Do	do	do	1908	3016	do	do		2.65	.2	1.7				18.4	26				
Do	do	do	1909	3379	do	do		2.60	.6	2.1				18.3	24				
Do	do	do	1909	3425	do	do		2.65	.3	2.5				18.9	28				
Do	do	do	1909	3426	do	do		2.65	.6	2.6				17.3	13				
Philadelphia.	Frankford	Local	1913	6896	do	Hornblende gneiss		2.90	.1	3.8				16.8	6				
Do	Holmesburg	Comm	1916	9812	do	Biotite gneiss		2.65	.4				21,530	19.0	7				
Do	do	do	1917	11410	do	do							25,930	18.7	7				
Do	do	do	1932	34638	do	Granite gneiss									8				
Do	do	do	1932	34665	do	do									7				
Do	Philadelphia	Local	1910	4626	do	Marble		2.75	.3	5.0				13.5	8				
Do	do	Prosp	1911	5633	do	Argillaceous sandstone.								15.8	15				
Do	do	Comm	1928	30078	do	Gneissoid granite		2.67	.1	1.8									
Pike	Greentown	Prosp	1908	2932	do	Feldspathic sandstone.		2.70	.5	5.2				7.5	9				
Do	do	do	1908	2933	do	do		2.65	.4	3.2				17.7	8				
Do	Matamoras	do	1919	14785	do	do		2.65	.6	5.0				15.0	10				
Do	Shohola	do	1916	11190	do	do		2.72	.4	3.2			25,250	16.7	12				
Potter	Portage Township.	do	1910	4392	do	Sandstone		2.55	2.0	6.5				11.7	6				
Schuylkill	Aucheys	do	1913	6630	do	Feldspathic sandstone.		2.70	.2	2.4				17.8	32				
Do	Port Clinton	do	1910	4814	do	Quartzite		2.60	.2	2.2				18.3	20				
Do	Ringtown	Local	1907	2299	do	Feldspathic sandstone.		2.70	.4	2.3				17.7	15				
Do	Rock	do	1913	7310	do	do		2.70	.5	2.7				15.0	11				
Do	Roeders	Prosp	1913	6556	do	Slate		2.75	.2	4.0				12.3	28				
Do	do	Local	1913	6721	do	Sandstone		2.60	.5	6.7				17.9	6				
Do	do	do	1913	7179	do	do		2.60	.5	6.4				18.8	6				
Do	Sittler Township.	Prosp	1907	2210	do	Siliceous shale		2.70	.4	5.4				15.0	8				
Do	Summit Station	do	1913	6657	do	Feldspathic sandstone.		2.70	.3	2.4				17.5	9				

[6] Altered. [12] 20 cycles, freezing and thawing; loss determined with half-size sieves.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

PENNSYLVANIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Snyder	Shamokin Dam	Prosp	1908	2546	Stone	Limestone		2.70	0.5	4.1				14.7	6				
Somerset	Boswell	do	1915	8925	do	do		2.70	.6	4.4				17.3	10				
Do	do	do	1915	8926	do	Argillaceous limestone.		2.75	.2	4.9				17.0	14				
Do	Confluence	do	1916	10345	do	Calcareous sandstone.		2.69	.2	3.6			24,790	16.7	7				
Do	Fairhope Township.	do	1910	4185	do	Conglomerate		2.65	.2	7.7									
Do	Garrett	Comm	1935	42006	do					3.0					10				
Do	Jennerstown	do	1935	42003	do					3.0	22.6	A			10				
Do	McSpadden	Local	1909	3243	do	Sandstone		2.70	.4	2.5			24,650	18.2	11				
Do	Paint Township	Prosp	1907	2052	do	Limestone		2.85	.2	3.5				16.9	15				
Do	Somerfield	do	1907	2009	do	do		2.70	.4	3.4				15.7	14				
Do	do	do	1907	2036	do	do		2.70	.3	4.3				14.0	6				
Sullivan	Colley	do	1911	5246	do	Conglomeritic sandstone.		2.65	.8	7.0				15.7	8				
Susquehanna.	Brooklyn	do	1909	3929	do	Sandstone		2.65	.9	5.0				13.0	11				
Do	do	do	1909	3930	do	do		2.65	.9	5.1				12.3	10				
Do	do	do	1909	4065	do	do		2.65	1.1	4.6				11.7	8				
Do	Susquehanna	Local	1913	6659	do	Limestone		2.70	.2	3.8				13.9	6				
Tioga	Charleston Township.	Prosp	1909	3934	do	Calcareous sandstone.		2.70	.5	3.1				16.3	26				
Do	do	do	1909	3945	do	Sandstone		2.55	1.8	4.3				6.0	10				
Do	do	do	1909	4077	do	Calcareous sandstone.		2.70	.3	2.5				16.5	19				
Do	Delmar Township.	do	1908	3061	do	do		2.70	.5	3.3				16.3	7				
Do	Duncan Township.	do	1908	2827	do	do		2.75	.2	4.2				16.3	13				
Do	Mansfield	do	1906	1516	do	Siliceous limestone.		2.70	.2	5.0				12.5	5				
Do	Richmond Township.	do	1909	3784	do	Sandstone		2.65	.2	3.5				19.0	21				
Do	Tioga	Comm	1922	22480	Gravel	do	2½			7.1		A							
Do	Wellsboro	Prosp	1906	1883	Stone	do		2.65	1.0	3.0				12.0	13				
Do	do	do	1908	2425	do	Limestone		2.65	.7	4.7				16.7	12				
Do	do	do	1909	3732	do	Argillaceous sandstone.		2.70	.3	5.4				17.5	25				
Union	Allenwood	do	1913	6761	do	Shale		2.70	.3	11.8				.0	3				
Do	Lewisburg	Local	1906	1644	do	Limestone		2.70	.7	4.5				14.7	5				
Do	do	Prosp	1907	2134	do	do		2.70	.5	3.9				15.7	4				
Do	do	do	1908	2788	do	do		2.70	.4	4.9				14.8	5				
Do	do	Local	1932	34648	do	Argillaceous limestone.		2.70	.1	5.4				16.0	6			S	1½-1
Do	Mifflinburg	do	1912	5882	do	do		2.70	.1	5.5				14.8	8				
Do	do	do	1912	5883	do	Limestone		2.70	.2	5.3				15.6	6				
Do	Winfield	Prosp	1908	2536	Slag			2.95	.3	3.4				17.7	12				
Venango	Franklin	do	1909	3202	Stone	Argillaceous sandstone.		2.40	3.1	4.5				.3	7				
Do	Oil City	Comm	1945	67628	Gravel	SLGQzC					32.6	B						[12] 9.1	1-⅜
Do	do	do	1945	67629	do	SLGQzC					27.3	A						[12] 10.6	1½-#4
Do	do	do	1945	68774	do	SLQz					32.9	B						[12] 13.7	1-#4
Warren	Warren	Prosp	1905	1185	Stone	Feldspathic sandstone.		2.55	1.7					.0	8				
Do	do	Local	1908	2604	do	do		2.55	1.6	3.6				5.8	8				
Do	do	Comm	1945	67621	Gravel	SLCQzG					24.2	A						[12] 10.4	1-½
Do	do	do	1945	67622	do	SLCQzG					22.7	B						[12] 10.3	1-⅜
Do	do	do	1945	68772	do	QSG(L)					29.0	A						[12] 8.4	1½-⅜
Washington.	Monongahela	Prosp	1909	3707	Stone	Limestone		2.75	.1	4.0				15.8	12				
Do	do	do	1909	3708	do	do		2.60	2.0	3.3				16.3	16				
Do	Washington	do	1908	2613	do	Argillaceous limestone.		2.70	.4	2.8				16.5	12				

Do	do	do	1908	2614	do	Dolomitic limestone.	2.80	.4	2.6				16.8	14				
Wayne	Buckingham Township.	Local	1907	2327	do	Feldspathic sandstone.	2.65	.9	3.3				14.0	8				
Do	do	do	1907	2370	do	Ferruginous sandstone.	2.70	.8	3.8				12.5	9				
Do	do	do	1911	5566A	do	Sandstone [1]	2.50	2.1	11.0				.0	4				
Do	do	do	1911	5566B	do	Conglomeratic sandstone.	2.80	.7	6.7				15.3	7				
Do	Prompton	Prosp	1912	5830	do	Feldspathic sandstone.	2.70	.2	3.4			26,340	17.8	12				
Westmoreland.	Blairsville	Local	1911	5605	do	Siliceous limestone.	2.70	.2	2.1			32,560	17.2	19				
Do	Greensburg	Prosp	1908	2481	do	Limestone	2.70	.6	3.7				16.9	9				
Do	Hillside	Comm	1917	12102	do	Siliceous limestone.	2.68	.2	3.3			28,500	17.3					
Do	Latrobe	Prosp	1940	50397	do	do				26.5	A							
Do	Ligonier	Comm	1915	8911	do	do	2.70	.1	2.6			22,500	17.3	8				
Do	Long Bridge	do	1904	1072	do	do	2.70	.1					17.0	13				
Do	Loyalhanna Township.	Prosp	1907	2055	do	Feldspathic sandstone.	2.55	1.8	2.7				13.3	9				
Do	Mount Pleasant	do	1908	2879	do	Limestone	2.70	.3	4.2				16.9	8				
Do	North Huntingdon Township.	do	1908	2533	do	do	2.65	.4	4.9				16.7	8				
Do	do	do	1908	2750	do	do	2.75	.6	3.2				17.0	13				
Do	Saltsburg	do	1905	1258	do	Calcareous sandstone.	2.65	.1	3.6				9.9	11				
Do	Smithton	do	1922	21311	do	Limestone	2.74	.1	4.2				16.7	11				
Wyoming	Black Walnut	do	1911	5388	do	Sandstone	2.65	.8	4.8				14.6	12				
Do	Nicholson	Local	1906	1873	do	Feldspathic sandstone.	2.70	.9	3.8				16.0	10				
Do	Wyoanna	Comm	1945	68516	Gravel	SL(Qz)				26.5	B						[12] 15.6	1–#4
York	Carroll Township.	Prosp	1906	1694	Stone	Diabase	3.00	.2	1.8				18.3	22				
Do	Dillsburg	do	1908	2936	do	Feldspathic sandstone.	2.40	2.9	6.5				16.6	10				
Do	do	do	1908	2937	do	Diabase	3.00	.2	2.2				19.1	26				
Do	do	do	1908	2938	do	Ferruginous sandstone.	2.35	3.0	13.4				11.0	8				
Do	Emigsville	Local	1912	5778	do	Dolomitic marble	2.80	.1	4.6				14.3	7				
Do	Fawn Grove	Prosp	1910	4106	do	Hornblende-chlorite schist.	3.10	.2	2.8				18.4	16				
Do	Glenrock	do	1910	4097	do	Chlorite-epidote schist.	2.90	.2	6.8				12.3	6				
Do	Hanover	do	1906	1866	do	Quartzite	2.65	.1	2.5				19.3					
Do	do	do	1907	1948	do	Sandstone	2.30	3.2	12.8									
Do	do	Local	1914	7457	do	Siliceous marble	2.70	.3	4.3				15.8	7				
Do	do	do	1914	7790	do	Siliceous dolomite	2.85	.1	4.0				17.7	12				
Do	do	Comm	1933	34924	do	Limestone			4.7				10.0	3				
Do	do	do	1935	40881	do	do			3.8	27.9	A			6				
Do	do	do	1935	42200	do	do			4.7					3				
Do	do	do	1935	42201	do	do			4.3					4				
Do	do	do	1935	42202	do	Argillaceous limestone.			3.4					8				
Do	do	do	1944	65768	do	Limestone	2.77	.4		22.5	B							
Do	Hellam	Local	1912	5782	do	Crystalline limestone.	2.75	.1	3.1				16.7	7				
Do	Marsh Run Township.	Prosp	1905	1239	do	Gabbro	2.95	.2	2.2				17.5	14				
Do	Warrington Township.	do	1906	1695	do	Sandstone	2.80	.3	2.4				18.7	15				
Do	do	do	1906	1696	do	Diabase	3.10	.0	2.5				18.5	16				
Do	Wellsville	do	1907	2135	do	Epidosite	2.85	.4	2.8				18.9	22				
Do	do	do	1908	2562	do	Hematite	4.10	1.7	18.3½				17.6	11				
Do	West York	Local	1912	5781	do	Argillaceous limestone.	2.80	.2	2.8¼				17.3	28				
Do	Wrightsville	Prosp	1912	5779	do	Dolomitic marble	2.80	.1	2.6				17.1	13				
Do	York	do	1905	1366	do	Diabase	3.05	.1	2.0									
Do	do	do	1906	1691	do	Micaceous sandstone.	2.75	.2	3.6				13.9	8				
Do	do	Comm	1908	2948	do	Limestone	2.75	.2	4.5				14.0	5				
Do	do	do	1910	4706	do	do	2.70	.1	5.8				8.8	6				
Do	do	Prosp	1912	5780	do	do	2.70	.3	4.3				14.3	3				
Do	do	Local	1912	5783	do	Crystalline limestone.	2.75	.1	3.1				14.8	9				
Do	do	do	1912	5784	do	Carbonaceous limestone.	2.70	.3	4.8				14.8	7				
Do	do	Comm	1913	7049	do	Limestone	2.85	.1	3.9				17.1	6				
Do	do	do	1913	7050	do	do	2.75	.1	5.7				9.0	4				

[1] Weathered. [12] 20 cycles, freezing and thawing; loss determined with half-size sieves.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

PENNSYLVANIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
York	York	Local	1913	7330	Stone	Quartzite		2.55	0.6	3.6				18.7	7				
Do	do	do	1914	7428	do	Dolomitic marble		2.85	.1	3.4				15.3	9				
Do	do	Prosp	1914	7458	do	Diabase		3.00	.2	3.9				18.8	25				
Do	do	Comm	1914	7616	do	Crystalline dolomite.		2.80	.2	6.1				15.6	5				
Do	do	do	1915	9067	do	Dolomitic marble		2.85	.1	8.2				14.2	5				
Do	do	Prosp	1915	9666	do	Quartzite		2.60	.4	4.1				19.3	9				
Do	do	Comm	1935	40866	do	Limestone				3.7	29.2	A			5				
Do	do	do	1935	42005	do	do				4.9	41.6	A			4				
Do	do	do	1935	42364	do	do				4.1					3				
Do	York Haven	Prosp	1909	3410	do	Gabbro		3.05	.2	2.6				18.3	15				

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Bristol	Bristol	Prosp	1897	194	Stone	Field stone				3.8									
Do	do	Local	1904	886	do	Chloritic quartzite.		2.75	0.3	4.7				18.9	10				
Do	do	do	1904	889	do	Gneissoid granite		2.70	.2	2.8				18.0	10				
Do	Warren	Prosp	1897	281	do	Field stone				3.4									
Do	do	Local	1904	890	do	Chloritic sandstone.		2.70	.2	2.7				15.3	24				
Kent	East Greenwich	do	1904	891	do	Biotite gneiss		2.70	.1	2.6				18.8	20				
Do	Warwick	Prosp	1897	190	do	Field stone				3.7									
Do	do	Local	1906	1818	do	Micaceous quartzite.		2.65	.4	3.8				17.5	6				
Do	do	Prosp	1906	1821	do	do		2.75	.3	3.9				18.7	4				
Do	West Greenwich Center.	Local	1924	24476	do	Granite		2.56	1.0	10.8				18.3	5				
Newport	Jamestown	do	1906	1817	do	Feldspathic sandstone.		2.70	.4	4.8				18.3	16				
Do	do	do	1915	8989	do	Chlorite gneiss		2.65	.4	6.2				18.0	14				
Do	Middletown	Prosp	1899	302	do	Quartzite				3.1									
Do	do	Local	1904	896	do	do		2.80	.2	2.8				19.2					
Do	Newport	Prosp	1897	189	do	do				2.0									
Do	do	Local	1904	1019	do	Granite		2.60	.4	3.0				18.7	15				
Do	Portsmouth	do	1904	1020	do	Arkosic gneiss		2.90	.1	4.2				15.4	10				
Do	do	do	1906	1822	do	Feldspathic sandstone.		2.70	.4	2.4				16.7	15				
Providence	Ashton	Comm	1942	57597	do	Aplitic granite		2.76	.4		18.0	B							
Do	do	do	1942	57598	do	do							46,700		17				
Do	Berkeley	Prosp	1923	23776	do	Feldspathic quartzite.		2.65	.2	3.4				18.6	14				
Do	do	do	1923	23777	do	Micaceous quartzite.		2.81	.1	2.0				18.3	23				
Do	do	Local	1923	23822	do	Aplitic granite		2.66	.0	2.1				19.0	20				
Do	Central Falls	Comm	1922	20956	do	Conglomerate		2.73	.2	3.5			20,080	17.0	9				
Do	do	do	1924	24793	do	Siliceous slate		2.80	.1	5.6				13.3	10				
Do	Cranston	Local	1904	887	do	Granite		2.80	.1	3.4				19.1	10				
Do	do	Prosp	1904	894	do	Feldspathic quartzite.		2.75	.0	3.2				17.6	12				
Do	do	do	1911	5023	do	Sericite gneiss		2.65	.2	4.6				17.8	9				
Do	do	Local	1921	19418	do	Granite gneiss		2.67	.2	3.1				18.7	10				
Do	Cumberland Hill.	Prosp	1895	14	do	Peridotite		3.61		4.2									
Do	do	do	1895	42	do	Quartzite				4.4									
Do	Cumberland Township.	Local	1904	1017	do	Hornblende granite.		2.80	.2	1.6				17.9	12				
Do	Diamond Hill	do	1904	1018	do	Quartzite breccia		2.60	.4	2.9									
Do	do	do	1911	5589	do	Quartzite		2.60	.3	4.4				19.3	16				
Do	do	do	1925	26618	do	Quartz		2.60	.5	3.4				19.3	9				
Do	East Providence	Prosp	1895	43	do	Quartzite				4.2									
Do	do	do	1895	48	do	do				3.0									
Do	do	Local	1904	892	do	Sandstone		2.70	.2	3.0				19.1	7				

Do	do	do	1906	1820	do	Chlorite gneiss		2.80	.3	4.6				15.7	8			
Do	do	do	1916	10248	do	Feldspathic sandstone.		2.70	.4	3.6				18.0	12			
Do	do	Comm	1923	22756	do	do		2.70	.2	2.6				18.7	14			
Do	do	do	1925	27313	do	Conglomerate		2.70	.2	3.4				18.7	13			
Do	Johnston	Prosp	1897	191	do	Diabase				1.9								
Do	do	Local	1904	893	do	Gneissoid granite		2.65	.2	2.2				18.5	12			
Do	do	do	1904	897	do	Amphibolite		3.10	.1	2.8				19.0	9			
Do	do	do	1906	1819	do	Hornblende schist		2.95	.4	3.0				18.3	10			
Do	do	do	1913	6827	do	Amphibolite		3.00	.2	1.8				18.6	26			
Do	do	do	1925	28030	do	Hornblende schist		3.13	.2	3.8				17.7	14			
Do	Lincoln	Comm	1916	10171	do	Granite gneiss		2.73	.1	3.9				18.6	12			
Do	do	Prosp	1924	24862	do	Dolomitic limestone.		2.37	4.6	8.8				11.3	5		Q	1½-1
Do	do	Comm	1942	57599	do	Amphibolite		2.98	.4		16.8	B						
Do	do	do	1942	57600	do	do							46,100		10			
Do	North Providence.	Local	1904	888	do	Micaceous quartzite.		2.75	.2	2.6				16.5	21			
Do	Oakland	Comm	1923	24101	do	Gneissoid granite		2.63	.4	4.5				18.7	10			
Do	Pawtucket	do	1942	57601	Gravel	ScRGSQz		2.68	.7		22.0	B						
Do	Providence	Prosp	1895	36	Stone	Sandstone				4.0								
Do	do	do	1902	659	do	Augite diorite		3.00	.1	2.0								
Do	do	do	1923	23107	do	Serpentine		2.72	.1	1.9			43,060	18.7	39			
Do	do	Local	1930	32405	do	Amphibolite		3.03	.2	2.9				16.0	14			
Do	do	do	1930	32406	do	do		3.03	.2	4.3				12.7	12			
Do	Smithfield	do	1904	895	do	Granite		2.60	.1	3.7					10			
Do	do	do	1915	9242	do	Gneissoid granite		2.65	.3	3.0				18.3	6			
Do	Woonsocket	Prosp	1904	1922	do	Peridotite		3.55	.1	4.3				15.0	12			
Do	do	Comm	1923	24196	do	do		3.72	.0	5.0				16.0	10			
Do	do	do	1942	57595	do	do		3.52	.3		13.0	B						
Do	do	do	1942	57596	do	do		3.50	.4				29,000		4			
Washington	Carolina	Local	1928	30656	Gravel	GGn				34.7		A						
Do	do	do	1928	31277	do	GGn				31.2		A						
Do	South Kingstown Township.	do	1905	1213	Stone	Granite		2.60	.3	5.2				15.8	4			
Do	Westerly	do	1904	1021	do	do		2.65	.4	2.4				17.7	12			
Do	do	do	1905	1259	do	do		2.65	.2	2.8				18.1	11			
Do	do	do	1905	1260	do	do		2.65	.3	2.2				18.2	9			
Do	do	Comm	1915	8867	do	do		2.65		4.0			11,740		6			
Do	do	do	1915	8868	do	do		2.65		2.9			20,300		12			
Do	do	do	1915	8869	do	do		2.65		3.5			20,750		11			
Do	do	do	1916	10467	do	do		2.58	.2	3.9				18.7	9			
Do	do	do	1917	11398	do	Biotite granite		2.60	.2	2.4			31,450	19.3	11			
Do	do	Prosp	1917	12445	do	Granite		2.60	.4				18,260	18.7	15			
Do	do	Comm	1923	23607	do	Biotite granite		2.64	.3	3.1			30,400	18.7	9			
Do	do	do	1926	28732	do	do		2.64	.4	2.9				18.0	13			
Do	do	do	1926	28733	do	do		2.65	.2	3.0				18.0	13			
Do	do	do	1926	28734	do	do		2.63	.3	5.6				18.0	5			

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Abbeville	Abbeville	Local	1903	783	Stone	Chert		2.60	0.7	22.1								
Do	do	do	1909	3451	do	do		2.65	.2	9.1								
Do	do	Prosp	1913	6490	do	Granite		2.65	.4	4.5				17.2	9			
Do	do	do	1913	6491	do	do.[6]		2.55	.1	18.2				.0	3			
Do	do	do	1913	6492	do	Granite gneiss		2.80	.4	13.2				14.1	6			
Do	do	do	1913	6493	do	Gneissoid granite		2.65	.2	3.8				18.0	6			
Aiken	Kathwood	Comm	1936	42687	Gravel	Quartz					45.2	B						
Do	do	do	1936	42934	do	do					45.0	A						
Do	do	do	1937	44734	do	QQz					42.1	A						
Do	North Augusta (Savannah River).	Local	1921	19751	do	Quartz	1½			24.0		A						
Allendale	Baldock	Comm	1939	46786	do	do					60.5	A					6.4	1½-#4
Anderson	Belton	Prosp	1908	2545	Stone	Ferruginous sandstone.		3.20	2.5	10.3								
Do	Williamston	do	1915	8389	do	Granite		2.65	.4	5.3			12,990	18.3	6			
Beaufort	Parris Island	do	1937	43181	Gravel	Quartz					16.5	D						
Cherokee	Gaffney	Local	1906	1758	Stone	Limestone		2.75	.1	5.7				8.7	8			
Do	do	Prosp	1923	23440	do	Gneiss		2.57	1.1	21.4			17,100	18.7	6			
Do	do	Comm	1932	34751	do	Marble		2.72	.2								3.1	1½-⅜
Do	do	do	1932	34777	do	Dolomitic marble									3			
Do	do	do	1934	40141	do	Crystalline limestone.		2.72	.2	4.7					3			
Do	do	do	1934	40142	do	Dolomitic marble		2.84	.3	7.0					4			
Do	do	do	1934	40143	do	do		2.85	.3	7.9					3			
Do	do	do	1934	40190	do	do				6.2								

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

SOUTH CAROLINA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Cherokee	Gaffney	Comm	1935	40923	Stone	Dolomitic marble					65.2	A							
Do	do	do	1935	40927	do	do					51.8	A							
Do	do	do	1935	40995	do	do					64.0	B							
Do	do	do	1936	42686	do	do					46.6	B							
Do	do	do	1936	42935	do	do					64.2	A							
Chesterfield.	Cheraw	do	1918	12912	Gravel	QS	2			26.8		A							
Do	do	do	1920	16177	do	QS	2			33.6		A							
Do	do	do	1920	16339	do	QS				28.2		A							
Do	do	do	1921	20112	do	Quartz	2			36.6		A							
Do	do	do	1922	21044	do	do	2			29.0		A							
Do	do	do	1925	26793	do	do	2			33.5		A							
Do	do	do	1925	27344	do	do	2			34.0		A							
Do	do	do	1934	40144	do	do					83.0	A							
Do	Chesterfield	do	1923	22768	Stone	Granite		2.64	0.2	5.0			24,190	19.0	8				
Do	Jefferson	Prosp	1941	54511	do	Massive topaz							97,600						
Do	Pageland	Comm	1929	31538	do	Granite								18.3	9				
Do	do	do	1929	32322	do	do									8				
Do	do	do	1929	32323	do	do									9				
Do	do	do	1930	33081	do	do									8				
Do	do	do	1930	33082	do	do									12				
Do	do	do	1930	33083	do	do									6				
Do	do	do	1930	33084	do	do									7				
Do	do	do	1931	33978	do	do									12				
Do	do	do	1931	34032	do	do									8				
Do	do	do	1931	34033	do	do									10				
Do	do	do	1931	34034	do	do									10				
Do	do	do	1931	33035	do	do									9				
Do	do	do	1931	34132	do	do									5				
Do	do	do	1932	34773	do	do									7				
Do	do	do	1945	67605	do	do												0.1	2–¾
Edgefield	Trenton	do	1920	15453	do	Biotite granite		2.63	.4	3.2									
Fairfield	Blair	Local	1907	2386	do	Granite		2.65	.2	3.2				18.9	9				
Do	do	do	1931	34102	do	do									13				
Do	do	Comm	1931	34129	do	do									8				
Do	do	do	1931	34130	do	do									8				
Do	do	do	1931	34533	do	do		2.63	.4						7				
Do	do	do	1932	34778	do	do									7				
Do	do	do	1935	40996	do	do					39.1	B							
Do	do	do	1936	42685	do	do					39.8	B							
Do	do	do	1936	42933	do	do					45.4	A							
Do	do	do	1937	44322	do	do					38.7	A							
Do	do	do	1946	71211	do	do					40.7	B							
Do	Rion	do	1911	5568	do	do		2.70	.1	2.6			29,180	18.3	14				
Do	do	do	1911	5586	do	do							25,790	18.5	11				
Do	do	do	1916	10531	do	Biotite granite		2.64	.4	4.4			25,540	18.3	8				
Do	do	do	1917	11417	do	do							22,970	18.0	7				
Do	do	do	1919	14765	do	do		2.63	.4	3.2			20,100	18.0	12				
Do	do	do	1923	22750	do	do		2.61	.3	3.6			29,820	17.7	13				
Do	do	do	1923	24351	do	do		2.64	.3	3.4				18.3	7				
Do	do	do	1931	34138	do	do		2.63	.4	2.8			30,100	18.7	11				
Do	do	do	1932	34735	do	do		2.63	.4	3.5				18.0	10				
Do	do	do	1932	34776	do	do									9				
Do	Winnsboro	Local	1931	34133	do	Granite									6				
Greenville	Greenville	do	1909	3893	do	do		2.65	.1	5.0				18.2	9				
Do	do	Prosp	1916	10129	do	Hornblende gneiss.		2.76	.4	8.0				17.0	6				
Do	do	Local	1916	10131	do	Granite		2.64	.5	4.4				18.7	8				
Do	Travelers Rest	Comm	1921	20015	do	do		2.68	.5	9.1				17.7	6				
Do	do	do	1921	20188	do	do				4.1									
Do	do	do	1921	20321	do	do		2.63	.3	4.8				17.7	5				
Do	do	do	1922	21762	do	do		2.80	.3	6.7				16.3	6				
Do	do	do	1927	29414	do	do									7				
Lancaster	Lancaster	Prosp	1909	3759	do	Rhyolite [6]		2.70	.1	3.1				18.9	10				
Laurens	Clinton	Local	1920	17563	Gravel	Quartz	2			37.6		A							
Do	Laurens	do	1923	23007	Stone	Biotite granite		2.61	.4	3.9				18.3	8				
Lexington	Batesburg	Prosp	1905	1449	do	Gneissoid granite		2.60	.3	2.4				18.8	21				

Do	Cayce	Comm	1919	14457	do	Biotite granite		2.62	.3	2.5			33,090	18.3	13				
Do	do	do	1922	22236	do	do				2.4									
Do	do	do	1922	22350	do	do				2.4									
Do	do	do	1923	24453	do	do				2.8									
Do	do	do	1923	24460	do	Granite		2.64	.2	3.3			29,680	19.1	11				
Do	do	do	1927	30004	do	do		2.61	.2	2.0									
Do	do	do	1928	30150	do	do		2.62	.2	2.2									
Do	do	do	1930	33086	do	Biotite granite									15				
Do	do	do	1931	33270	do	Granite		2.60	.3	2.5				19.0	12				
Do	do	do	1934	40147	do	do					35.0	A							
Do	do	do	1941	55679	do	do					27.8	A							
Do	do	do	1941	55681	do	do		2.63	.2				44,600		17				
Do	do	do	1942	55956	do	do		2.62	.6		25.8	A						2.0	2½-#4
Do	Leesville	do	1921	19652	do	Granite gneiss		2.66	.2	3.1			37,690	18.7	13				
McCormick	McCormick	Local	1919	14298	do	Syenite [6]		2.75	1.6	10.6				16.7	8				
Do	do	Prosp	1919	14301	do	Quartz		2.62	.2	9.8									
Marlboro	Bennettsville	Local	1935	40825	Gravel	do					61.6	A							
Do	Blenheim	Comm	1938	44914	do	do					50.0	A							
Pickens	Beverly	do	1909	3923	Stone	Granite gneiss		2.75	.2	5.5				17.7	6				
Do	do	do	1909	4008	do	Granite		2.70	.3	3.5				17.8	13				
Do	do	do	1916	10130	do	Biotite gneiss		2.67	.4	4.1				17.7	4				
Do	do	do	1938	44846	do	Granite gneiss					58.5	A							
Do	do	do	1946	71207	do	Gneissoid granite					57.7	B							
Do	Liberty	do	1926	28304	do	do		2.66	.4	6.2				17.3	7				
Do	do	do	1934	40145	do	do					67.6	A							
Richland	Columbia	Local	1901	374	do	Granite		2.64	.1	2.9									
Do	do	Prosp	1917	11647	do	do		2.65	.6	3.1			21,500	18.0	8				
Do	do	Local	1918	12902	Gravel	SQ	2			29.0		A							
Do	do	do	1918	12903	do	SQ	2			40.5		A							
Do	do	Prosp	1921	19682	Stone	Quartz		2.65	.1	6.4				18.7					
Do	do	Comm	1922	22436	do	Granite				1.8									
Do	do	do	1923	23413	do	do				2.3									
Do	do	do	1929	31539	do	Biotite granite								18.3	16				
Do	do	do	1930	33085	do	do									15				
Do	do	do	1931	34134	do	Granite									7				
Do	do	do	1932	34772	do	Biotite granite									11				
Do	do	do	1936	42688	do	Granite					34.3	B							
Do	do	do	1936	42932	do	do					38.8	A							
Do	do	do	1937	44321	do	do					29.0	A							
Do	do	do	1946	71209	do	do					25.4	B							
Do	Wateree	do	1922	21060	Gravel	Quartz	2			17.8		A							
Do	do	do	1922	21120	do	do	2			15.6		A							
Do	do	do	1922	22238	do	do	1½			14.2		A							
Do	do	do	1925	26924	do	do	2			16.6		A							
Do	do	do	1925	27591	do	SQ				32.6		A							
Do	do	do	1934	40146	do	Quartz					50.0	A							
Do	do	do	1937	44323	do	do					46.1	A							
Spartanburg	Pacolet	Prosp	1901	375	Stone	Granite		2.64	.1	1.9									
Do	do	do	1906	1757	do	do		2.65	.2	4.1				17.7	15				
Do	do	Comm	1926	28716	do	do		2.54	.4	4.3				18.3	7				
Do	do	do	1927	29227	do	do									6				
Do	do	do	1927	29228	do	do									7				
Do	do	do	1927	29229	do	do									7				
Do	do	do	1927	29369	do	do		2.63	.6	3.8			23,120	18.0	9				
Do	Spartanburg	Prosp	1904	1079	do	Syenite		2.70	.2	2.4				18.4	10				
Do	do	Local	1906	1603	do	Granite		2.75	.3	2.1				18.2	10				
Do	do	do	1907	2110	do	Biotite gneiss		2.80	.1	3.8				15.6	7				
Do	do	Prosp	1917	12380	do	Biotite granite		2.65	.4	6.8			8,620	18.5	6				
Union	Lockhart	Local	1919	15153	do	Diorite		3.04	.3	2.4				19.0	10				
Do	Union	do	1905	1217	do	Granite		2.70	.2	5.6				17.2	9				
York	Clover	Prosp	1923	24422	do	Biotite granite		2.60	.6	8.2				18.0	7				
Do	Rock Hill	Local	1918	12863	do	Gabbro [6]		3.01	.1	3.2				18.0	17				

SOUTH DAKOTA

Brule	Bijou Hills	Prosp	1921	19068	Stone	Opaline sandstone		2.32	1.2					18.0	10				
Dewey	Timber Lake	do	1946	72454	do	Feldspathic sandstone.		2.14	6.6		29.0	A	18,000		12			11.4	1½-#4
Fall River	Oral	Comm	1945	67479	Gravel	LSQz	1											19.7	1-#4
Gregory	Burke	Local	1921	17874	Stone	Calcareous sandstone.		2.24	2.8	7.4				17.7	9				
Do	Gregory	do	1921	17872	do	Limestone		2.31	3.9	14.2				6.7	6				
Do	do	do	1923	23079	do	do		2.22	5.1	18.1				13.7	5				
Hanson	Burton	Prosp	1933	34931	do	Quartzite		2.63	.2	2.1				19.3	16				

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

SOUTH DAKOTA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Lawrence	Deadwood	Prosp	1923	22740	Stone	Limestone		2.67	0.4	4.9				15.0	4				
Do	do	do	1930	33017	do	Dolomite		2.60	1.9	5.6				16.0	10				
Do	do	do	1930	33019	do	Rhyolite [6]		2.48	1.8	4.6				18.3	16				
Do	Lead	do	1907	2106	do	Diorite [6]		2.70	.2	2.2				17.3	15				
Do	do	do	1907	2107	do	Granite porphyry		2.60	.4	2.9				17.5	10				
Do	do	do	1907	2108	do	Rhyolite [6]		2.35	3.1	3.8				15.8	16				
Do	do	do	1909	3372	do	Limestone		2.70	.1	5.6				15.6	5				
Do	do	do	1909	3373	do	Sandstone		2.60	.3	3.2				19.0	10				
Do	do	do	1909	3374	do	Dolomite		2.75	.6	5.2				16.3	9				
Do	do	do	1909	3375	do	Chert [1]		2.40	2.7	3.2									
Do	do	do	1927	29508	do	Amphibolite		3.33	.2	6.4				16.0	10				
Do	do	do	1930	33018	do	Rhyolite [6]		2.49	2.0	3.7				18.3	23				
Meade	Boulder Canyon	do	1923	23052	do	Limestone		2.71	.2	6.6				14.3	4				
Do	Elm Springs	do	1923	23053	do	Dolomite		2.65	1.1	6.1				10.0	5				
Do	do	do	1923	23054	do	Limestone		2.70	.1	6.1				13.7	3				
Do	Piedmont	Local	1921	18101	do	Dolomitic limestone.		2.54	1.9	7.1				9.3	5				
Do	Sturgis	Prosp	1907	1922	do	Granite porphyry			.1	4.3			16,200	15.0	12				
Minnehaha	Dell Rapids	Comm	1916	10108	do	Quartzite		2.65	.2	2.8				19.3	17				
Do	do	do	1921	18958	do	do		2.66	.0	2.5				18.7	20				
Do	do	do	1921	19596	do	do							51,700						
Do	do	do	1942	59099	do	do					28.4	B							
Do	do	do	1942	59100	do	do		2.64					69,800		15				
Do	do	do	1942	59101	do	do					30.3	A							
Do	do	do	1942	59102	do	do		2.63					53,300		13				
Do	Rowena	do	1901	449	do	do		2.64	.1	2.8									
Do	do	do	1916	10896	do	do		2.64	.2	2.7				19.3	17				
Do	do	do	1928	30067	do	do		2.68	.1	2.0				19.3	23				
Do	Sioux Falls	do	1916	10894	do	do		2.62	.2	1.4				19.3	17				
Do	do	do	1916	10895	do	Diabase		3.02	.2	2.7				18.7	18				
Do	do	do	1918	13729	do	Quartzite								19.7	17				
Do	do	do	1918	13730	do	do								19.7	30				
Do	do	do	1921	18984	do	do		2.73	.2	2.3			36,380	18.7	17				
Do	do	do	1922	22222	do	do		2.64	.1	1.8				18.7	22				
Do	do	do	1931	33959	do	do		2.62	.4	3.2									
Do	do	do	1934	40088	do	do					34.4	A							
Do	do	do	1942	59103	do	do					25.1	B							
Do	do	do	1942	59104	do	do		2.62					59,100		16				
Pennington	Hill City	Prosp	1945	67482	do	Micaceous quartzite.												3.1	1½–#4
Do	Rapid City	Comm	1911	5582	do	Marble		2.70	.1	4.0				11.4	4				
Do	do	do	1911	5584	do	Dolomite		2.60	1.1	4.2				16.8	4				
Do	do	Prosp	1911	5672	do	Feldspathic quartzite.		2.70	.1	2.4				19.0	25				
Do	do	Comm	1925	26645	do	Limestone		2.70	.1	4.7				15.3	5			S	1½–1
Do	do	do	1925	26708	do	Dolomite		2.68	.8	5.6				16.7	10			S	1½–1
Do	do	do	1927	29351	do	Micaceous quartzite.		2.66	.2	2.8			27,680	18.7	13				
Do	do	do	1930	32479	do	Quartzite		2.66	.2	3.0				18.7	12				
Do	do	do	1930	32480	do	Siliceous limestone.		2.67	.2	4.6				14.7	6				
Perkins	Lemmon	Prosp	1946	72453	do	Chert		2.63	.4		15.3	A						1.0	1½–#4
Tripp	Carter	do	1923	23160	do	Opaline sandstone		[12] 2.38	.7	6.6				18.7	10				
Do	Colome	Local	1920	16017	do	Sandstone		2.39	.7	9.3				16.3	6				
Do	do	do	1920	16018	do	do		2.38	1.0	8.6									
Do	do	Prosp	1920	16019	do	Siliceous limestone.		2.31	2.9	24.8				5.3	5				
Do	do	do	1920	16465	do	Tuffaceous limestone.		2.22	4.5	10.9					7				
Ziebach	Bridger	do	1930	32499	Gravel	QC		2.60	.5	[11] 3.0									

Anderson	Clinton	Prosp	1907	2104	Stone	Limestone		2.65	0.5	2.7				16.5	11				
Benton	Camden	Comm	1907	2367	do	Chert		2.25	1.9					19.2	9				
Blount	Cades Cove	Prosp	1939	46868	do	Limestone					25.1	A							
Do	do	do	1939	46869	do	do					25.4	A							
Do	do	do	1941	52863	do	Quartzite					23.6	A						S	1½–1
Do	do	do	1941	52864	do	Mica schist					34.6	A						U	1½–1
Do	do	do	1944	63839	do	Limestone		2.73	.1		29.5	A						S	1½–1
Do	Maryville	Local	1916	9992	do	Argillaceous limestone.		2.70	.2	3.8				16.7	6				
Do	do	do	1916	9993	do	Limestone		2.70	.2	4.3				15.7	5				
Do	Tallassee	do	1947	74227	do	do		2.76	.6		21.7	A	34,400					3.3	1½–#4
Do	Townsend	Prosp	1938	46330	do	Quartzite					21.6	A							
Do	do	do	1939	46870	do	Limestone					22.2	A							
Do	do	do	1939	46871	do	do					23.8	A							
Do	do	do	1939	46872	do	do					23.4	A							
Do	do	Local	1939	46873	do	do					24.6	A							
Do	do	do	1939	46925	do	do					26.8	A						S	1½–1
Do	do	do	1939	46926	do	do					17.2	A						S	1½–1
Do	do	do	1940	48872	do	Siliceous limestone.					20.5	B							
Do	do	do	1940	49146	do	Limestone					23.8	A							
Do	do	do	1940	51245	do	do					19.0	B							
Do	do	Prosp	1949	77582	do	do					26.2	A						.9	1½–#4
Do	do	do	1949	77743	do	do		2.69	.2		24.0	A	33,000					.4	1½–#4
Do	do	do	1949	78451	do	do		2.75	.3		17.5	A	40,000					.7	1½–#4
Do	do	do	1950	82082	do	do		2.70	.3		27.9	A	41,750					1.5	1½–#4
Do	do	do	1950	82106	do	Dolomitic limestone.		2.75	.1		18.2	A	48,750					1.2	1½–#4
Carter	Elizabethton	Local	1910	4333	do	Argillaceous limestone.		2.76	.2	3.3				17.7	18				
Do	Okolona	Comm	1946	71101	do	Limestone					23.2	A							
Do	Siam (Watauga River).	do	1931	33995	Gravel	S(QCSh)	2	2.56	1.3									S	2–#4
Do	Watauga	do	1915	9223	Stone	Dolomite		2.85	.2	4.1					9				
Do	do	do	1940	49507	do	Limestone					14.0	A							
Do	do	do	1947	54973	do	Argillaceous limestone.					19.7	B							
Do	do	do	1947	54974	do	do					16.1	A						S	1½–1
Claiborne	Cumberland Gap.	Prosp	1905	1326	do	Limestone		2.75	.1	3.9				15.8	10				
Do	do	do	1905	1326	do	do		2.70	.2	3.8									
Do	Harrogate	do	1916	10326	do	Dolomite		2.79	.5	3.2				16.0	14				
Do	do	do	1916	10327	do	do		2.74	1.1	3.6				13.3	7				
Do	New Tazewell	do	1916	10292	do	Siliceous limestone.		2.74	1.1	4.2				13.3	8				
Do	do	do	1916	10446	do	Dolomite		2.76	.7	4.1				15.3	9				
Do	Tazewell	do	1916	10581	do	Siliceous dolomite		2.73	1.1	4.1				15.2	9				
Cumberland.	Crab Orchard	Comm	1936	42957	do	Sandstone				3.1					10				
Do	do	do	1946	72517	do	Limestone		2.66	.9		24.1	A	16,600		7			10.5	1½–#4
Do	do	do	1947	73628	do	do					26.2	B							
Do	Crossville	do	1950	79826	do	Sandstone		2.44	2.6		72.2	A	24,300					{64.4 / [15] 2.2	1½–#4 / 1½–#4
Davidson	Antioch	do	1947	73629	do	Limestone					22.0	B						6.0	1–¾
Do	Danley	do	1950	82744	do	do													
Do	Mimms	do	1934	40136	do	do					34.6	A							
Do	do	do	1938	46120	do	do				3.9					5			S	1½–1
Do	do	do	1938	46296	do	do				4.9	25.9	A			7			S	1½–1
Do	Nashville	Local	1901	376	do	do		2.69	.1	5.0									
Do	do	do	1901	377	do	do		2.69	.1	5.2									
Do	do	do	1901	378	do	do		2.69	1.1	5.8									
Do	do	do	1901	379	do	do		2.45	2.0	15.1									
Do	do	Comm	1913	6557	do	do		2.70	.5	3.5				10.4	6				
Do	do	Local	1915	9667	do	do		2.70	.2	4.5				15.5	8				
Do	do	do	1915	9668	do	do		2.70	1.3	7.3				9.0	4				
Do	do	do	1915	9669	do	do		2.75	.2	4.5				16.0	6				
Do	do	do	1922	22706	do	do		2.58	1.9	5.7				12.1	4				
Do	do	do	1922	22795	Slag	Blast furnace		2.34	1.4	7.5									
Do	do	Comm	1923	23099	Stone	Argillaceous limestone.		2.68	.5					15.3	8				
Do	do	do	1935	40833	Gravel	Chert	1½			5.7		A							
Do	do	do	1940	50199	do	do	1½	2.34	3.8		22.3	A				98	1½–#4		
Do	do	do	1940	51047	do	do					21.7	B							
Do	do	do	1941	53227	do	C(Q)	1				24.2	B							
Do	Nashville (Cumberland River).	do	1919	14216	do	Chert	2	2.38	2.3	10.0		A							
Do	do	do	1934	40139	do	do					27.2	A							

[1] Weathered. [6] Altered. [11] Tested by method for stone. [15] 50 cycles, freezing and thawing.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

TENNESSEE—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Decatur	Bath Springs	Prosp	1934	40486	Stone	Argillaceous limestone.		2.68	0.7	7.7					7				
Do	Parsons	Local	1909	3154	Gravel	Chert		2.35	2.0	[11] 8.3									
Do	Perryville	do	1905	1407	Stone	Limestone		2.55	.6	4.2					13.8	7			
Do	do	do	1909	3155	Gravel	Chert		2.35	2.3	[11] 7.0									
Dickson	Charlotte	Prosp	1914	8109	Stone	Argillaceous limestone.		2.65		5.6					14.0	5		*	
Do	do	do	1914	8110	do	do		2.60	.6	6.4					13.1	4			
Do	do	do	1914	8111	do	Limestone		2.50	2.0	5.1					16.3	3			
Do	do	do	1914	8112	do	Argillaceous limestone.		2.55	1.6	7.3					17.1	5			
Do	do	do	1914	8113	do	do		2.45	4.2	8.5					18.0	4			
Fayette	Gallaway	Comm	1950	82746	Gravel	Chert					20.5	A							
Fentress	Jamestown	Prosp	1916	10483	Stone	Sandstone		2.33	2.7	10.8					15.0	4			
Franklin	Estill Springs	Comm	1930	32486	Gravel	Chert	2	2.09	6.8	20.9		A				83	2–#4		
Do	do	do	1934	40137	do	do					34.1	A							
Do	do	do	1934	46003	do	do	2											12.7	1½–⅜
Do	do	do	1939	48075	do	do	1½	2.08	7.8		28.1	A						11.6	1½–#4
Do	Sherwood	do	1934	40138	Stone	Limestone					30.2	A							
Hamilton	Chattanooga	Prosp	1901	448	do	do		2.69	.2	2.8									
Do	do	Local	1902	503	do	do		2.70	.1	4.0									
Do	do	do	1915	8865	do	do		2.75	.2	5.1					15.5	4			
Do	do	Comm	1918	13064	do	do		2.72	.1	4.5					15.7	8			
Do	do	do	1929	31406	Gravel	QCS	2	2.61	.6	19.9		A						Q	2–#4
Do	do	do	1934	40155	do	QCS					38.4	A							
Do	do	do	1934	40770	do	QCS	1			6.8		B							
Do	do	do	1934	40798	do	QCS	1			9.7		B							
Do	do	do	1935	42255	do	SC	2			10.6		A						10.2	2–#4
Do	do	do	1935	42496	do	SC	2	2.58	1.4	15.3		A							
Do	do	do	1938	46325	do	SC	1½				37.6	A							
Do	do	do	1938	46344	do	CQzSQ					35.5	B							
Do	do	do	1946	72262	do	QzCQ	¾	2.47	3.0		29.5	C						18.4	¾–#16
Do	Lookout Mountain.	Local	1934	40163	Stone	Sandstone		2.53	1.3	2.7					10			S	1½–1
Do	Saint Elmo	do	1934	40783	do	do		2.49	1.8	3.7					7			S	1½–1
Do	Signal Mountain.	Comm	1918	12703	do	Limestone		2.70	.1	3.9					16.0	10			
Do	do	do	1918	12740	do	do		2.69	.1	4.2					16.0	9			
Do	do	Prosp	1934	40754	do	Sandstone		2.43	2.3	19.6						5		U	1½–1
Hardin	Cerro Gordo	do	1934	40485	do	Limestone		2.69	.3	5.3						5		S	1½–1
Do	do	do	1934	40487	do	Argillaceous limestone.		2.67	.5	7.0						6		Q	1½–1
Do	Pittsburg Landing (Tennessee River).	Local	1935	40869	Gravel	Chert	2			5.7		A						19.0	2–#4
Do	do	do	1935	40977	do	do	2											9.3	1½–#4
Do	do	do	1935	42058	do	do					21.6	B						14.7	¾–#4
Do	do	do	1935	42059	do	do	1½			4.8		A						14.1	1½–#4
Do	do	do	1936	42696	do	do	2	2.42	5.4	6.1		A							
Do	Saltillo	Prosp	1934	40488	Stone	Argillaceous limestone.		2.70	.3	4.9					6			S	1½–1
Do	Savannah	do	1934	40489	do	do		2.70	.4	4.7					7			S	1½–1
Henry	Paris	do	1915	8384	do	Sandstone				3.6									
Hickman	Graytown	do	1901	336	do	Limestone		2.69	2.8	11.5					18.8	24			
Do	do	do	1901	337	do	do		2.80	1.4	6.8									
Do	do	do	1901	338	do	Schist		2.50	1.1	4.4									
Do	do	do	1901	359	do	Limestone			1.7	7.9									
Do	do	do	1901	361	do	do		2.80	1.3	7.8									
Houston	Erin	do	1920	15986	do	Siliceous sinter		1.44	23.7	43.1									
Do	Stewart	do	1915	8386	do	Limestone		2.50	1.7						13.0	4			
Jefferson	Jefferson City	do	1922	21061	do	Chert		2.38	2.4	7.9					18.7	4			
Do	do	do	1922	21062	do	do		2.43	1.5	6.5					18.7	7			
Do	Strawberry Plains.	do	1911	5502	do	Limestone		2.75	.1	4.0			21,720		10				

Do		do	1911	5503	do	Dolomite		2.85	.2	2.7			38,070		17				
Do		do	1911	5504	do	Limestone		2.75	.2	4.5			28,340		8				
Do	do	Comm	1923	24418	do	do				2.8									
Do	do	do	1934	40149	do	Argillaceous limestone.					26.6	A							
Do	do	do	1936	42988	do	do		2.79	.4	2.6	21.1	A							
Knox	Asbury	do	1917	11521	do	Marble		2.71	.1	6.0			16,030	13.3	2				
Do	Ebenezer	do	1917	11522	do	do		2.70	.1				9,230	13.6	4				
Do	Knoxville	Prosp	1913	6533	do	do							17,720						
Do	do	do	1914	7769	do	Limestone		2.70	.2	4.5									
Do	do	Comm	1917	11519	do	Marble		2.70	.1	7.0				13.0	3				
Do	do	do	1917	11520	do	do		2.70	.1	5.5				13.6	5				
Do	do	do	1917	11523	do	do		2.70	.1	6.2				13.0	5				
Do	do	do	1917	11524	do	do		2.70	.1	5.5				13.0	3				
Do	do	do	1923	23634	Gravel	QSC	2			11.6		A							
Do	do	do	1925	26957	do	do	2			14.3		A							
Do	do	do	1939	46742	do	SQzQG	1				30.3	B							
Do	do	do	1947	73610	do	QzS	1	2.60	.9		33.0	B						3.9	1–#4
Do	do	do	1947	74328	do	QzS(C)	1	2.59	1.1		31.0	B						2.9	1–#4
Do	do	do	1949	77937	do	SQzC	1½	2.58	1.2		33.2	B						5.1	1½–#4
Do	do	do	1950	82402	do	SCGQL	1				27.1	B						4.8	¾–#4
Do	Knoxville (Tennessee River).	do	1935	42122	do	SCQ	1			3.0		B						5.3	1–#4
Do	do	do	1936	42966	do	SQSh					32.8	B							
Do	Mascot	do	1916	9887	Stone	Dolomite		2.85	.1	4.1				16.0	11				
Do	do	do	1940	51246	do	Argillaceous limestone.					18.2	B							
Do	do	do	1946	71668	do	Dolomitic limestone.		2.80	.0		18.8	A							
Lawrence	Iron City	Prosp	1920	16275	do	Limestone		2.69	.3	5.0				15.0	8				
Do	Ovilla	do	1946	71753	do	do		2.64	1.2		16.0	A							
Do	do	do	1946	71754	do	do		2.67	1.2		17.1	A							
Do	Peter Cave Creek.	Local	1939	46838	do	Argillaceous limestone.				2.5									
Lewis	Napier	Prosp	1947	72808	do	Siliceous limestone.					19.4	A							
Do	Riverside	Local	1935	40978	do	Argillaceous limestone.		2.71	.5	3.8					6			S	1½–1
Do	Ruppertown	do	1946	71752	Slag			2.80	.7		25.3	A							
Loudon	Amarco	do	1917	11524	Stone	Marble		2.70	.1	5.5			29,000	13.0	3				
Do	do	do	1917	11526	do	do		2.70	.2	6.1				12.6	3				
Do	Lenoir City	Prosp	1906	1684	do	Limestone		2.75	.2	4.5				9.3	11				
Do	Meadow	Local	1917	11523	do	Marble		2.70	.1	6.2				13.0	3				
Madison	Jackson	Prosp	1905	1205	do	Ferruginous sandstone.		2.85	1.6					.0	3				
Marion	Jasper	do	1934	40791	do	Sandstone		2.50	.9	2.6					11			S	1½–1
Monroe	Madisonville	do	1916	10315	do	Ferruginous sandstone.		2.85	.2	4.0				17.3	8				
Do	do	do	1916	10316	do	Siliceous limestone.		2.71	.3	6.3				16.7	9				
Do	do	do	1916	10317	do	Limestone		2.68	.5	8.3				16.7	9				
Do	do	do	1916	10318	do	do		2.74	.2	4.2				17.3	8				
Do	do	do	1916	10323	do	Crystalline limestone.		2.69	.2	6.0				13.3	5				
Montgomery.	Clarksville	do	1914	7553	do	Argillaceous limestone.		2.70	.7	4.4				15.6	6				
Do	do	do	1914	7554	do	Limestone		2.65	.4	5.0				15.0	5				
Do	do	do	1914	7555	do	do		2.65	.3	4.6				14.9	7				
Do	do	do	1914	7903	do	Cherty limestone		2.75	.1	3.6				16.9	8				
Do	do	do	1914	8151	do	Limestone		2.70	.3	8.3				16.8	6				
Do	do	Local	1920	17507	do	do		2.53	1.3	4.9				9.7	5				
Overton	Livingston	Prosp	1921	19913	do	do		2.65	.4	5.9				12.9	5				
Perry	Linden	do	1935	40843	do	Argillaceous limestone.		2.68	.6	5.0					6			S	1½–1
Polk	Copperhill	Comm	1911	5686	Slag	Smelter		3.40	.3	5.2									
Do	do	do	1920	15897	do	do				5.5									
Do	do	do	1922	21228	do	do		3.53	.6	4.1				18.0	14				
Do	do	do	1931	33964	do	do		3.60	.6	4.0	34.6	A							
Do	do	do	1942	55932	do	do		3.39	2.1		18.1	B							
Roane	Harriman	do	1913	6826	Stone	Siliceous dolomite.		2.85	.2	2.9				15.4	13				
Do	do	do	1915	9098	do	Dolomite		2.80	.5	5.5				15.2	9				
Do	do	do	1915	9653	do	Argillaceous limestone.		2.70	.2	4.5				15.3	7				
Do	Oliver Springs	Prosp	1909	4047	do	Chert		2.60	.5	20.0									
Do	do	Local	1946	71718	Gravel	Conglomerate	⅜				35.2	D							
Do	do	do	1946	72013	do	QS	⅜	2.59	1.1									9.3	⅜–#16
Scott	Huntsville	Prosp	1905	1240	Stone	Sandstone		2.45	1.4	8.8									

[11] Tested by method for stone.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

TENNESSEE—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Sevier	Elkmont	Prosp	1938	46039	Stone	Feldspathic sandstone.					25.0	A	23,850					S	1½–1
Do	Gatlinburg	do	1933	34980	do	do		2.65	0.3	2.7					13			S	1½–1
Do	do	do	1933	34981	do	do		2.62	.6	9.6					7			Q	1½–1
Do	do	Local	1934	40603	do	Carbonaceous slate.		2.82	.2	5.9								S	1½–1
Do	do	Prosp	1934	40643	do	Argillaceous sandstone.		2.82	.2	4.5					15				
Do	do	do	1934	40644	do	Sandstone		2.75	.2	2.7					12				
Do	do	do	1934	40645	do	Siliceous slate		2.80	.2	6.5					10				
Do	do	do	1934	40646	do	Sandstone		2.74	.3	3.1					9				
Do	do	Local	1934	40647	do	Siliceous slate		2.87	.1	4.2					12				
Do	do	do	1935	40875	do	Sandstone		2.68	.2	2.2					14			S	1½–1
Do	do	do	1935	40876	do	do		2.59	1.0	3.7					9			S	1½–1
Do	do	do	1936	42956	do	Siliceous slate				4.5	21.3	A							
Do	do	do	1937	44477	do	Sandstone				2.2	18.4	A							
Do	do	do	1937	44478	do	do									17			S	1½–1
Do	do	Prosp	1938	44871	do	Feldspathic quartzite.					14.0	A			26				
Do	do	Local	1938	46368	do	do					15.2	B							
Do	do	do	1938	46410	do	do				3.3	17.9	A			13			S	1½–1
Do	do	do	1940	51242	do	do					13.0	B							
Do	do	Prosp	1946	71751	do	do		2.71	.3		13.2	A						.2	1½–#4
Do	do	do	1947	72992	do	Sandstone		2.70	.6		17.7	A						1.6	1½–#4
Do	do	do	1947	72993	do	do		2.66	.4		15.5	A						1.2	1½–#4
Do	do	Local	1947	73213	do	Mica-epidote schist.		2.73	.4		16.8	A	38,550					.8	1½–#4
Do	do	do	1947	74032	Gravel	SQG	2	2.59	1.9		34.6	A							
Do	do	do	1947	74033	do	Granite	2	2.64	.9		34.4	A							
Do	Newfound Gap	do	1933	40040	Stone	Micaceous quartzite.		2.71	.4	4.1				18.7	9			S	1½–1
Do	do	Prosp	1934	40078	do	Sericite schist		2.83	.5	8.6								S	1½–1
Do	Pigeon Forge	do	1950	82307	do	Sandstone		2.39			50.7	A						3.0	1½–#4
Do	Sevierville	Local	1946	70691	do	Limestone		2.76	.5		18.3	A						1.1	1½–⅜
Shelby	Memphis (Mississippi River).	Comm	1934	40148	Gravel	C(QzS)					24.5	A							
Stewart	Dover	Local	1934	40430	Stone	Limestone					41.4	A							
Do	do	do	1934	40608	do	Argillaceous limestone.		2.69	.5	3.7					8				
Sullivan	Bluff City	do	1911	5440	do	Limestone		2.70	.2	5.8				15.2	5				
Do	Bristol	do	1909	3429	do	Dolomite		2.80	.5					18.4	23				
Do	do	do	1909	3430	do	Dolomitic limestone.		2.80	.3					17.7	10				
Do	do	do	1909	3431	do	Dolomite		2.80	.6					17.6	9				
Do	do	do	1909	3432	do	do		2.85	.3					16.3	8				
Do	do	do	1913	7008	do	Siliceous dolomite		2.80	.1	2.6				16.8	15				
Do	do	Prosp	1914	8007	do	Feldspathic sandstone.		2.55	1.0					18.7	5				
Do	Emmett	do	1921	19557	do	Sandstone				2.1								33.9	1–¾
Sumner	Gallatin	Local	1950	82745	do	Limestone												3.1	1½–#4
Unicoi	Erwin	Comm	1944	66841	Gravel	SQzG	1½	2.57	.9		33.1	A							
Union	Luttrell	Local	1917	11525	Stone	Marble		2.73	.1	6.9				12.3	5				
Warren	McMinnville	do	1923	23135	do	Limestone		2.72	.1	3.7				16.7	8				
Washington	Johnson City	Prosp	1919	14464	do	Siliceous limestone		2.81	.2	2.5				17.3	16				
Do	Washington College.	do	1919	14840	do	Limestone		2.70	.5	6.6				15.3	4				
Do	do	do	1919	14841	do	do		2.70	.3	5.7				15.3	5				
Wayne	Butler Creek	Local	1940	49458	Gravel	Chert	2				20.6	A							
Do	Clifton	Comm	1948	74669	do	do	1	2.34	5.0		19.4	B						4.8	1–#4
Do	Collinwood	Local	1940	50995	do	do					18.4	B							
Do	do	do	1940	52258	do	do					24.9	A							
Do	do	do	1940	52259	do	do					31.9	A							
Do	do	do	1941	53080	do	do					20.1	A							
Do	do	do	1941	53081	do	do					18.7	A							
Do	do	do	1941	54983	do	do					18.7	A							
Do	do	Prosp	1945	67781	do	do					20.6	A							

Do	do	do	1945	67782	do	do					20.9	A							
Do	do	Local	1945	67783	do	do					20.1	A							
Do	do	do	1945	67784	do	do					20.1	A							
Do	do	do	1946	70673	do	do					18.5	A							
Do	do	Prosp	1946	70676	do	do					18.7	A							
Do	do	Local	1946	71104	do	do					20.1	A							
Do	do	do	1946	71105	do	do					20.3	A							
Do	do	Prosp	1948	75271	do	do	2				18.5	A							
Do	do	do	1948	75462	do	do					23.2	A							
Do	Cypress Inn	Local	1940	49747	do	do	1½	2.24	6.0		17.9	A							
Do	do	do	1940	49831	do	do	1½	2.32	3.5		13.6	A							
Do	do	do	1940	50997	do	do					14.7	B							
Do	Cypress Inn (Cypress Creek).	do	1940	49220	do	do	3		5.3		19.3	A						17.5	3–#4
Do	Cypress Inn (Gilchrist Branch).	do	1940	49221	do	do	1½				19.4	A						16.9	1½–#4
Do	Double Branches Creek.	do	1939	46831	Stone	Argillaceous limestone.				14.1									
Do	Three Churches (Indian Creek).	Prosp	1940	49219	Gravel	Chert	3½		5.7		20.4	A						17.6	3½–#4
Do	Victory	Local	1945	67785	do	do					16.6	B							
Do	Waynesboro	do	1939	46839	Stone	Limestone				9.0									
Do	do	do	1939	46840	do	Argillaceous limestone.				3.7									
Williamson	Franklin	Comm	1914	7557	do	Limestone		2.70	.0	4.6				15.8	5				
Do	do	do	1935	40877	do	do		2.72	.1	5.0					5			S	1½–1
Do	do	Local	1937	44682	do	Sandstone					32.6	A						S	1½–1
Do	do	Comm	1940	51045	do	Limestone					26.8	B							
Do	do	do	1947	73607	do	do					25.3	B							

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Baylor	Seymour	Local	1928	30659	Stone	Argillaceous limestone.		2.51	3.0	5.3				13.3	7				
Bell	Camp Hood	Prosp	1945	68309	do	Marl									5				
Do	do	do	1945	68310	do	Limestone									4				
Bexar	San Antonio	do	1905	1199	do	do		2.45	3.2					.0	4				
Do	do	do	1905	1202	do	do		2.30	5.8					.0	3				
Do	do	do	1905	1229	do	do		2.55	1.4	5.2				7.1	4				
Do	do	Local	1929	31548	do	do		2.50	1.9									S	1½–1
Do	do	Prosp	1942	59154	do	Flint							124,400						
Do	do	Local	1942	60085	Gravel	Chert	¾	2.55			15.1	B							
Do	do	do	1942	60094	do	do		2.60	.2		12.0	B							
Bowie	Texarkana	Comm	1920	16780	do	CQ	2			30.8		A							
Do	do	do	1925	27582	do	Chert	2			10.0		A							
Brewster	Alpine	Local	1924	25919	Stone	do				1.6									
Brown	Blanket	do	1920	16633	do	Limestone		2.61	.9	6.7					5				
Do	Brownwood	Comm	1929	31528	do	do		2.69	.3									S	1½–1
Burleson	Sand Pit Station	Local	1905	1500	do	Sandstone		2.25	2.5	4.2				16.7	14				
Burnet	Briggs	do	1922	20986	Gravel	Limestone	2½			15.5		A							
Do	Burnet	Prosp	1924	26271	Stone	do		2.71	.1	5.4			25,280	16.7	4			S	1½–1
Do	Marble Falls	do	1922	21339	do	Calcareous slate		2.61	.5	4.0			35,180	18.3	22				
Do	do	do	1924	26270	do	Siliceous limestone		2.63	.4	3.0				18.0	26			S	1½–1
Do	do	do	1942	55844	do	do		2.67	.3		12.7	A	56,500		14				
Do	Sudduth	do	1924	26269	do	Dolomitic marble		2.69	.2	5.5				16.7	9			S	1½–1
Callahan	Baird	Local	1925	27507	do	Limestone		2.59	.8	4.4				14.7	8				
Do	do	do	1927	29600	do	Argillaceous limestone.				4.1								U	1½–1
Do	do	do	1929	31524	do	do		2.65	.8									S	1½–1
Do	do	do	1929	31612	do	do		2.65	.8									S	1½–1
Camp	Pittsburg	do	1924	25386	do	Ferruginous sandstone.		2.89	1.5	5.2				16.0	8				
Cass	Linden	do	1928	30081	do	do		2.35	4.7	29.3				6.7	6				
Do	do	do	1929	31342	do	do				20.2									
Do	do	do	1929	31507	do	do				23.8									
Do	do	do	1929	31568	do	do				20.9									
Coke	Bronte	Comm	1929	31523	Gravel	LSQ	2	2.69	.3	9.0		A							
Coleman	Coleman	Prosp	1922	21209	Stone	Argillaceous limestone.		2.68	.7	4.0				15.3	8				
Colorado	Alleyton	Comm	1929	31376	Gravel	CQ		2.60	.1	9.0		A							
Do	do	do	1942	60122	do	CQ	1½	2.52	1.0		27.0	B							
Do	Columbus	do	1921	20492	do	CQ	2			9.9		A							
Do	do	do	1926	28448	do	CQ	2			11.2		A							
Do	do	do	1926	28564	do	CQ	2			11.0		A							
Do	do	do	1927	29216	do	CQ	2½			7.0		A							
Do	do	do	1927	29218	do	CQ	2½			9.8		A							
Do	do	do	1927	29465	do	CQ	2½			10.0		A							
Do	do	do	1927	29496	do	CQ	2			9.0		A							

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

TEXAS—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Colorado	Columbus	Comm	1927	29625	Gravel	CQ	2½			9.1		A							
Do	do	do	1927	29665	do	CQ	2			7.6		A							
Do	do	do	1928	30031	do	CQ	2			8.1		A							
Do	do	do	1928	30161	do	CQ	2½			9.9		A							
Do	do	do	1928	30219	do	CQ	2½			9.7		A							
Do	do	do	1928	30610	do	CQ	2			7.6		A							
Do	do	do	1928	30611	do	CQ	2½			8.5		A							
Do	do	do	1928	30704	do	CQ	2½			8.3		A							
Do	do	do	1928	30716	do	CQ	2			8.4		A							
Do	do	do	1928	30754	do	CQ	2			11.5		A							
Do	do	do	1929	31545	do	CQ	2½	2.57	0.5	8.9		A							
Do	do	do	1929	31699	do	CQ	2½	2.59	.4	10.0		A							
Do	do	do	1929	32013	do	CQ	2½	2.60	.5	9.3		A							
Do	Eagle Lake	do	1942	59158	do	CQQz	1½	2.53	1.1		26.5	B							
Do	Glidden	do	1924	26097	do	CQ	2			9.2		A							
Do	do	do	1924	26110	do	CQ	2			16.9		A							
Do	do	do	1927	29541	do	Chert	2½			7.8		A							
Do	do	do	1929	31377	do	CQ	2	2.60	.2	7.7		A							
Comal	New Braunfels	do	1914	7609	Stone	Limestone		2.65	.1	4.8				13.2	6				
Do	do	do	1921	18686	do	do		2.56	1.5	5.5				11.3	6				
Do	do	do	1921	20092	do	do		2.58	.8	5.5				12.0	6				
Do	do	do	1926	28305	do	do				9.8								S	1½–1
Do	do	do	1926	28306	do	do				9.8								S	1½–1
Do	do	do	1926	28377	do	do				9.4								S	1½–1
Do	do	do	1926	28386	do	do				9.8									
Do	do	do	1926	28676	do	do				7.0									
Do	do	do	1927	29393	do	do		2.42	2.4	10.0									
Do	do	do	1927	29394	do	do				5.2									
Do	do	do	1927	29432	do	do		2.43	1.7	8.7				2.7	4				
Do	do	do	1927	29441	do	do				9.8									
Do	do	do	1927	29442	do	do				9.4									
Do	do	do	1927	29528	do	do				8.5									
Do	do	do	1927	29644	do	do				7.8								S	1½–1
Do	do	do	1928	30261	do	do		2.54	.9	4.7								S	1½–1
Do	do	do	1929	31442	do	do		2.48	1.7									S	1½–1
Do	do	do	1929	31552	do	Argillaceous limestone.		2.45	2.2									U	1½–1
Concho	Eola	Local	1928	30168	do	do		2.42	3.0									U	1½–1
Cooke	Gainesville	do	1933	34871	Gravel	Limestone	2	2.51	2.9	16.6		A							
Do	do	do	1933	34898	do	do	2	2.51	2.9	14.8		A							
Cottle	Paducah	do	1929	31288	do	QCSL	3			11.6		A							
Do	do	do	1929	31289	do	QCSL	2½			7.7		A							
Do	do	do	1929	32342	do	QCG	2			8.5		A							
Culberson	Kent	Prosp	1922	21101	do	RL	2			6.3		A							
Do	do	do	1922	21102	do	Limestone	2½			8.8		A							
Dallas	Dallas	Local	1921	18990	do	do	1½			13.7		A							
Do	do	Comm	1921	19755	do	do	1½			12.8		A							
Do	do	do	1925	26825	do	LQS	2			16.1		A							
Do	Eagle Ford	do	1922	21096	do	Chert	1½			15.7		A							
Do	Grand Prairie	do	1929	31327	do	Limestone	2			11.7		A							
Dickens	Spur	Local	1930	33067	do	CQS	1			6.3		D						U	1–#4
Eastland	Cisco	Prosp	1922	21145	Stone	Ferruginous sandstone.				40.0									
Do	Ranger	Comm	1927	29601	do	Argillaceous limestone.				8.3								U	1½–1
Do	Tiffin	do	1928	30024	do	do		2.60	1.4	4.7				12.0	8				
Do	do	do	1928	30781	do	do		2.60	1.6	4.2								S	1½–1
Do	do	do	1928	31671	do	do				4.0									
Ellis	Midlothian	Prosp	1927	29457	do	do		1.97	12.1	15.0								U	1½–1
Do	do	do	1927	29458	do	do		1.93	12.3	20.2								U	1½–1
Do	do	do	1927	29459	do	do		1.92	13.2	23.0								U	1½–1
Do	Waxahachie	Local	1927	29455	do	do		2.10	8.6	16.6								U	1½–1
Do	do	do	1927	29456	do	do		1.94	12.4	20.0								U	1½–1
Do	do	do	1927	29460	do	do		1.84	16.0	23.6								U	1½–1
Do	do	do	1927	29679	do	do		1.98	11.9	11.5				.0	3			U	1½–1

Do	do	do	1927	30079	do	do				10.4								U	1½–1
El Paso	El Paso	do	1907	2084	do	Syenite		2.55	1.0						18.2	11			
Do	do	do	1907	2185	do	Syenite porphyry		2.55	1.1	2.5					18.2	9			
Do	do	do	1909	3727	do	Syenite		2.55	.9	4.1					18.1	13			
Do	do	Prosp	1919	13980	Slag	Smelter		3.56	.7	7.1									
Do	do	do	1919	15004	do	do		3.59	.4	4.8									
Do	do	do	1919	15005	do	do		3.40	.3	9.8									
Erath	Dublin	do	1913	7297	Stone	Fossiliferous limestone.		2.70	.4	6.7					14.6	4			
Fayette	Fayetteville	Comm	1942	60121	Gravel		2	2.49	2.0		21.7	B							
Do	do	do	1943	61669	do	CQzQ	1	2.45	2.4		19.9	C							
Do	West Point	do	1932	34591	do	CQSL		2.56	.7	8.8		A							
Do	do	do	1939	48358	do	QQzCDo	2	2.58	.5		23.3	A							
Do	do	do	1942	59155	do	C(QL)		2.54	1.1		28.4	B							
Floyd	Quitaque	do	1929	31398	do	QSCoC	2	2.54	1.2	14.1		A						U	1½–1
Do	do	do	1929	31411	do	QCL	2½	2.43	2.7	10.2		A						U	1½–1
Do	do	do	1929	32016	do	QCSCo	2	2.55	1.3	16.7		A							
Do	do	do	1929	32331	Stone	Calcareous sandstone.		2.59	1.1	5.4								S	1½–1
Do	do	do	1929	32332	do	Calcareous conglomerate.		2.43	2.6	21.4								U	1½–1
Do	do	do	1929	32377	Gravel	QCS	1½	2.54	1.0	4.8		C						S	1½–1
Do	do	do	1929	32378	do	Sandstone		2.53	1.6	28.6		A						U	1½–1
Do	do	do	1930	32453	do	QCSLCo	2	2.53	1.8	13.2		A							
Do	do	do	1930	32481	do	QCSLCo	2	2.58	.8	11.0		A							
Foard	Vivian	Prosp	1931	34159	Stone	Argillaceous dolomite.				8.4									
Freestone	Oakwood	Local	1927	29656	do	Sandstone		2.63	.5	4.7					16.7	8			
Gillespie	Fredericksburg	do	1920	17633	do	Limestone				6.9									
Gonzales	Hochheim	do	1928	30170	do	Sandstone		2.26	2.0	11.8								S	1½–1
Grayson	Denison	do	1905	1479	do	Limestone		2.55	1.7	5.2					12.8	8			
Do	do	do	1905	1480	do	do		2.60	1.2	4.4					15.4	9			
Do	do	Prosp	1909	3412	do	Ferruginous limestone.		2.45	3.7						12.3	5			
Do	do	do	1909	3413	do	do		2.55	1.7						15.6	8			
Do	do	do	1909	3414	do	Limestone		2.60	1.4						15.9	11			
Do	do	Local	1911	5642	do	Argillaceous limestone.		2.60	1.3	5.7					13.7	8			
Do	do	do	1912	5851	do	do		2.55	2.3	7.1					14.8	5			
Do	do	do	1912	5852	do	do		2.55	1.8	6.6					14.6	6			
Do	Sherman	Prosp	1911	5709	do	Granite[6]		2.60	.4	4.8					19.3	8			
Do	do	do	1912	5938	do	Argillaceous limestone.		2.15	8.9	7.5					.0	3			
Gregg	Gladewater	do	1917	12491	do	Ferruginous sandstone.		2.29	6.3	16.6					3.8	4			
Do	Longview	do	1917	12488	do	Ferruginous conglomerate.		2.52	6.2	25.8					9.0	3			
Do	do	do	1917	12489	do	Ferruginous sandstone.		2.83	2.8	13.7					13.5	6			
Do	do	do	1917	12490	do	do		2.39	4.9	13.9					11.3	3			
Hall	Estelline	Local	1933	34870	Gravel	QQzCL	2		.7	9.5		A							
Hardeman	Chillicothe	Comm	1929	31490	do	QCL	2½	2.66	.0	5.6		A							
Harris	Houston	Local	1920	17154	do	CQ	2			9.6		A							
Harrison	Karnack	Prosp	1911	5634A	Stone	Ferruginous sandstone.		2.55	2.1	13.8					4.8	4			
Do	do	do	1911	5634B	do	do		2.70	1.8	19.6					13.8	8			
Do	do	do	1911	5634C	do	do		2.75	.9	12.1					10.7	7			
Do	Marshall	do	1907	1958	do	do		2.45	.3	22.9					2.7	3			
Hemphill	Canadian	Local	1921	19703	Gravel	QCSL	2			9.9		A							
Hidalgo	Sam Fordyce	Comm	1924	25015	do	C(S)	2			5.2		A							
Do	do	do	1928	30232	do	CQL	2½			3.7		A							
Do	do	do	1930	33169	do	Chert	3	2.59	.5	4.0		A							
Do	Sullivan City	do	1942	59156	do	CLQz		2.56	1.1		18.0	B							
Hill	Hillsboro	Prosp	1908	2685	Stone	Limestone		2.30	6.0	9.5									
Hood	Granbury	Local	1920	16663	Gravel	LQ	2			13.8		A							
Houston	Crockett	Prosp	1922	20987	do	QC	2			5.2		A							
Hudspeth	Allamoore	Local	1928	30261	Stone	Rhyolite[6]		2.65	.3	4.6									
Jack	Jacksboro	Prosp	1909	3869	do	Limestone		2.65	1.2	5.0									
Do	do	do	1913	7331	do	do		2.65	1.0	5.2					13.5	4			
Do	do	do	1913	7332	do	do		2.65	.8	3.8					14.1	6			
Do	do	Local	1925	26956	do	Argillaceous limestone.		2.66	.5	6.6					14.7	6			
Do	do	Comm	1927	29680	do	do				4.2									
Do	do	do	1929	31693	do	Limestone		2.58	1.3	5.6								S	1½–1
Do	Stewarton	Local	1911	5395	do	do		2.70	.5	4.9					14.8	9			
Jones	Lueders	Comm	1924	24512	do	Argillaceous limestone.		2.59	2.1	6.8			14,930	12.0	5				
Do	do	do	1924	24513	do	Limestone		2.32	4.1	8.4			8,890	4.3	4				

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

TEXAS—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Jones	Lueders	Comm	1924	24514	Stone	Argillaceous limestone.		2.32	3.5	8.4			10,110	2.3	3				
Do	do	do	1924	24515	do	do		2.39	4.1	10.4			6,510	7.3	3				
Do	do	do	1924	24516	do	do		2.24	5.3	12.2			6,700	.0	3				
Do	do	do	1924	24517	do	do		2.32	4.1	8.6			8,920	2.3	4				
Do	do	do	1925	27538	do	Limestone		2.31	4.1	11.4				4.0	4			U	1½–1
Do	do	Local	1925	27539	do	Argillaceous limestone.		2.34	3.4	13.0				6.7	3			Q	1½–1
Do	do	Prosp	1925	27540	do	do		2.42	3.2	14.2				13.3	6				
Do	do	do	1929	31317	do	do		2.44	2.8	6.6								Q	1½–1
Do	do	do	1929	31439	do	do		2.41	3.2	6.3								S	1½–1
Do	do	do	1929	31515	do	Limestone				5.8									
Kaufman	Bois D'Arc	Comm	1939	48357	Gravel	QSL(Sh)	1	2.64	1.1		25.1	B							
Do	Chief	Prosp	1913	7015	Stone	Siliceous limestone		2.60	1.0	9.0				14.5	7				
Do	Terrell	Local	1912	6314	do	do		2.45	2.7	12.0									
Do	do	do	1913	7016	do	do		2.50	1.9	11.7				5.0	4				
Kerr	Hunt	do	1928	30176	Gravel	L(C)	2			34.8		A							
Do	Kerrville	do	1928	30266	Stone	Limestone		2.42	2.4	5.2								U	1½–1
Do	Mountain Home	do	1929	31649	do	do				7.0									
Kinney	Brackettville (Pinto Creek).	do	1929	31426	Gravel	do	2	2.61	1.2	8.7		A							
Do	do	do	1929	31637	do	do	2	2.63	.8	8.9		A							
Lamar	Paris	Prosp	1909	3147	Stone	Sandstone		2.30	5.1	11.3				.0	4				
Limestone	Groesbeck	Local	1920	16828	do	Siliceous limestone		2.54	1.3	6.0				14.0	9				
Do	Springfield	do	1915	8591	do	Limestone		2.60	.9	4.5				15.0	7				
Do	do	do	1915	8685	do	Fossiliferous limestone.		2.50	.2	8.2				4.0	4				
Do	Tehuacana	Prosp	1913	7224	do	Argillaceous limestone.		2.55	1.4	7.6				7.8	4				
Llano	Llano	do	1920	17497	do	Rhyolite		2.63	.2	2.3				19.3	21				
Do	do	Local	1922	22223	do	Granite porphyry		2.63	.2	2.4				18.7	20				
Do	do	Prosp	1924	26268	do	Granite		2.58	.4	3.3			26,140	18.7	10			S	1½–1
Do	do	Comm	1941	55676	do	do		2.64	.4				41,900		10				
Do	do	do	1941	55677	do	do					31.9	B							
Do	do	Local	1942	55846	do	do		2.65	.2		15.4	A	53,600		20				
Do	do	Comm	1942	55847	do	do		2.61	.3		28.5	A	41,200		10				
Do	do	Prosp	1942	55848	do	Aplitic granite		2.62	.4		23.5	A	46,500		17				
McCulloch	Camp San Saba (San Saba River).	Comm	1921	19688	Gravel	Limestone	2			11.4		A							
McLennan	Waco	do	1924	26156	do	QL	2½			19.0		A							
Do	do	do	1925	26710	do	QCL	2			14.8		A							
Do	do	do	1929	31673	do	QCL	2	2.54	2.5	16.5		A							
Madison	Madisonville	Local	1920	17442	Stone	Sandstone		2.17	4.9	5.8				13.0	9				
Marion	Jefferson	do	1927	29206	do	Ferruginous sandstone.		2.24	7.1	25.0				9.3	4				
Mitchell	Loraine	do	1926	28625	do	Limestone				9.4								U	1½–1
Do	do	do	1927	28785	do	Argillaceous limestone.		2.58	1.5	7.2				12.0	7			U	1½–1
Do	do	do	1927	29324	do	do		2.53	2.1	10.3				10.0	5			U	1½–1
Do	do	do	1927	29352	do	do		2.58	1.3	6.2									
Do	do	do	1927	29472	do	do		2.56	1.5	8.2				13.3	7				
Do	do	do	1928	30025	do	Limestone		2.58	1.5	6.9				12.0	6				
Do	do	do	1928	30030	do	do				5.9									
Montague	Bowie	Prosp	1917	11347	do	Quartz conglomerate.		2.38	2.9	21.6									
Motley	Matador	Local	1930	32490	Gravel			2.59	.7	6.2		A							
Navarro	Richland	Prosp	1912	5955	Stone	Crystalline limestone.		2.65	.8	6.2				15.6	9				
Do	do	do	1913	7070	do	Limestone		2.70	.4	5.5				14.1	6				
Do	do	do	1913	7209	do	do		2.70	.6	3.8				13.3	6				
Do	do	Local	1930	33168	do	Argillaceous limestone.		2.60	1.2	4.0									
Nolan	Maryneal	Prosp	1910	4327	do	Limestone		2.55	1.6	6.2				13.7	5				
Do	do	Local	1911	5432	do	do		2.55	1.0	6.2				13.3	4				

Oldham	Klox Spur	Comm	1929	31492	Gravel	QCSL	2½	2.65	.5	9.8		A						
Do	Tascosa	do	1921	18325	do	QzQ	2½			10.2		A						
Do	do	do	1929	31505	do	QGnSL	2½	2.58	1.0	8.1		A						
Palo Pinto	Mineral Wells	do	1910	4131	Stone	Limestone		2.65	.7	5.5				14.5	7			
Do	do	do	1921	19458	do	Argillaceous limestone.		2.60	1.5	4.3				15.3	6			
Do	do	do	1924	24831	do	Crystalline limestone.		2.57	1.0	5.6				13.3	5		S	1½–1
Do	do	do	1924	24832	do	Argillaceous limestone.		2.67	.5	5.0				16.7	8		Q	1½–1
Do	do	do	1924	24833	do	do		2.68	.4	5.6				13.7	7		U	1½–1
Do	Strawn	Prosp	1913	6579	do	Limestone		2.70	.2	4.2				13.5	6			
Potter	Ady	Comm	1929	32089	Gravel	QSScSlC	3	2.66	.3	11.7		A						
Do	Grass Spur	Local	1921	18416	do	QCS	2½			8.6		A						
Runnels	Ballinger (Colorado River).	do	1920	16938	do	QCL	2			8.3		A						
Do	Winters	Prosp	1922	21704	do	Limestone	2½			10.3		A						
Scheicher	Eldorado	Local	1921	19397	Stone	Argillaceous limestone.		2.36	3.5	12.4				13.3	5			
Do	do	do	1921	19398	do	Limestone		2.40	3.8	7.9				.0	5			
Shackelford	Acampo	do	1929	31586	do	Siliceous limestone.		2.63	1.2	4.3				13.3	7			
Do	Albany	do	1929	31438	do	Limestone				4.3								
Do	do	Prosp	1929	31513	do	do		2.60	.8	4.0				12.0	7			
Do	do	do	1929	31514	do	do				6.4								
Smith	Lindale	do	1912	6396	do	Sandstone		2.60	.2	4.2				18.8	6			
Do	do	do	1912	6398	do	Calcareous sandstone.		2.65	.5	4.3				15.3	6			
Do	Noonday	do	1912	6397	do	Conglomerate		2.75	1.9	26.8								
Do	Starrville	do	1920	17074	do	Ferruginous sandstone.		2.83	.2	5.7				17.3	10			
Do	do	do	1920	17080	do	do		2.66	5.1	27.3				12.0	4			
Tarrant	Arlington	Comm	1927	28770	Gravel	Limestone	2			15.4		A						
Do	Benbrook	Local	1925	26747	Stone	Argillaceous limestone.		2.33	5.3	7.8				5.7	3			
Do	do	do	1925	26950	do	do		2.34	5.3	8.0				10.0	3		U	1½–1
Do	Fort Worth	Comm	1926	28384	Gravel	Limestone	2			22.8		A						
Do	do	Local	1928	30080	Stone	Argillaceous limestone.		2.62	1.1	5.3				15.3	8			
Do	do	Comm	1937	44234	Gravel	Limestone				15.3	31.0	A						
Do	Tarrant	do	1926	28228	do	do	2			14.2		A						
Taylor	Abilene	Prosp	1911	5455	Stone	do		2.65	.9	4.0				14.2	7			
Do	Elmdale	Local	1927	29399	do	Argillaceous limestone.		2.53	1.7	6.6				13.3	5			
Do	Trent	do	1923	30189	do	Argillaceous dolomite.		2.45	3.1	5.8				12.0	9		S	1½–1
Do	Tuscola	Prosp	1920	16937	Gravel	Limestone				11.4		A						
Throckmorton	Throckmorton	Local	1930	33002	Stone	Argillaceous mestone.		2.68	.3	2.6				16.0	8			
Do	do	do	1930	33003	do	do		2.60	.9	5.7				9.0	6			
Do	do	Prosp	1930	33004	do	do		2.56	1.5	5.6				10.7	8			
Tom Green	San Angelo	Local	1920	17020	do	Limestone conglomerate.		2.64	.7	5.6				17.7	5			
Do	do	Prosp	1921	17943	do	Dolomite		2.49	3.0	4.8				13.0	9			
Do	do	Local	1921	19103	Gravel	Limestone	2			10.6		A						
Do	do	do	1928	30282	Stone	do		2.40	3.2	5.4				11.3	7		S	1½–1
Travis	Austin	Prosp	1914	7763	do	Nepheline basalt		3.20	.1	1.7				18.7	24			
Do	do	do	1918	13106	do	do		3.12	.0	2.8				18.7	29			
Do	do	do	1942	55845	do	Olivine basalt		3.15	.4		9.8	A	67,800		20			
Trinity	Trinity	do	1924	24543	do	Opaline sandstone		2.18	4.5	6.4				13.3	10			
Uvalde	Knippa	do	1913	7129	do	Nepheline basalt		3.15	.2	1.8				17.5	15			
Do	do	Comm	1941	55752	do	Olivine basalt		3.16	.2		7.4	B	50,800					
Do	do	do	1942	55843	do	do		3.11	.4		9.7	B	51,900		13			
Do	do	do	1943	61677	do	do		3.16	.5		10.4	B						
Victoria	Victoria (Guadalupe River).	do	1924	24668	Gravel	CQ	2			5.1		A						
Do	do	do	1924	25486	do	CQQz	2½			4.6		A						
Do	do	do	1930	32432	do	Chert	2½	2.58	.4	5.1		A						
Do	do	do	1930	32435	do	do	3	2.58	.6	4.5		A						
Do	do	do	1931	34048	do	CQ	2½	2.60	.6	4.8		A						
Do	do	do	1931	34050	do	CQL	2½	2.60	.6	5.4		A						
Do	do	do	1942	59157	do	C(QQz)	1	2.57	.9		18.8	B						
Walker	Huntsville	do	1926	28720	Stone	Sandstone				8.2							S	1½–1
Washington	Gay Hill	do	1905	1499	do	Quartzite		2.30	1.9	5.0				16.7	12			
Webb	Laredo	Local	1920	17555	Gravel	CQS	2			4.5		A						
Do	do	do	1921	20058	do	Chert	2½			4.2		A						
Do	do	Comm	1927	29624	do	CQRSL	2			4.2		A						
Do	do	do	1928	30108	do	RQCL	3			5.2		A						
Do	do	do	1929	31323	do	QCS	2			5.0		A						

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

TEXAS—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Webb	Laredo	Comm	1929	32060	Gravel	RSQzL	2½	2.59	0.5	7.2		A							
Wheeler	Shamrock	Local	1931	34566	do	QCS	2	2.62	.6	10.8		A							
Do	do	do	1931	34578	do	QGnSC	2											S	2–¾
Williamson	Round Rock	Prosp	1908	2706	Stone	Limestone		2.50	2.0	10.7				0.0	4				
Do	do	do	1908	2707	do	do		2.55	1.7	7.1				13.2	4				
Do	do	Local	1908	2708	do	do		2.45	3.3	23.8				5.3	3				
Wise	Bridgeport	Prosp	1910	4412	do	do		2.70	.2	5.5				14.3	5				
Do	do	do	1913	6600	do	do		2.65	.6	6.8				12.2	6				
Do	do	do	1913	6667	do	do		2.70	.4	6.4				13.8	5				
Do	Chico	Local	1913	6683	do	do		2.70	.2					15.6	6				
Do	do	do	1913	6684	do	do		2.70	.2	6.1				14.6	6				
Do	do	do	1913	7242	do	do		2.70	.2	4.3				14.1	4				
Do	do	Comm	1917	11395	do	do		2.71	.2	5.7				14.3	4				
Do	do	do	1924	25208	do	do				4.3								Q	1½–1
Do	do	do	1927	29402	do	Argillaceous limestone.				4.6									
Do	do	do	1927	29545	do	Limestone		2.71	.2	4.4			21,080	14.7	5			S	1½–1
Do	Decatur	Local	1920	17302	do	Fossiliferous limestone.		2.50	2.1	17.8									
Young	Graham	do	1928	30757	do	Ferruginous sandstone.		2.07	7.0	22.2									
Do	do	do	1928	30758	do	Ferruginous conglomerate.				17.4									
Do	do	do	1928	31382	do	Argillaceous limestone.		2.62	.8	3.6								S	1½–1
Do	do	do	1929	31659	do	Ferruginous sandstone.		2.10	6.8	22.4				.7	3				
Do	do	do	1929	31660	do	do				32.6									
Do	do	do	1929	32226	do	Argillaceous limestone.		2.57	1.0	4.5				15.3	10				
Do	do	do	1929	32312	do	Ferruginous sandstone.		2.12	7.3	22.2				2.7	3				

UTAH

Carbon	Price	Prosp	1919	14257	Stone	Argillaceous limestone.		2.51	2.1	5.8				15.3	7				
Do	do	do	1919	14258	do	Calcareous sandstone.		2.58	1.3	6.3				14.7	8				
Emery	Castle Dale	do	1919	14252	do	Limestone conglomerate.		2.47	2.6	17.3									
Do	do	do	1919	14253	do	Argillaceous limestone.		2.69	.3	4.7				16.0	6				
Do	do	do	1919	14254	do	Calcareous sandstone.		2.59	1.3	3.3				15.3	19				
Do	Emery	do	1919	14249	do	Limestone		2.61	1.3	7.1				16.0	12				
Do	Ferron	do	1919	14250	do	do		2.70	.3	4.9				16.7	6				
Do	do	do	1919	14251	do	Argillaceous limestone.		2.66	.6	4.5				15.3	7				
Do	Poison Spring Bench.	do	1919	14867	do	do		2.31	4.1	7.3				12.0	3				
Do	do	do	1919	15261	do	do		2.24	3.4	8.4				10.7	5				
Garfield	Panguitch (Sevier River).	Local	1947	73252	Gravel	LQAn(R)	2½											29.6	2–#4
Iron	Cedar City	do	1947	73253	do	LS(RQ)	2½											20.4	2–#4
Morgan	Morgan	Prosp	1914	8191	Stone	Limestone conglomerate.		2.65	.2	7.2									
Salt Lake	Garfield	do	1919	15107	Slag	Smelter		3.24	.1	5.0									
Do	do	do	1919	15109	do	do		3.34	.7	6.6				18.0	18				
Do	Lehi	Comm	1945	67174	Gravel	QzLSG	2½											7.1	2–#4
Do	Midvale	Prosp	1919	14643	Slag	Smelter		3.55	.4	4.7				14.7	7				
Do	Salt Lake City	do	1907	1995	Stone	Limestone		2.70	.5	2.9				16.8	12				
Do	do	do	1907	1997	do	do		2.55	1.4	3.1				17.9	20				
Do	do	do	1909	3371	do	do		2.65	6	4.1				16.9	11				

Do	do	do	1910	4121	Slag	Smelter		3.30	.3	4.7									
Do	do	Comm	1945	67175	Gravel	QzSL(QGnDG)	1½											3.5	1½–⅜
Do	Sandy	Prosp	1910	4122	Slag	Smelter		3.50	.2	5.6									
Utah	Provo	do	1909	3331	Stone	Granite and quartzite.		2.65	.1	6.2				18.7	7				
Do	do	do	1909	3332	do	Argillaceous sandstone.		2.70	.7	5.8				17.4	6				
Do	do	do	1909	3333	do	Chert		2.60	.7	29.2									
Do	do	do	1909	3334	do	Sericite schist		2.80	.1	6.2				16.2	7				
Do	do	do	1909	3337	do	Siliceous limestone.		2.60	1.5	3.6				18.2	20				
Do	do	do	1909	3338	do	Limestone		2.65	.3	3.0									
Do	do	do	1910	4744	do	Bituminous sandstone.		2.25	1.0	5.2				5.6	6				

VERMONT

Addison	Middlebury	Prosp	1907	1946	Stone	Limestone		2.75	0.4	3.8				15.4	6				
Bennington	Bennington	do	1908	2884	do	Dolomite		2.85	.2	4.2				15.0	8				
Do	do	do	1908	2885	do	do		2.85	.2	3.6				16.6	6				
Do	do	do	1908	2886	do	do		2.85	.2	4.1				14.5	7				
Do	do	do	1908	2887	do	do		2.80	.6	4.1				16.9	8				
Do	do	do	1908	2888	do	Quartzite		2.65	.2	2.3									
Do	do	do	1908	2889	do	Limestone		2.70	.2	5.0									
Do	do	do	1913	7109	do	Quartzite		2.65	.2	6.8				19.2	4				
Do	Dorset	Comm	1917	11497	do	Marble		2.70	.3				7,110	4.0	3				
Do	North Pownal	Local	1905	1220	do	do		2.70	.2	5.8				8.9	6				
Do	do	do	1905	1256	do	Limestone		2.75	.2	3.2				12.6	5				
Caledonia	Hardwick	Comm	1913	6685	do	Granite		2.65	.2	4.2				17.5	6				
Do	do	do	1917	12190	do	do		2.65	.7					17.0	8				
Chittenden	Burlington	Local	1909	3329	do	Dolomitic marble		2.80	.1	3.2				17.3	22				
Do	do	Prosp	1909	3330	do	do		2.80	.2	2.5				16.6	18				
Do	do	do	1915	8369	do	Dolomite		2.80	.2	2.4				17.2	15				
Do	do	do	1915	8370	do	Argillaceous dolomite.		2.85	.2	3.4				18.0	11				
Do	do	do	1916	10848	do	Siliceous dolomite		2.61	.2	3.7				16.7	13				
Do	do	Comm	1917	11503	do	Siliceous marble		2.85	.4				40,700	17.6	24				
Do	do	Local	1920	16688	do	Quartzite				3.1									
Do	do	do	1920	16689	do	Dolomite				2.9									
Franklin	Saint Albans	Prosp	1906	1678	do	Feldspathic sandstone.		2.70	.2	2.8				19.5	17				
Do	do	do	1906	1680	do	Dolomite		2.85	.2	4.2				16.3	9				
Do	do	Local	1906	1681	do	Feldspathic sandstone.		2.65	.2	2.3				19.3	12				
Do	Swanton	do	1906	1726	do	Limestone		2.75	.1	5.7									
Do	do	Comm	1917	11489	do	Marble		2.84	.1				12,720	16.7	16				
Grand Isle	Isle La Motte	do	1906	1679	do	Limestone		2.70	.4	4.0				17.3	9				
Do	do	do	1917	11490	do	Marble		2.75	.1	4.6			18,760	14.3	9				
Orleans	Barton	Local	1907	2372	do	Biotite hornblende schist.		2.90	.1	2.8				18.5	18				
Do	do	Prosp	1907	2373	do	Granite		2.65	.2	8.1				17.7	5				
Do	Derby	do	1917	11191	do	Siliceous limestone		2.74	.3	3.0				17.3	9				
Rutland	Brandon	Comm	1917	11494	do	Marble		2.69	.2	7.2			9,520	11.0	2				
Do	do	do	1920	16352	do	do								12.7					
Do	do	Prosp	1947	73284	Gravel	LQzQG	2½	2.68	.5		22.6	A						1.1	2½–#4
Do	Danby	Comm	1917	11496	Stone	Marble		2.69	.2	10.6			7,380	6.7	3				
Do	East Wallingford.	Prosp	1911	5543	do	Diabase [6]		2.95	.5	2.6			16,800	17.2	15				
Do	Florence	Comm	1917	11498	do	Marble		2.70	.3	6.4			8,770	8.7	3				
Do	do	do	1917	11500	do	do		2.70	.2	7.8			9,010	9.0	3				
Do	Pittsfield	Prosp	1913	6955	do	Quartzite		2.65	.1	2.3				19.2	12				
Do	Pittsford	Comm	1917	11491	do	Marble		2.73	.2	5.9			11,040	11.0	3				
Do	Proctor	do	1917	11502	do	do		2.70	.2	7.3			8,730	7.0	3				
Do	Rutland	Prosp	1912	5950	do	Siliceous limestone.		2.80	.2	3.0				18.3	10				
Do	do	Comm	1917	11495	do	Marble		2.67	.2	9.3			7,100	7.7	2				
Do	Wallingford	Prosp	1903	726	do	Amphibolite		3.10	.2	4.7									
Do	West Rutland	Comm	1917	11492	do	Marble		2.67	.3				7,750						
Do	do	do	1917	11493	do	do		2.70	.3	16.9			6,940	.0	2				
Do	do	do	1917	11501	do	do		2.70	.2	4.8			12,300	11.7	4				
Washington	Barre	do	1906	1646	do	Granite		2.65	.4	3.1				18.7	8				
Do	do	do	1909	3192	do	Biotite granite		2.65	.2	4.9			18,440	18.8	9				
Do	do	do	1909	3437	do	Granite							18,370						
Do	do	do	1909	3438	do	do							18,460						
Do	do	do	1909	3439	do	do							16,930						
Do	do	do	1909	3440	do	do							17,400						
Do	do	do	1915	8853	do	do		2.65	.3	3.0					7				

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VERMONT—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Washington	Barre	Comm	1915	9673	Stone	Biotite granite		2.65	0.2	02.8				19.0	9				
Do	do	Local	1917	12209	do	do		2.64	.3					18.5	11				
Do	Roxbury	Comm	1917	11488	do	Serpentine marble		2.74	.1				16,050	18.0	6				
Windham	Bellows Falls	Prosp	1913	6677	do	Biotite schist		2.85	.1	2.9				14.4	16				
Windsor	Bethel	Comm	1917	12200	do	Granite		2.63	.3					18.0	11				
Do	Hartford	Prosp	1909	4092	do	Diabase [6]		2.90	.2	2.8				16.9	10				
Do	Woodstock	do	1910	4123	do	Hornblende schist		3.00	.0	4.3				17.2	7				
VIRGINIA																			
Albemarle	Black Rock Gap	Prosp	1936	43116	Stone	Diabase				2.0	12.1	A							
Do	do	do	1936	43117	do	Feldspathic sandstone.				2.3	21.6	A							
Do	do	do	1936	43118	do	Diabase				1.8	10.6	A							
Do	do	do	1938	44826	do	Quartzite					19.5	A							
Do	Brown Gap	do	1936	43108	do	Diabase				1.7	9.4	A							
Do	Charlottesville	do	1901	364	do	Amphibolite		2.95	0.2	4.1									
Do	do	do	1901	489	do	Limestone		2.70	.1	5.7									
Do	do	do	1901	490	do	Diorite		3.21	.4	3.4									
Do	do	do	1901	491	do	Epidote-chlorite schist.		3.00	.2	7.1									
Do	do	do	1901	494	do	Diabase		2.90	.3	2.4									
Do	do	do	1901	496	do	Hornblende schist		2.90	.3	1.9									
Do	do	do	1901	497	do	do		3.00	.6	4.1									
Do	do	do	1901	499	do	Quartzite		2.60	.3	3.6									
Do	do	do	1902	548	do	Amphibolite		3.00	.9	2.1									
Do	do	do	1902	549	do	do		3.10	.2	1.5									
Do	do	do	1902	550	do	do		3.10	.1	2.2									
Do	do	do	1902	551	do	do		3.00	.3	1.7									
Do	do	do	1902	552	do	Hornblende schist		2.90	.5	2.5									
Do	do	do	1902	612	do	Epidote-chlorite schist.		3.00	.1	4.0									
Do	do	do	1908	2580	do	Feldspathic sandstone.		2.60	.2	3.4				19.3	8				
Do	do	do	1908	2582	do	Epidote-chorite schist.		2.95	.2	3.2				17.8	24				
Do	do	do	1908	2616	do	Amphibolite		3.05	.2	3.3				16.3	12				
Do	do	do	1908	2617	do	do		2.95	.3	3.5									
Do	do	do	1908	2699	do	Granite [6]		2.60	.2	7.4				17.9	7				
Do	do	do	1908	2901	do	Gneiss		2.70	.1	3.7				18.3	11				
Do	do	do	1909	3709	do	Granite [1]		2.70	.3	7.4				18.3	8				
Do	do	do	1909	3710	do	Quartz		2.65	.0	6.7									
Do	do	do	1909	3848	do	Ferruginous sandstone.		2.95	.5	2.5				17.6	25				
Do	do	do	1913	7185	do	Granite [6]		2.75	.3	5.3				17.4	5				
Do	do	do	1913	7186	do	Mica schist		2.75	.2	4.7				16.8	7				
Do	do	do	1915	8646	do	Andesite [6]		3.00	.2	2.9					9				
Do	do	Local	1915	8686	do	Syenite		2.70	.1	4.4				17.3	10				
Do	do	Prosp	1915	8709	do	Diabase [6]		2.95	.2	2.9				17.0	24				
Do	do	do	1916	10253	do	Granite gneiss		2.74	.4	5.4				17.3	5				
Do	do	Local	1918	13298	do	Biotite gneiss		2.82	.4	6.2				16.7	7				
Do	do	Prosp	1920	15887	do	Amphibolite		2.93	.8	6.8				15.0	7				
Do	do	Comm	1934	40276	do	do					23.0	A							
Do	Crozet	Prosp	1907	2279	do	Biotite granite		2.80	.2	4.1				18.3	7				
Do	do	Local	1920	16454	do	Gneiss		2.71	.5	5.8					12				
Do	Esmont	Comm	1907	1934	do	Slate		2.85	.2				19,320		6				
Do	do	do	1907	1935	do	do		2.90	.1				24,320		18				
Do	Greenwood	Prosp	1907	2277	do	Trachyte [6]		3.00	.1	3.5				18.0	23				
Do	Hatton	do	1921	19332	do	Diabase [6]		3.00	.1	4.4				18.0	12				
Do	Ivy Depot	Local	1918	13299	do	Amphibolite		3.12	.2	3.0				17.4	14				
Do	do	do	1918	13712	do	Biotite gneiss		2.83	.5	4.6				18.0	8				
Do	do	do	1921	20584	do	do		2.85	.3	4.7				17.0	8				
Do	Jarman Gap	Prosp	1938	44858	do	Quartzite					19.6	A							

Do	Mechum River	Local	1919	14131	do	Biotite gneiss		2.83	.4	5.4				17.0	6				
Do	Miller School	do	1913	6945	do	Gneissoid granite		2.70	.4					17.8	7				
Do	do	do	1913	6946	do	do		2.80	.1					18.3	5				
Do	do	do	1913	6948	do	Biotite granite		2.81	.1					18.8	14				
Do	Red Hill	Comm	1943	61508	do	Granite		2.71	.6		32.5	B							
Do	do	do	1947	73753	do	do					26.4	B							
Do	Scottsville	Prosp	1921	19161	do	Sericite schist		2.69	.5	17.5									
Do	Shadwell	do	1901	500	do	Chlorite schist		3.00	.2	3.5									
Do	do	do	1908	2581	do	Chlorite-epidote schist.		2.95	.2	3.3				18.3	11				
Do	do	do	1908	2698	do	Hornblende-epidote schist.		3.00	.4	3.1									
Do	University	Local	1901	498	do	Mica schist		2.70	.2	3.4									
Do	do	do	1908	2861	do	Sericite gneiss		2.65	.2	5.6				17.6	7				
Do	do	Prosp	1909	3924	do	Porphyritic granite.		2.80	.6	5.0				17.8	7				
Do	do	do	1915	8647	do	Diorite		3.05	.4	2.2				18.0	11				
Do	do	Local	1918	12853	do	Mica schist		2.66	.2	4.1				18.0	6				
Do	Woods Crossing	do	1921	20581	do	Biotite gneiss		2.86	.2	5.6				18.3	6				
Do	Yancey Mills	Prosp	1921	20197	do	Granite gneiss		2.60	.4	3.5				18.3	11				
Do	do	Local	1949	77537	do	Gneiss									10				
	Alexandria	Comm	1940	48977	Gravel	QSQzGC	1½				30.5	A							
	do	Local	1940	49795	do	QSQzSc	1½				28.5	A							
Alleghany	Barber	do	1919	13946	Stone	Quartzite		2.61	.4	3.4				18.5	14				
Do	do	do	1919	13947	do	Limestone		2.72	.1	5.0				15.5	4				
Do	Clifton Forge	Prosp	1915	9483	do	Feldspathic sandstone.		2.70	.6					15.8	20				
Do	do	do	1916	10172	do	Siliceous limestone		2.67	.3	2.5				17.6	10				
Do	Covington	do	1912	5953	do	Crystalline limestone.		2.65	.4	4.2				14.1	6				
Do	Long Dale	Comm	1920	17332	Slag	Blast furnace		2.43	1.2	12.0									
Do	do	do	1921	18642	do	do				5.7						80			
Do	do	do	1921	20890	do	do		1.99	2.7					16.0	7				
Do	do	do	1923	24156	do	do				10.7									
Do	do	do	1923	24157	do	do				9.3						86	2-#4		
Amherst	Amherst	Prosp	1906	1899	Stone	Quartzite		2.65	.0	4.3									
Do	do	do	1907	1972	do	Epidosite		3.05	.3	7.4				19.3	23				
Do	do	do	1907	1973	do	Biotite gneiss		2.75	.3	4.7				16.5	8				
Do	do	do	1907	1984	do	Hornblende schist		3.10	.2	2.7				17.0	9				
Do	do	do	1910	4860	do	Biotite gneiss		2.75	.2	5.3				14.6	8				
Do	do	do	1910	4861	do	Mica schist		2.70	.1	8.2				18.3	10				
Do	do	do	1910	4862	do	Hornblende schist		3.00	.1	6.2				16.0	7				
Do	do	do	1910	4863	do	Biotite gneiss		2.80	.1	5.3				17.6	11				
Do	do	do	1910	4937	do	do		2.70	.3	6.6				16.8	12				
Do	do	do	1913	6636	do	Granite gneiss		2.80	.4	8.7				9.2	3				
Do	do	do	1913	6824	do	Diorite [6]		3.05	.5	2.4				17.9	8				
Do	Big Island	do	1941	53067	do	Quartzite					17.6	A							
Do	Buena Vista	do	1940	49126	do	Granite					39.3	A							
Do	Clifford	do	1913	7051	do	do		2.70	.2	5.3				17.7	4				
Do	Irish Gap	do	1940	49135	do	Pyroxene granite					16.1	A							
Do	do	do	1940	49136	do	Granite					28.3	A							
Do	James River	do	1909	3381	do	Hornblende gneiss		3.00	.3	16.4				12.3	5				
Do	do	do	1909	3521	do	Biotite gneiss		2.75	.2	9.2				17.0	6				
Do	Lynchburg	do	1919	14870	do	Amphibolite		3.02	.4	5.3				16.7	7				
Do	McIvor	do	1907	1976	do	Hornblende schist		3.05	.2	6.3				15.7	10				
Do	do	do	1907	1977	do	Epidosite		3.30	.5					10.7	10				
Do	Madison Heights	do	1907	2221	do	Hornblende schist		3.05	.2	5.5				16.2	8				
Do	do	do	1907	2223	do	Amphibolite		3.00	.6	10.3				13.5	7				
Do	do	do	1914	7891	do	Granite [6]		2.80	.2	4.7				18.0	8				
Do	Monroe	do	1907	1978	do	Biolite gneiss		2.75	.4					16.7	7				
Do	do	Local	1910	4102	do	Hornblende schist		3.10	.1	3.1				16.3	10				
Do	do	Prosp	1910	4203	do	Biotite gneiss		2.70	.3	7.2				18.2	5				
Do	do	do	1910	4204	do	do		2.75	.4	7.4				17.8	5				
Do	do	do	1910	4389	do	Gneiss		3.04	.3	5.3				15.1	7				
Do	do	Local	1910	4419	do	Hornblende schist		3.10	.1	5.9				14.2	9				
Do	do	do	1949	77536	do	Gneiss									6				
Do	Oronoco	do	1940	49127	do	Feldspathic sandstone.					58.8	A							
Do	Pera	do	1941	52987	do	Quartzite					16.9	A							
Do	do	Prosp	1941	52988	do	Sandstone					39.8	A							
Do	do	do	1941	52989	do	Granite					33.0	A							
Do	Robinson Gap	do	1942	56331	do	Sandstone					36.0	A							
Do	Sweet Briar	do	1906	1900	do	Hornblende gneiss		3.00	.1	5.7					5				
Do	do	do	1906	1901	do	Hornblende schist		3.00	.1	3.3				14.0	10				
Do	Whites Gap	do	1940	49128	do	Hornblende granite. [6]					33.7	A							
Appomattox	Appomattox	do	1907	2057	do	Sandstone		2.60	.7					16.5	9				

[1] Weathered. [6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Arlington	Arlington (Potomac River).	Comm	1940	51374	Gravel	QQzSC	1½				30.2	A							
Do	do	do	1944	65111	do	QQzS	2	2.55	0.8		45.1	A							
Do	do	do	1944	66397	do	QQzC	2	2.58	1.1		41.3	A							
Do	do	do	1944	66400	do	QQzS	2½	2.52	1.7		41.4	A							
Do	Arlington	Prosp	1906	1657	Stone	Granite gneiss		2.75	.2	4.7									
Do	Rosslyn	Comm	1901	412	do	Schist		2.80	.2	4.3									
Do	do	do	1905	1310	do	Mica schist		2.80	.2	4.8				17.1	6				
Do	do	do	1905	1320	do	do		2.80	.1	4.2									
Do	do	Prosp	1912	5952	do	Granite [6]		2.80	.2	2.9				17.8	11				
Do	do	Comm	1914	8158	do	Granite gneiss		2.80	.1	3.0				18.8	5				
Do	do	do	1921	20320	do	do		2.82	.2	6.0				17.7	7				
Do	do	do	1923	23087	do	Mica gneiss		2.79	.2	2.8				18.0	6				
Do	do	do	1929	31631	do	Sericite schist		2.78	.1	5.2			18,400	17.3	9				
Augusta	Beagles Gap	Prosp	1936	42619	do	Chlorite schist				3.6	15.5	A							
Do	do	do	1936	42620	do	Epidosite				2.1	15.9	A							
Do	Black Rock Gap	do	1936	43110	do	Sandstone				3.5	26.8	A							
Do	do	do	1936	43111	do	Quartzite				2.5	19.6	A							
Do	do	do	1936	43114	do	do				4.4	28.9	A							
Do	do	do	1936	43115	do	do				4.1	32.7	A							
Do	Brookewood	do	1911	5383	do	Dolomite		2.80	.4	3.1				16.5	16				
Do	do	do	1911	5384	do	Limestone		2.70	.4					15.4	5				
Do	Craigsville	Local	1908	2680	do	do		2.70	.2	3.8				17.7	9				
Do	do	Prosp	1908	2681	do	do		2.70	.2	4.6				15.7	7				
Do	do	Local	1921	20192	do	Siliceous limestone		2.75	.1	4.5				14.7	8				
Do	do	Comm	1922	21137	do	Limestone		2.75	.0	4.2				14.7	7				
Do	Fordwick	Prosp	1908	2897	do	Chert		2.65	.3	3.9				19.5	7				
Do	do	do	1908	2898	do	Dolomite		2.75	.4	4.7				15.5	11				
Do	do	do	1908	2899	do	Limestone		2.75	.2					16.0	7				
Do	Greenville	do	1923	23038	do	Siliceous limestone		2.73	.1	3.5				16.7	16				
Do	do	do	1923	23075	do	Limestone		2.72	.1	5.3				14.7	5				
Do	Grottoes	do	1936	43119	do	Quartzite				2.9	26.1	A							
Do	do	do	1937	44540	do	Sandstone				2.5	28.2	A							
Do	Harriston	do	1936	43112	do	Quartzite				3.4	36.4	A							
Do	do	do	1936	43113	do	do				3.8	27.5	A							
Do	Jennings Gap	Local	1918	12915	do	Siliceous limestone		2.79	.2	3.5				16.3	15				
Do	do	Prosp	1918	12916	do	Feldspathic sandstone.		2.62	.8	3.5				16.0	11				
Do	do	do	1918	12917	do	do		2.86	.2	3.1				16.0	24				
Do	do	do	1918	12918	do	Sandstone		2.70	.2	3.1				18.0	6				
Do	do	Local	1919	15187	do	Limestone		2.70	.3	6.3				15.7	4				
Do	do	do	1919	15188	do	do		2.69	.3	5.0				15.7	9				
Do	Lone Fountain	Prosp	1919	14881	do	do		2.72	.1	5.8				16.0	4				
Do	do	do	1920	16776	do	Argillaceous dolomite.		2.79	.2	2.8				16.7	18				
Do	Love	Local	1940	52078	do	Limestone												S	1½–1
Do	do	do	1940	52350	do	Granite					25.6	A							
Do	Lyndhurst	do	1945	67158	do						33.1	A							
Do	do	do	1945	67159	do						47.9	A							
Do	McCormicks Gap.	Prosp	1936	42621	do	Epidosite				2.7	14.7	A							
Do	Mint Spring	Local	1920	16641	do	Limestone		2.76	.3	5.5				15.3	10				
Do	Rockfish Gap	Prosp	1915	8741	do	Diabase [6]		2.90	.2	3.8				13.2	9				
Do	Sherando	Local	1940	48946	Gravel	Quartzite					24.0	A							
Do	do	do	1940	49079	do	do					28.6	B							
Do	Staunton	do	1906	1904	Stone	Limestone		2.80	.7	4.5				15.0	8				
Do	do	Prosp	1907	2087	do	do		2.70	1.2	3.4				15.5	11				
Do	do	do	1909	3725	do	Slate		2.70	.4	12.4				6.3	4				
Do	do	do	1910	4738	do	Dolomite		2.85	.1	3.2				13.2	11				
Do	do	do	1911	5620	do	Limestone		2.70	.1	5.1				15.3	6				
Do	do	do	1913	6580	do	Dolomite		2.80	.5	3.7				16.8					
Do	do	do	1918	13499	do	Dolomitic limestone.		2.81	.3	3.1				16.0	19				
Do	do	Comm	1921	18942	do	Siliceous dolomite		2.82	.4	3.5				15.3	16				
Do	do	do	1921	20858	do	Dolomite		2.80	.2	2.9				16.7	17				
Do	do	do	1921	20859	do	do		2.80	.6	3.5				17.7	12				

Do	do	Local	1921	20860	do	do		2.75	.5	2.9				15.7	8			
Do	do	do	1921	20937	do	Limestone		2.69	.2	4.9				14.0	5			
Do	do	Comm	1938	44906	do	Dolomite limestone.					25.9	A					7.0	1½-#4
Do	do	do	1938	46185	do	Dolomite					16.7	A						
Do	do	do	1947	73752	do	Limestone					18.3	B						
Do	do	do	1948	75376	do	do					28.0	A						
Do	do	do	1949	77090	do	do					19.7	B						
Do	do	do	1949	77856	do	do		2.77	.3		20.7	A						
Do	Waynesboro	Prosp	1908	3101	do	Sandstone		2.70	1.4	4.7				16.1	6			
Do	do	Comm	1909	3724	do	do		2.60	.7	7.9				19.0	6			
Do	do	Prosp	1911	5437	do	Calcareous slate		2.75	.2	4.6				11.8	10			
Do	do	do	1911	5476	do	Limestone		2.85	.1	5.4				18.3	19			
Do	do	Comm	1912	5926	do	Quartzite		2.65	.2	4.6								
Do	do	Local	1921	20190	do	Slate		2.62	.2	6.4				17.0	11			
Do	do	Comm	1939	46594	do	Quartzite		2.65	.1		22.0	A						
Do	do	do	1943	61507	do	Feldspathic quartzite.		2.62	.5		22.8	B						
Do	West Augusta	Prosp	1921	18978	do	do		2.70	.2	3.4				16.3	18			
Do	do	do	1921	18979	do	Sandstone		2.60	.9	4.0								
Bath	Hot Springs	Comm	1937	44260	do	Argillaceous limestone.				3.3	26.2	A			8			
Do	do	do	1937	44377	do	do				5.2	26.9	A			7			
Bedford	Abert	Prosp	1915	8804	do	Granite gneiss		2.80	.7	5.2				18.8	9			
Do	Bedford	do	1910	4678	do	do		2.75	.2	4.4				17.8	7			
Do	do	Local	1941	53173	do	Hornblende granite.											S	1½-1
Do	do	Prosp	1945	69687	Gravel	Quartzite					31.2	A						
Do	Big Island	do	1939	48360	Stone	Granite					32.8	A					S	1½-1
Do	Bonsack	do	1946	70752	do	Quartzite		2.60	.6		30.3	A					1.5	1½-⅜
Do	do	do	1946	70754	do	Argillaceous limestone.		2.71	.3		20.1	A					1.7	1½-⅜
Do	Boonsboro	do	1907	1968	do	Biotite gneiss		2.60	.7	8.8				10.8	2			
Do	do	do	1907	1969	do	Hornblende-epidote schist.		2.95	.4	8.6				12.3				
Do	Buchanan	do	1939	46777	do	Quartzite					27.4	A						
Do	do	do	1939	46781	do	Feldspathic sandstone.					68.4	A						
Do	do	do	1939	46783	do	Feldspathic quartzite.					40.9	A						
Do	do	do	1939	46790	do	Granite porphyry					30.7	A						
Do	Clay	Local	1920	16228	do	Schist		3.08	.4	5.6				16.0	14			
Do	Glasgow	Prosp	1940	48364	do	Chlorite schist					21.8	A					S	1½-1
Do	do	do	1940	48371	do	Pyroxene gneiss					22.4	A					S	1½-1
Do	Holcombs Rock	do	1914	8021	Slag	Smelter		3.00	.8	10.2								
Do	Major	do	1919	14224	Stone	Andesite[6]		3.01	.2	2.7				17.3	9			
Do	Lynchburg	do	1908	2912	do	Biotite gneiss		2.80	.2	11.1				15.8	6			
Do	do	do	1908	3088	do	Biotite schist		2.85	.3	7.3				16.7	8			
Do	do	do	1919	13990	do	Gabbro		2.81	.3	4.9				18.7	7			
Do	Montvale	do	1939	46784	do	Sandstone					35.2	A						
Botetourt	Blue Ridge	Comm	1919	13906	do	Siliceous dolomite		2.79	.1	4.8				16.7	10			
Do	do	do	1919	14449	do	Limestone			.1	6.2				15.0	5			
Do	do	do	1933	34732	do	Dolomite				3.9	21.5	A						
Do	do	do	1934	40280	do	Argillaceous dolomite.					17.2	A						
Do	do	do	1939	46618	do	Limestone					16.3	B						
Do	do	do	1945	69768	do	do					18.3	B						
Do	do	do	1945	69769	do	do					19.7	B						
Do	do	do	1945	69770	do	do					20.4	B						
Do	do	do	1946	71736	do	do		2.74	.7		18.4	B					6.5	1-#4
Do	do	do	1947	73360	do	do		2.78	.2		23.2	A						
Do	do	do	1947	73485	do	do					17.2	A						
Do	do	do	1947	73605	do	do					18.2	B						
Do	do	do	1948	74763	do	do		2.73	.6		19.8	A					6.1	1½-#4
Do	do	do	1948	75450	do	do		2.75	.4		19.4	A						
Do	do	do	1949	77394	do	do		2.75	.5		19.5	A					3.1	2-¾
Do	Bobbletts Gap	Prosp	1939	46776	do	Feldspathic sandstone.					15.3	A						
Do	do	do	1939	46791	do	Granite					64.4	A						
Do	do	do	1939	46793	do	do					39.9	A						
Do	do	Comm	1939	46832	do	Dolomite					16.5	A						
Do	do	do	1939	46833	do	Siliceous dolomite					14.4	A						
Do	do	do	1940	51069	do	Dolomite					16.6	B						
Do	Bonsack	Prosp	1946	70886	do	Dolomitic limestone.		2.66	1.8		40.5	A					5.6	1½-⅞
Do	do	Local	1946	70998	do	do					23.0	A					2.9	1½-⅜
Do	Buchanan	do	1918	13724	do	Argillaceous limestone.		2.78	.2	3.3				17.3	23			
Do	do	Comm	1919	15111	do	Siliceous dolomite		2.82	.4	3.3				16.3	12			
Do	do	Local	1920	16648	do	Calcareous slate		2.73	.1	5.5								

Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Botetourt	Buchanan	Comm	1939	46794	Stone	Dolomite					18.0	A							
Do	do	do	1939	46851	do	do					12.8	B							
Do	do	do	1939	46917	do	Siliceous dolomite					18.3	B							
Do	do	do	1940	48976	do	Dolomite					24.3	B							
Do	do	do	1940	49140	do	do					19.6	A							
Do	do	do	1940	49141	do	Limestone					31.5	A							
Do	do	do	1940	49163	do	Dolomite					20.0	A							
Do	do	do	1940	49529	do	do					20.8	B							
Do	do	do	1940	50360	do	Argillaceous limestone.					20.6	A							
Do	do	do	1940	50471	do	Dolomite					20.1	A							
Do	do	do	1940	51065	do	do					17.1	B							
Do	do	do	1941	52757	do	do					19.4	A							
Do	do	do	1941	52907	do	do					20.1	A							
Do	do	do	1941	53415	do	do		2.82	0.4		30.2	A							
Do	do	do	1941	53704	do	do		2.84	.3		23.9	A							
Do	do	do	1941	54185	do	do					19.3	A							
Do	do	do	1941	54498	do	do					22.7	A							
Do	do	do	1941	55347	do	do					16.9	A							
Do	do	do	1946	71542	do	do					20.2	A							
Do	do	do	1947	72835	do	do		2.82	.5		25.6	A						3.2	1½–#4
Do	do	do	1947	72836	do	do		2.84	.2		25.9	A						4.6	1½–#4
Do	do	do	1947	73095	do	do					21.7	A							
Do	do	do	1947	73096	do	do					21.2	B						2.4	1–#4
Do	do	do	1947	73097	do	do					21.6	C						1.8	⅜–#8
Do	do	do	1947	73671	do	Limestone					18.5	B							
Do	do	do	1947	74016	do	Dolomitic limestone.					21.2	A							
Do	do	do	1947	74276	do	do					19.5	A							
Do	do	do	1948	74919	do	do					17.4	B						1.2	1–#4
Do	do	do	1948	75778	do	Dolomite					20.9	A							
Do	do	do	1949	79502	do	do					18.8	C							
Do	do	do	1949	79503	do	do					18.8	A							
Do	do	do	1949	79548	do	do					19.1	B						.4	1½–#4
Do	do	do	1950	80634	do	do		2.80	.7		26.0	A							
Do	do	do	1950	81365	do	do					24.8	A						6.0	1½–#4
Do	do	do	1950	81909	do	do					19.6	A							
Do	Eagle Rock	Local	1922	20963	do	Limestone		2.71	.1	4.5				14.0	6				
Do	Gala	Prosp	1908	2756	do	Quartzite		2.60	.4	2.0									
Do	do	do	1908	2757	do	do		2.65	.1	3.2									
Do	Lithia	Local	1909	3357	do	Limestone		2.70	.5	3.2				16.8	5				
Do	Mumford	do	1941	51067	do	Syenite [6]					19.0	A							
Do	Nace	Prosp	1923	23106	do	Limestone		2.71	.2	5.0				15.3	4				
Do	Rocky Point	Comm	1922	21170	do	do		2.71	.1	4.5				12.0	5				
Do	do	do	1923	23466	do	do		2.73	.1					14.7	6				
Do	do	do	1923	23467	do	do		2.72	.1					16.0	5				
Do	do	do	1923	23468	do	do		2.70	.2					16.0	5				
Do	do	do	1923	23469	do	do		2.71	.2					15.3	6				
Do	do	do	1923	23470	do	do		2.73	.2					13.7	4				
Do	do	do	1923	23471	do	Argillaceous limestone.		2.73	.1					15.3	6				
Do	do	do	1923	23695	do	Limestone		2.70	.3	5.0				13.3	5				
Do	do	do	1923	23696	do	do		2.73	.1	5.2				15.0	5				
Do	do	do	1923	23697	do	do		2.73	.3	5.7				16.0	6				
Do	do	do	1923	24330	do	Argillaceous limestone.		2.70	.1	5.2				13.3	5				
Do	do	do	1926	28315	do	Limestone				3.9									
Do	do	do	1934	40277	do	Argillaceous limestone.					31.2	A							
Do	do	do	1937	44378	do	do				5.7	27.6	A			9				
Do	do	do	1941	54075	do	Limestone					31.1	A							
Do	Salt Petre Cave	Prosp	1920	15452	do	Dolomite		2.88	.3	6.7				16.7	7				
Do	Troutville	Local	1923	24127	do	do		2.80	.2	3.6				18.3	8				
Do	Villamont	Prosp	1946	70753	do	Quartzite		2.64	.6		25.4	A						.9	1½–⅜
Buckingham.	Dutch Gap	Comm	1938	44952	Gravel	QQzS					30.0	A							
Do	do	do	1938	46386	do	QQzS					28.8	B							

Do	do	do	1940	49261	do	QQzS	1½				31.1	A									
Campbell	Alta Vista	Local	1909	3326	Stone	Granite		2.60	.2	3.7					18.7	10					
Do	do	do	1909	3327	do	Gneiss		2.75	.1	2.3					18.0	18					
Do	do	do	1911	5715	do	Biotite schist		2.70	.1	3.3					18.3	17					
Do	do	do	1913	6599	do	Mica schist		2.70	.2	3.3					17.7	18					
Do	Bocock	Prosp	1917	11565	do	Quartz		2.64	.2	15.0											
Do	Halsey	Local	1917	11626	do	Epidosite		3.03	.5	6.2			22,750		18.0	5					
Do	do	do	1917	11779	do	do		3.17	.2	3.9					16.7	9					
Do	do	do	1920	16227	do	Hornblende gneiss		3.00	.4	10.0					16.7	4					
Do	do	do	1920	16440	do	Amphibolite		3.00	.4	10.3						8					
Do	do	do	1920	16783	do	Hornblende schist		2.99	.3	6.9					17.0	9					
Do	Lone Jack	Comm	1907	2162	do	Quartzite		2.65	.1	2.6					19.0	14					
Do	do	do	1908	2905	do	Schist		2.70	.1	3.9											
Do	do	do	1916	9891	do	do		2.55	.8	12.0											
Do	do	Prosp	1916	9904	do	Aplitic granite		2.65	.3	5.4					18.7	7					
Do	do	Comm	1917	11551	do	Quartz		2.61	.4	10.9											
Do	do	do	1919	14651	do	Sericite gneiss		2.65	.5	6.0					18.0	7					
Do	Lynchburg	Prosp	1908	2718	do	Hornblende schist		3.05	.3	4.4					15.2	8					
Do	do	Local	1911	5050	do	Sericite gneiss		2.70	.2	3.3					18.7	9					
Do	do	do	1913	6821	do	Mica schist		2.75	.2	4.6					14.3	8					
Do	do	Prosp	1916	10344	do	Quartzite		2.57	.8	4.3			25,880		18.6	14					
Do	do	do	1917	11251	do	Quartz		2.65	.1	5.8											
Do	do	Local	1917	11362	do	Hornblende gneiss		2.85	.4	10.3					19.3	8					
Do	do	Prosp	1917	12529	do	do		2.89	.5	11.5											
Do	do	do	1918	12834	do	Hornblende schist		2.95	.4	13.5					16.3	5					
Do	do	do	1918	12954	do	Biotite schist		2.67	1.0	6.8					16.0	6					
Do	do	Local	1920	16307	do	Dolomitic marble		2.76	.1	5.0						7					
Do	do	do	1924	24492	do	Gneissoid granite		2.65	.4	4.2			26,510		18.7	7					
Do	do	Prosp	1926	28637	do	Biotite schist		2.98	.2	5.6					14.0	7					
Do	Reusens	do	1917	11531	Slag	Blast furnace		1.42	9.5	28.4											
Carroll	Cliffview	do	1916	9819	Stone	Hornblende schist		2.95	.4	4.4					18.3	14					
Do	do	do	1916	9820	do	Hornblende gneiss		2.90	.9	15.8					14.3	5					
Do	Drenn	do	1939	46437	do	Quartzite					31.2	A									
Do	Fancy Gap	do	1935	42307	do	Granite gneiss				6.4	50.7	A									
Do	do	do	1935	42308	do	do				10.4	71.6	A									
Do	do	do	1935	42309	do	Biotite gneiss				7.4	43.6	A									
Do	do	do	1935	42310	do	Granite gneiss				17.0	83.2	A									
Do	do	do	1935	42311	do	Biotite gneiss				5.7	42.7	A									
Do	do	do	1935	42312	do	Granite gneiss				7.5	49.1	A									
Do	do	do	1935	42313	do	Biotite gneiss				6.9	50.8	A									
Do	do	do	1935	42314	do	Granite gneiss				5.3	40.9	A									
Do	do	do	1935	42315	do	do				6.0	56.9	A									
Do	do	do	1935	42316	do	do				4.6	42.6	A									
Do	do	do	1935	42317	do	do				5.0	42.1	A									
Do	do	do	1935	42318	do	Mica gneiss				18.3	58.7	A									
Do	do	do	1935	42319	do	Granite gneiss				12.0	64.1	A									
Do	do	do	1935	42343	do	Biotite gneiss				12.2	53.2	A									
Do	do	do	1935	42344	do	Granite gneiss				6.8	48.1	A									
Do	do	Local	1938	46371	do	Biotite gneiss					42.5	A									
Do	do	do	1938	46372	do	do					42.2	A									
Do	do	do	1938	46373	do	Mica schist					43.0	A									
Do	do	do	1938	46391	do	Mica gneiss					45.3	A									
Do	do	Prosp	1938	46392	do	Granite gneiss					34.8	A									
Do	do	do	1940	49567	do	Quartz					85.9	A									
Do	do	Local	1940	50015	do	Mica schist					30.1	A									
Do	Galax	Prosp	1939	46490	do	do					36.9	A									
Do	Hillsville	do	1935	42305	do	Biotite gneiss				7.1	49.3	A									
Do	do	Local	1938	46124	do	do					46.2	A									
Do	do	do	1938	46336	do	do					43.2	A									
Do	do	Comm	1949	79224	do	Limestone					15.9	A									
Do	do	do	1949	79225	do	do					15.9	A									
Do	Laurel Fork	Local	1938	46138	do	Mica gneiss					47.2	A									
Do	Lowgap (N. C.)	Prosp	1939	46532	do	do					44.0	A									
Do	do	do	1939	46549	do	do					42.8	A									
Do	do	do	1939	46563	do	Quartzite					43.9	A									
Do	do	do	1939	46568	do	do					31.3	A									
Do	Piper Gap	do	1935	42346	do	Granite gneiss				11.2	69.0	A									
Do	do	do	1935	42347	do	Mica gneiss				7.6	54.6	A									
Do	do	do	1935	42348	do	do				14.1	48.5	A									
Do	do	do	1935	42349	do	Granite gneiss				3.4	38.6	A									
Do	do	do	1935	42350	do	Hornblende schist				4.7	48.4	A									
Do	do	do	1938	46343	do	Biotite gneiss					49.6	A									
Do	do	do	1939	46438	do	Quartzite					41.4	A									
Do	do	do	1939	46439	do	Mica gneiss					43.9	A									
Do	Shorts Creek	do	1921	19198	do	Quartzite		2.65	.2	3.0					19.3	17					
Do	Snake Creek	do	1938	46393	do	Biotite gneiss					45.6	A									
Do	do	do	1938	46394	do	do					40.2	A									
Do	do	do	1938	46395	do	do					34.4	A									
Do	do	do	1938	46396	do	Mica gneiss					36.6	A									
Do	do	do	1938	46419	do	Biotite schist					46.7	A									

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Carroll	Woodlawn	Prosp	1921	20097	Stone	Mica gneiss		2.65	0.6	5.9				17.0	7				
Do	do	do	1935	42345	do	Granite gneiss				4.2	44.1	A							
Charlotte	Randolph	do	1909	3275	do	Diorite [6]		2.90	.3	2.8				18.8	26				
Do	do	do	1909	3276	do	Hornblende granite.		2.60	1.0	4.0				18.6	9				
Do	Redoak	Local	1941	54637	do	Feldspathic quartzite.					15.9	A							
Do	do	do	1941	54638	do	do					29.0	C							
Chesterfield	Southside	Prosp	1906	1774	do	Granite		2.65	.2	3.2				17.5	11				
Clarke	Berryville	do	1914	7586	do	Argillaceous limestone.		2.75	.1	2.5				17.4	13				
Do	Boyce	Local	1921	18106	do	Limestone		2.71	.1	15.7									
Culpeper	Boston	Prosp	1915	8318	do	Micaceous quartzite.		2.65	.2	4.6				18.7	7				
Do	do	do	1915	8319	do	Biotite gneiss		2.70	.2	2.9				18.2	11				
Do	do	do	1916	10115	do	Rhyolite [6]		2.69	.5	4.7				19.0	5				
Do	do	do	1921	19358	do	Sericite gneiss		2.66	.2	5.4				17.3	8				
Do	do	do	1921	19359	do	Feldspathic sandstone.		2.64	.3	4.9				17.7	7				
Do	do	Local	1921	19361	do	Sandstone		2.68	.3	3.5				18.0	13				
Do	do	Prosp	1921	19365	do	Mica schist		2.69	.2	2.8				18.0	15				
Do	do	Local	1921	20077	do	Sandstone		2.60	.2	2.9				18.0	12				
Do	Brandy	Prosp	1907	2284	do	Quartzite		2.55	1.7	2.4				18.0	30				
Do	do	do	1909	3937	do	Chert		2.90	.2					18.9	17				
Do	do	do	1910	4816	do	Argillite		2.80	.2					16.8	26				
Do	Buena	Local	1909	4089	do	Gabbro		3.10	.2					18.2	14				
Do	do	Prosp	1924	24489	do	Diabase		3.05	.2	3.2			37,550	19.3	12				
Do	Culpeper	do	1907	2324	do	Amphibolite		3.05	.6	2.8				16.6	24				
Do	do	Local	1907	2325	do	Ferruginous sandstone.		2.55	1.9	2.3				16.8	19				
Do	do	Prosp	1907	2326	do	Amphibolite		2.90	.9	2.1				17.8	11				
Do	do	do	1909	3520	do	Diabase [6]		2.95	.5	3.3				18.4	24				
Do	do	Local	1912	5878	do	Basalt [6]		3.00	.1	3.0				18.2	47				
Do	do	do	1912	5879	do	do [6]		2.85	1.1	2.8				18.5	20				
Do	do	Prosp	1913	6544	do	Biotite schist		2.70	.2	4.6				14.9	9				
Do	do	do	1913	6545	do	Mica gneiss		2.70	.4	8.9				15.1	7				
Do	do	Local	1913	7063	do	Argillaceous sandstone.		2.60	1.6	4.7				14.7	12				
Do	do	Prosp	1913	7168	do	Basalt breccia		3.00	.2	4.0				11.8	5				
Do	do	do	1914	7515	do	Amphibolite		3.00	.1	4.6				17.5	18				
Do	do	do	1915	8320	do	Sericite schist		2.75	.4	5.9				18.5	4				
Do	do	do	1915	8321	do	Amphibolite		3.10	.2	2.3				17.7	9				
Do	do	Local	1929	32338	do	Andesite [6]		2.91	.6	4.4				17.7	10				
Do	Griffinsburg	Prosp	1915	8432	do	Granite gneiss		2.65	.3	4.7				18.0	5				
Do	do	do	1915	8433	do	Amphibolite		3.10	.2	4.5				18.5	16				
Do	do	do	1915	8618	do	Granite gneiss		2.70	.1	4.1				18.5	6				
Do	do	do	1915	8619	do	Amphibolite		3.15	.2	2.8				18.3	6				
Do	Stevensburg	do	1907	2281	do	Quartzite		2.75	.6	2.2				19.3	20				
Do	do	do	1909	3731	do	Hypersthene diabase.		3.05	.0	3.7				18.0	11				
Do	do	do	1912	6258	do	Argillaceous sandstone.		2.45	3.0	4.6				12.3	9				
Dickenson	Clintwood	do	1917	11394	do	Feldspathic sandstone.		2.53	2.0	5.4				5.0	6				
Do	do	do	1920	16190	do	Calcareous sandstone.		2.53	1.6	5.0				17.3	7				
Do	do	do	1920	16191	do	Feldspathic sandstone.		2.54	1.9	8.2				11.3	6				
Dinwiddie	Petersburg	Comm	1922	21230	Gravel	QQz	2½			15.2		A							
Do	do	do	1924	24604	Stone	Granite		2.64	.2	4.1			30,680	19.2	11				
Do	do	do	1938	46256	Gravel	QQz					38.5	A							
Do	do	do	1938	46257	do	QQz					36.7	A							
Do	do	do	1941	55466	do	QQz	1½				35.4	A							
Do	do	do	1943	61777	do	QQzG	¾	2.61	.5		34.3	B							
Do	do	do	1950	81734	do	QQz	1½				37.4	A						2.2	¾–#4
Do	do	do	1950	81735	do	QQz	2											.6	2–¾
Do	do	do	1950	81818	do	QQzS	¾				29.8	B						1.9	¾–#4

Elizabeth City.	Hampton	Prosp	1921	19211	Stone	Sandstone		2.48	.4	3.6				19.3	13				
Fairfax	Accotink	Local	1936	42806	do	Quartzite				3.0					13				
Do	Annandale	Prosp	1922	21199	do	Granite		2.67	.3	2.5				19.2	13				
Do	do	do	1922	21200	do	do.[1]		2.63	.7	3.4				18.3	9				
Do	do	do	1929	31519	do	do		2.70	.2	2.1			29,910	18.7	13				
Do	do	Comm	1942	56485	Gravel	QQzS(C)	1				41.5	B							
Do	do	do	1943	61503	do	QSQzC	¾	2.52	1.7		42.9	B							
Do	do	do	1943	62460	do	QSQzC		2.55	1.0		41.8	A							
Do	do	do	1943	62591	do	QSQzC	2	2.58	.8		41.8	A							
Do	do	do	1943	62769	do	QSQzC	1½				44.1	A							
Do	do	do	1944	63801	do	QSQzC	2				39.8	A							
Do	do	do	1944	64039	do	QSQzC	2	2.60	.6		39.3	A							
Do	do	do	1944	64518	do	QQzS	2				35.9	A							
Do	do	do	1944	64641	do	QQzS					38.1	A							
Do	do	do	1944	65111	do	QQzS	2	2.55	.8		45.1	A				105	2–#4		
Do	do	do	1944	65951	do	QQzS	2	2.59	.7									8.1	2–¾
Do	do	do	1944	65952	do	QQzSC	1½	2.50	2.0		42.2	A						8.6	1½–#4
Do	do	do	1944	66398	do	QQz(CS)	1½	2.57	1.4		41.3	A							
Do	do	do	1944	66401	do	QQz(S)	1	2.52	2.0		41.4	B							
Do	do	do	1945	67705	do	QQz(C)	2	2.54	1.1		42.8	A							
Do	do	do	1945	67706	do	QQz(C)	1½	2.53	1.3		42.8	A							
Do	do	do	1946	72253	do	QQz(SC)	2	2.58	.7		36.3	A							
Do	do	do	1949	77273	do	QQzCS	2	2.55	1.1		40.7	A						3.0	2–#4
Do	do	do	1949	77274	do	QQzCS	1½	2.55	1.3									5.6	1½–#4
Do	do	do	1950	80798	do	QQzCS	2				45.6	A						4.1	2–¾
Do	do	do	1950	80799	do	QQzCS	1½											4.7	1½–#4
Do	Bullrun	Local	1925	27557	do	Diabase		2.97	.2	3.0				18.7	14				
Do	do	Prosp	1925	27565	do	do		2.96	.1	3.0				18.7	18				
Do	do	do	1925	27566	do	do		2.99	.1	3.4				18.7	12				
Do	do	do	1926	28066	do	do		3.00	.0	2.4				18.7	22				
Do	do	do	1926	28162	do	do		3.02	.1	2.2				18.7	21				
Do	do	Comm	1942	57422	do	do					21.6	C							
Do	do	do	1942	57443	do	do					22.0	C							
Do	do	do	1942	57444	do	do					18.9	C							
Do	do	do	1943	61480	do	do					14.0	B							
Do	do	do	1943	61481	do	do					19.3	C							
Do	do	do	1944	64967	do	do					20.7	C							
Do	do	do	1944	65022	do	do					19.9	C							
Do	do	do	1946	72079	do	do		2.96	.6		17.9	A	47,600		14			.5	1½–#4
Do	do	do	1950	82221	do	do					14.1	B						.2	¾–#4
Do	Centerville	Prosp	1946	71799	do	Amphibolite		3.00	.9		28.9	A	19,600		9			2.8	1½–#4
Do	do	do	1946	72009	do	do		3.00	.9		26.4	A	24,000		9			3.7	1½–#4
Do	do	do	1946	72010	do	Conglomerate		2.58	3.0		24.7	A						26.0	1½–#4
Do	do	Local	1946	72011	do	Mica schist		2.81	1.1		19.2	A	17,800		6			2.8	1½–#4
Do	do	Prosp	1946	72022	do	Diabase		2.95	.8		28.5	A	38,600		12			.5	1½–#4
Do	do	do	1946	72023	do	Calcareous sandstone.		2.64	1.3		26.9	A	31,500		9			9.3	1½–#4
Do	do	do	1946	72044	do	Diabase		2.96	.4		15.2	A	53,100		20			.6	1½–#4
Do	do	do	1946	72078	do	Feldspathic sandstone.		2.50	1.7		27.2	A	38,100		14			4.2	1½–#4
Do	Chantilly	do	1922	21293	do	Diabase		2.93	.5	3.9				17.3	7				
Do	Clifton	do	1912	6315	do	do		2.95	.3	3.0				18.0	14				
Do	do	do	1913	7187	do	do		2.95	.2	2.5				17.4	15				
Do	do	Local	1946	72012	do	Sericite schist		2.63	2.3		47.0	A	6,500		4			11.9	1½–#4
Do	do	Prosp	1946	72082	do	Quartz		2.65	.3		33.8	A	54,400		6			1.2	1½–#4
Do	Colvin Run	do	1924	24508	do	Talc schist		2.90	.3	7.4				16.7	4				
Do	do	do	1924	25229	do	Micaceous quartzite.		2.81	.1	5.7				17.0	13				
Do	Coral	do	1924	24509	do	Chloritic quartzite		2.66	.4	2.7				19.3	20				
Do	Dyke	do	1931	33962	Gravel		1½			15.3		A							
Do	Elkins	Local	1946	71782	Stone	Mica schist		2.78	.6		23.7	A	17,300		6			1.0	1½–#4
Do	do	Prosp	1946	71783	do	Serpentine		2.46	3.0		25.2	A	13,680		6			28.4	1½–#4
Do	Fairfax	do	1905	1196	do	Limestone		2.70	.3					15.8	6				
Do	do	do	1905	1197	do	do		2.70	.1					13.2	6				
Do	do	do	1905	1198	do	do		2.70	.4					18.2					
Do	do	Local	1911	5371	do	Diorite[6]		2.85	.2	5.1				17.1	7				
Do	do	Prosp	1912	6043	do	Serpentine		2.80	.6	4.9				15.8	11				
Do	do	do	1920	16729	do	Mica gneiss		2.77	1.8	9.8					6				
Do	do	Local	1920	17231	do	Amphibolite		2.80	.8	9.1				6.3	6				
Do	do	Prosp	1920	17699	do	do		2.96	.4	4.1				14.0	7				
Do	do	do	1920	17700	do	do		3.00	.3	3.4				17.7	18				
Do	do	do	1921	18409	do	Talc-epidote schist		3.00	.3	4.2				16.0	7				
Do	do	Local	1921	19494	do	Actinolite-epidote schist.		2.92	.7	6.0				13.7	5				
Do	do	do	1921	19495	do	do		2.84	1.2	8.9				8.0	4				
Do	do	do	1921	19496	do	do		2.88	1.0	6.5									
Do	do	Prosp	1921	19524	do	Talc-chlorite schist.		2.81	.6	16.0									

[1] Weathered. [6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Fairfax	Fairfax	Prosp	1921	19616	Stone	Ferruginous sandstone.		2.29	4.4	12.4				0.0	6				
Do	do	do	1921	19617	do	Muscovite-chlorite schist.		2.22	.9	12.9				6.3	6				
Do	do	do	1921	19618	do	Amphibolite		2.96	1.6	13.1				12.0	5				
Do	do	do	1921	19619	do	Talc amphibolite		2.96	.7	10.2				.0	5				
Do	do	do	1921	19995	do	Amphibolite		3.15	.1	2.8				18.7	15				
Do	do	do	1923	23076	do	Argillaceous limestone.		2.60	1.2	4.8				11.0	8				
Do	do	do	1924	26280	do	Talc-chlorite-schist.		2.87	.1	5.4				18.7	9				
Do	do	do	1925	26613	do	Chlorite schist		2.81	.5	4.7				17.3	6				
Do	do	do	1925	26736	do	Chlorite amphibolite.		3.01	.2	3.9				10.7	8			S	1½–1
Do	do	do	1925	26816	do	Serpentine		2.79	.2	2.6				18.7	14				
Do	do	Comm	1930	33242	do	Granite		2.67	.2	2.2			29,820	19.0	16				
Do	do	Prosp	1946	71797	do	Amphibolite		2.83	2.2		43.3	A	20,360		8			6.3	1½–#4
Do	do	do	1946	71798	do	do		2.96	1.2		26.9	A	15,100		9			5.6	1½–#4
D	do	do	1946	72021	do	Granite		2.68	.7		25.6	A	34,800		10			.8	1½–#4
Do	do	do	1946	72081	do	Quartz		2.63	.5		57.5	A	39,600		7			.7	1½–⅜
Do	Falls Church	do	1909	3445	do	Granite		2.65	.3	3.3				18.9	15				
Do	do	do	1911	4988	do	do		2.80	.1	2.9				18.4	13				
Do	do	do	1911	5005	do	Gneissoid granite		2.64	.9	5.5				17.8	8				
Do	do	do	1921	20834	do	Granite		2.60	.3	2.7				18.7	10				
Do	do	Local	1929	31518	do	do		2.65	.3	2.8			24,310	18.7	9				
Do	Fort Belvoir	do	1946	72089	do	do		2.60	1.0		57.2	B						10.8	1½–#4
Do	do	do	1949	77420	Gravel	QS	1				44.0	B						10.7	1–#4
Do	do	do	1949	77421	do	QS	1				45.9	B						14.8	1–#4
Do	do	do	1949	77422	do	QS	1				43.7	B						12.8	1–#4
Do	Great Falls	Prosp	1921	20907	Stone	Mica gneiss		2.83	.4	5.4				15.7	9				
Do	do	do	1921	20908	do	Sericite gneiss		2.72	.7	4.0				18.3	17				
Do	Herndon	do	1907	1954	do	Diabase		2.70	.1					18.7	19				
Do	do	do	1907	2000	do	Feldspathic sandstone.		2.50	1.6	5.1				17.4	11				
Do	do	do	1919	15011	do	Rhyolite breccia		2.67	1.4	5.9									
Do	do	do	1921	19724	do	Diabase		3.07	.2	3.8				17.7	10				
Do	do	do	1924	24523	do	Conglomerate sandstone.		2.92	1.0	5.0				17.3	8				
Do	do	do	1924	25012	do	Calcareous shale		2.55	2.6	6.0				17.0	14				
Do	do	Local	1925	26705	do	Diabase		2.97	.3	3.4				18.7	10				
Do	do	Prosp	1946	72038	do	do		2.98	.2		14.2	A	53,200		18			.8	1½–#4
Do	do	do	1946	72039	do	Feldspathic sandstone.		2.54	3.1		22.0	A	23,300		8			10.6	1½–#4
Do	do	do	1946	72040	do	Diabase		2.96	.5		12.6	A	54,100		22			.3	1½–#4
Do	Hunter	do	1946	71789	do	Biotite-epidote schist.		2.76	.3		17.6	A	46,100		16			.2	1½–#4
Do	do	do	1946	71790	do	Serpentine		2.71	1.2		19.3	A	24,840		8			3.9	1½–#4
Do	do	do	1946	71796	do	Mica schist		2.80	1.1		34.8	A	9,000		4			3.3	1½–#4
Do	Langley	Local	1921	20906	do	Amphibolite		3.08	.2	2.5				18.3	12				
Do	do	Prosp	1950	81964	do	Biotite gneiss					25.7	A							
Do	Lewinsville	do	1922	21368	do	Mica gneiss				9.2									
Do	Lincolnia	Local	1942	59075	Gravel	QQzSC					51.9	A							
Do	do	do	1942	59111	do	QQzSC					51.2	A							
Do	Lorton	Prosp	1908	3017	Stone	Sericite gneiss		2.75	.1	2.1				18.8	14				
Do	McLean	do	1914	8226	do	Granite gneiss		2.80	.2	3.7				18.5	4				
Do	Merrifield	Local	1923	24481	do	Granite [6]		2.75	.3	3.6				18.3	8				
Do	Mount Vernon	Prosp	1931	33972	Gravel	QCS	2			19.5		A							
Do	do	do	1931	33981	do	QCS				16.7		A							
Do	Oakton	do	1922	22427	Stone	Biotite gneiss		2.69	1.5	10.6				15.3	9				
Do	Spring Hill	do	1921	20909	do	Sericite gneiss		2.81	.2	6.1									
Do	Sunset Hills	Local	1946	71784	do	Serpentine		2.68	.5		13.9	A	39,950		14			.4	1½–#4
Do	Vienna	Prosp	1915	8779	do	Epidote-chlorite schist.		2.70	.4	8.1				17.4	13				
Do	do	do	1922	21706	do	Mica gneiss		2.84	.3					16.3	10				
Do	do	do	1922	22662	do	Feldspathic quartzite.		2.74	.1	2.4				18.7	22				
Do	do	do	1923	23764	do	Sericite gneiss		2.72	.3	3.4				18.7	10				

Do	Wellington Villa	do	1931	33963	Gravel		2			13.3		A							
Fauquier	Bealeton	do	1906	1785	Stone	Slate		2.70	.8	3.8				11.7	10				
Do	Broad Run	Local	1906	1600	do	Quartzite		2.65	.2	3.1									
Do	do	do	1910	4617	do	Micaceous quartzite.		2.65	1.8	2.6									
Do	do	Prosp	1910	4900A	do	Quartz		2.65	.0				28,400	19.5	7				
Do	do	do	1910	4900B	do	Epidosite		3.20	.1				28,000	19.0	8				
Do	do	do	1910	4900C	do	Sandstone		2.65	.1					19.0	11				
Do	Catlett	do	1903	782	do	Diabase		3.00	.1	1.8									
Do	do	do	1910	4175	do	Gabbro		3.00	.2	1.8				18.5	20				
Do	Delaplane	do	1915	8304	do	Hornblende granite.		2.65	.6	6.4				19.5	4				
Do	do	do	1915	8305	do	Diabase [6]		3.00	.4	2.3				18.7	38				
Do	Marshall	do	1919	15382	do	Granite [6]		2.60	1.3	6.6				18.0	8				
Do	do	Local	1920	16030	do	do.[6]		2.64	.4	3.8				18.7	10				
Do	Midland	Prosp	1920	16226	do	Basalt [6]		2.81	.5	3.0				17.3	8				
Do	Rectortown	do	1913	6603	do	Diabase [6]								17.3	6				
Do	Remington	do	1906	1786	do	Slate		2.70	.8	2.2				16.0	21				
Do	The Plains	do	1908	2414	do	Epidosite		3.00	.3	2.0				18.6	22				
Do	do	do	1908	2415	do	Schist		2.70	.4	5.4				17.8	11				
Do	do	do	1908	2416	do	Gneiss		2.70	.3	4.1				18.7	6				
Do	do	do	1909	3132	do	Hornblende-epidote schist.		3.05	.7	8.8				17.9	20				
Do	do	do	1918	13195	do	Epidosite		3.02	.3	2.4				18.3	22				
Do	do	do	1918	13196	do	do		2.99	.4	7.9				16.0	17				
Do	do	do	1920	15767	do	Chlorite-talc schist.		2.89	.4	3.9				16.7	12				
Do	do	do	1920	15768	do	do		2.84	.9	10.7									
Do	do	do	1920	15769	do	Chlorite schist		2.91	.4	11.7									
Do	do	do	1920	15770	do	Chlorite-epidote schist.		2.95	.3	3.2				17.3	24				
Do	do	do	1920	15896	do	do		3.00	.3	4.8				17.0	10				
Do	do	do	1920	16308	do	Hornblende-epidote schist.		2.97	.2	9.9									
Do	do	do	1920	16309	do	Chlorite-epidote schist.		2.96	.4	5.2									
Do	do	do	1920	16310	do	Hornblende-epidote schist.		3.04	.2	6.2					22				
Do	do	do	1920	16312	do	Chlorite-epidote schist.		3.01	.2	6.4									
Do	do	Local	1920	16626	do	do		2.94	.2	4.4					31				
Do	do	do	1920	17086	do	do		3.00	.1	5.3				15.6	8				
Do	do	Prosp	1921	18042	do	Talc-epidote schist.		3.10	.4	7.9									
Do	do	do	1921	18043	do	do		3.09	.4	4.6									
Do	do	do	1921	18144	do	Epidote amphibolite.		3.09	.2	2.2				17.7	26				
Do	do	Local	1921	18893	do	Amphibolite		3.02	.2	2.8									
Do	do	do	1921	18894	do	do		3.01	.1	3.3				17.3	12				
Do	Warrenton	Prosp	1911	5639	do	Epidosite		2.90	.3	4.0									
Do	do	do	1911	5640	do	do		3.10	.5	3.3				18.7	16				
Do	do	do	1911	5641	do	do		3.00	.9	3.6				19.3	16				
Do	do	do	1912	5762	do	Diabase		3.00	.2	2.1				18.6	24				
Do	do	do	1916	9870	do	Chlorite-epidote schist.		3.00	.8	3.6									
Do	do	do	1916	9919	do	Amphibolite		3.00	.4	4.6									
Do	do	do	1916	9920	do	do		2.90	1.4	5.9				8.0					
Do	do	do	1916	10304	do	do		2.97	.3	3.5				14.7	11				
Do	do	Local	1919	14460	do	Epidosite		3.12	.7	6.0				18.3					
Floyd	Bent Mountain	Prosp	1936	42855	do	Granite				5.7	43.9	A						S	1½-1
Do	do	do	1936	42856	do	do				3.5	29.6	A						S	1½-1
Do	do	do	1936	42857	do	do.[1]				9.7	72.6	A						Q	1½-1
Do	do	do	1936	42858	do	do.[1]				7.1	55.5	A							
Do	Copper Hill	do	1935	42207	do	Quartzite				6.0	50.6	A							
Do	do	do	1935	42208	do	Granite gneiss				9.2	41.9	A							
Do	do	do	1935	42210	do	Granite				4.3	29.8	A							
Do	do	do	1935	42212	do	do				4.2	44.3	A							
Do	do	do	1935	42213	do	Granite gneiss				13.5	78.7	A							
Do	do	do	1935	42216	do	Granite				5.6	57.8	A							
Do	do	do	1935	42219	do	Granite gneiss				9.8	48.6	A							
Do	do	do	1935	42220	do	do				5.4	38.3	A							
Do	do	do	1935	42221	do	Mica gneiss				14.0	73.2	A							
Do	do	do	1936	42854	do	Granite				3.3	42.5	A						S	1½-1
Do	do	do	1936	42881	do	do				5.5	43.6	A							
Do	Floyd	do	1921	20096	do	Hornblende gneiss		2.70	1.7	10.6				11.7	7				
Do	do	do	1935	42226	do	Mica gneiss				12.7	84.1	A							
Do	do	do	1935	42227	do	Sericite schist				17.6	62.0	A							
Do	do	do	1935	42228	do	Biotite schist					25.8	A							
Do	do	do	1935	42232	do	do				6.3	45.6	A							

[1] Weathered. [6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Floyd	Floyd	Prosp	1935	42234	Stone	Hornblende schist					74.1	A							
Do	do	do	1935	42235	do	do				10.9	58.4	A							
Do	do	do	1935	42237	do	Diabase				3.0	50.3	A							
Do	do	do	1935	42238	do	Mica gneiss				7.2	56.4	A							
Do	do	do	1935	42239	do	Hornblende gneiss				12.0	67.4	A							
Do	do	do	1935	42240	do	Gneiss				22.3	64.0	A							
Do	do	do	1935	42241	do	Diabase				2.5	13.5	A							
Do	do	do	1935	42243	do	Hornblende schist				9.1	59.4	A							
Do	do	do	1935	42244	do	Mica gneiss				11.8	50.2	A							
Do	do	do	1935	42245	do	do				8.3	51.9	A							
Do	do	do	1935	42246	do	Mica schist				10.0									
Do	do	do	1935	42247	do	Mica gneiss				10.0	66.8	A							
Do	do	do	1935	42248	do	Diabase				11.1	31.7	A							
Do	do	do	1935	42249	do	Sericite schist				16.8	49.1	A							
Do	do	do	1935	42250	do	Mica schist				12.6	49.4	A							
Do	do	do	1935	42280	do	Mica gneiss				5.4	43.0	A							
Do	do	do	1935	42281	do	do				4.3	54.2	A							
Do	do	do	1935	42282	do	do				4.0	61.6	A							
Do	do	do	1935	42283	do	Granite				7.9	52.9	A							
Do	do	do	1935	42284	do	do. [1]				14.6	87.4	A							
Do	do	do	1935	42285	do	do				9.0	66.8	A							
Do	do	do	1935	42287	do	Sericite schist				16.7	50.8	A							
Do	do	do	1935	42288	do	Granite				8.2	52.0	A							
Do	do	do	1936	42925	do	Gneissoid granite				3.7	31.2	A							
Do	do	do	1936	42936	do	Mica schist				5.2	39.7	A							
Do	do	do	1936	42946	do	Amphibolite				3.7	54.7	A							
Do	do	do	1936	42974	do	Quartzite				2.5	27.8	A						S	1½–1
Do	do	do	1936	42975	do	Amphibolite				10.9	77.0	A						U	1½–1
Do	do	do	1936	43005	do	do				3.0	44.7	A						S	1½–1
Do	do	do	1936	43009	do	Granite				3.5	43.4	A							
Do	do	do	1936	43010	do	do				5.9	57.3	A							
Do	do	do	1936	43011	do	Mica gneiss				9.6	52.0	A						Q	1½–1
Do	do	do	1936	43020	do	Amphibolite				4.2								S	1½–1
Do	do	do	1936	43023	do	do				6.4	74.8	A							
Do	do	do	1936	43085	do	do				2.9	45.8	A							
Do	do	do	1936	43087	do	Mica gneiss				5.2								S	1½–1
Do	do	do	1936	43126	do	Serpentine		2.80	0.3	2.6	11.6	A							
Do	do	do	1936	43127	do	Diabase		3.10	.4	2.5	24.1	A							
Do	Meadows of Dan.	do	1935	42289	do	Amphibolite				5.1	49.6	A							
Do	do	do	1935	42290	do	Granite gneiss				6.7	50.3	A							
Do	Pizarro	do	1939	46792	do	Quartzite					44.3	A							
Do	Smart	do	1936	42790	do	Quartz				4.1	38.9	A							
Do	do	do	1936	42791	do	do				4.4	35.0	A							
Fluvanna	Carysbrook	do	1923	24464	do	Chert		2.58	.7	3.6				19.3	20				
Do	Shores	do	1913	6465	do	Sericite-chlorite schist.		2.75	.2	4.1				13.0	9				
Do	do	Comm	1918	13765	do	Schist		2.91	.2	2.4				18.3	10				
Do	Strathmore	Local	1912	5923	do	Chlorite-epidote schist.		2.80	.2	5.0			13,210	16.1	6				
Do	do	Comm	1920	15485	do	Chlorite schist		2.96	.2	3.3				15.0	10				
Do	do	do	1923	23852	do	Gneiss		2.81	.2	5.2				18.7	7				
Franklin	Bent Mountain	Prosp	1935	42205	do	Biotite gneiss				4.4	38.1	A							
Do	do	do	1937	44412	do	Sericite gneiss				5.2	29.8	A			12			S	1½–1
Do	Copper Hill	do	1935	42211	do	Gneissoid granite				5.9	55.7	A							
Do	do	do	1935	42214	do	Granite gneiss				6.1	38.1	A							
Do	do	do	1935	42215	do	do				5.8	44.8	A							
Do	do	do	1935	42224	do	Granite				5.0	51.6	A							
Do	do	do	1936	42893	do	Biotite gneiss				3.3	31.2	A						S	1½–1
Do	do	do	1936	42947	do	Granite				3.0	33.4	A							
Do	do	do	1936	42963	do	do				2.7	31.8	A						S	1½–1
Do	do	do	1936	43004	do	do				4.0	40.6	A						S	1½–1
Do	do	do	1937	44410	do	Sericite gneiss				7.8	32.3	A						S	1½–1
Do	do	do	1937	44411	do	Granite				4.7	30.5	A			8			S	1½–1
Do	do	Local	1939	46735	do	Biotite gneiss					32.7	A	21,350						
Do	Endicott	Prosp	1935	42217	do	Mica schist				9.5	50.6	A							
Do	do	do	1935	42218	do	do				19.3	74.8	A							

Do	do	do	1935	42222	do	do				10.0	53.3	A							
Do	do	do	1935	42223	do	Gneissoid granite				4.5	42.6	A							
Do	do	do	1935	42230	do	Biotite gneiss				6.1	36.6	A							
Do	do	do	1935	42231	do	Biotite schist				9.2	45.6	A							
Do	do	do	1935	42233	do	do				9.5	55.2	A							
Do	do	do	1935	42236	do	Amphibolite				5.8	43.6	A							
Frederick	Stephens City	Comm	1936	42923	do	Limestone				6.2					4			S	1½–1
Do	do	do	1949	78931	do	do		2.72	.2		29.1	A						0.8	1½–¾
Do	do	do	1950	80303A	do	do					36.2	F							
Do	do	do	1950	80303B	do	do					29.3	A							
Do	Winchester	Prosp	1918	13194	do	do		2.72	.1	7.5				15.3	7				
Do	do	do	1919	14583	do	do		2.74	.1	8.4				15.3	3				
Do	do	Local	1919	14879	do	Dolomite		2.78	.2	3.5				16.7	14				
Do	do	Prosp	1919	14880	do	Calcareous slate		2.53	2.0	8.9				.0	5				
Do	do	Local	1919	14969	do	Dolomite		2.82	.1	3.0				17.3	15				
Do	do	Comm	1943	61504	do	Limestone		2.73	.4		16.0	B							
Giles	Bluff City	Prosp	1917	11246	Gravel	QzS		2.64	.5	[11] 3.1									
Do	do	do	1917	11248	Stone	Siliceous dolomite		2.81	.2	3.6									
Do	do	Local	1924	25108	Gravel	QCS	2			13.0		A							
Do	Eggleston	Comm	1911	5678	Stone	Dolomite		2.85	.2	4.4			45,690	16.0	24				
Do	Klotz	Prosp	1919	14493	do	Siliceous dolomite		2.80	.3	2.7				17.3	13				
Do	do	Comm	1923	23058	do	Limestone		2.72	.1	4.0				16.0	7				
Do	do	do	1946	70880	do	Dolomitic limestone.					24.3	A							
Do	do	do	1946	70881	do	do					24.6	A							
Do	do	do	1947	73606	do	Limestone					18.2	B							
Do	Pembroke	Prosp	1912	5978	do	Dolomitic marble		2.85	.2	3.1				14.7	11				
Do	do	Comm	1919	14463	do	Siliceous dolomite		2.84	.2	3.2				16.3	9				
Do	do	Prosp	1923	23059	do	Dolomite		2.84	.4	3.1				16.7	13				
Do	do	Comm	1935	42371	do	do												2.7	1½–#4
Do	do	do	1935	42478	do	do					21.0	A							
Do	do	do	1937	44990	do	do					17.3	A							
Do	do	do	1939	46857	do	Quartzite					21.3	A							
Do	do	do	1940	51632	do	Dolomite					21.4	B							
Do	do	do	1946	70882	do	Dolomitic limestone.					21.6	A							
Do	do	do	1946	71388	do	do		2.83	.3		19.5	A							
Do	do	do	1946	71389	do	do		2.83	.3		20.3	A							
Do	do	do	1947	73681	do	do					16.9	B							
Do	do	do	1948	77033	do	do					23.1	A						2.4	1½–#4
Do	do	do	1949	78180	do	do					18.5	B							
Do	do	do	1949	78181	do	do												.3	¾–#4
Do	do	do	1949	79038	do	do					17.4	B						1.1	1–#4
Goochland	Boscobel	Local	1905	1317	do	Granite gneiss		2.65	.2	4.0				18.6					
Do	do	do	1912	5924	do	do		2.60	.2	4.5			13,550	19.3	8				
Do	do	Comm	1934	40274	do	Granite					32.7	A							
Do	Irwin	Prosp	1922	21210	do	Biotite gneiss		2.82	.1	4.3				15.7	8				
Do	Manakin	Comm	1937	44380	do	Gneissoid granite				3.6	25.2	A			9				
Do	State Farm	Prosp	1906	1857	do	Gneiss		2.70	.2	3.1				17.6	9				
Do	do	do	1909	3240	do	Granite gneiss		2.65	.1	3.5				19.0	12				
Grayson	Fancy Gap	do	1939	46551	do	Biotite gneiss					37.5	A							
Do	Galax	do	1939	46534	do	Mica schist					48.7	A							
Do	do	do	1939	46581	do	Mica gneiss					38.7	A							
Do	do	do	1946	71281	do	Limestone					29.6	A						1.6	1½–⅜
Do	Grant	Comm	1947	74283	do	Marble		2.73	.3		33.7	A						1.4	1½–#4
Do	do	do	1947	74284	do	Syenite [6]		2.84	.4		17.9	A						.5	1½–#4
Do	Independence	Prosp	1936	42901	do	Granite				4.6	36.2	A						S	1½–1
Greensville	Emporia	Local	1906	1778	do	do		2.70	.1	2.5				18.7	10				
Do	do	do	1909	3468	do	Granite gneiss		2.90	.2	3.5				17.8	9				
Do	do	Prosp	1922	22624	do	Gabbro		2.79	.2	2.4				18.7	13				
Do	Skippers	Comm	1934	40279	do	Granite					17.4	A							
Do	do	do	1941	55750	do	do		2.66	.1		17.7	B	43,600						
Do	do	do	1943	61778	do	do		2.64	.3		17.5	B							
Halifax	Virgilina	Prosp	1908	3036	do	Andesite [6]		2.75	.1	3.3									
Do	do	do	1908	3172	do	Epidote-chlorite schist.		2.70	.1	3.7									
Hanover	Verdon	do	1906	1878	do	Granite		2.65	.3	2.8				19.0	19				
Henrico	Forest Hill	Comm	1917	11412	do	do							19,270	18.0	6				
Do	Korah	do	1913	6615	do	Biotite granite							20,300						
Do	Richmond	do	1906	1823	do	Granite		2.65	.3	4.1				17.8	8				
Do	do	do	1909	3933	do	Biotite granite		2.65	.1	3.1				18.8	11				
Do	do	do	1915	8747	do	Granite		2.60	.4	4.4				19.0	7				
Do	do	do	1915	8942	do	Aplitic granite		2.65	.3	2.3				18.2	8				
Do	do	do	1920	16988	do	Biotite granite		2.63	.3	3.4				18.0	10				
Do	do	do	1932	34713	Gravel	QCS				13.0	43.8	A							
Do	do	do	1934	40268	do	QQzCS	2			6.7	39.2	A							
Do	do	do	1934	40275	Stone	Granite					36.6	A							
Do	do	do	1937	44379	do	Micaceous quartzite.				3.7	43.2	A							

[1] Weathered. [6] Altered. [11] Tested by method for stone.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Henrico	Richmond	Comm	1941	53521	Gravel	QzSQ	1½				29.3	A							
Do	do	do	1943	61776	do	QzSQ	¾	2.60	0.8		34.1	B							
Do	do	do	1943	61988	do	QQzG(S)	2½				30.8	A							
Do	do	do	1943	61994	do	QQzG(S)	2½				31.8	A							
Highland	Hightown (Back Creek).	Local	1947	72709	do		4				30.3	A							
Do	Hightown	do	1947	72716	Stone	Argillaceous limestone.		2.72	.2		25.1	A						1.9	1½–#4
Do	do	Prosp	1947	72717	do	Sandstone		2.57	1.2		52.9	A						9.1	1½–#4
Do	do	do	1947	72718	do	do		2.58	1.0		31.9	A						3.3	1½–#4
Do	do	do	1947	72719	do	Ferruginous sandstone.		2.66	1.2		14.6	A						1.1	1½–#4
Do	do	Local	1947	72720	do	Argillaceous limestone.		2.73	.4		22.4	A						2.5	1½–#4
Lee	Cumberland Gap.	do	1908	2863	do	Limestone		2.70	.3	4.0				16.5	10				
Do	do	do	1908	2864	do	do		2.70	.0	4.8				16.0	6				
Do	Dryden	Prosp	1919	14584	do	Siliceous limestone		2.70	.2	5.7				14.7	7				
Do	do	do	1921	20123	do	Limestone		2.71	.1	5.8				15.3	6				
Do	do	do	1921	20124	do	do		2.73	.2	5.4				15.3	3				
Do	do	do	1921	20370	do	do		2.70	.2	5.5				15.0	6				
Do	Jonesville	do	1923	23157	do	Argillaceous limestone.		2.66	1.3	8.0				6.3	5				
Do	Stickleyville	do	1918	12878	do	do		2.67	.3	9.1				14.3	8				
Do	do	do	1918	12879	do	Limestone		2.65	.3	5.4				13.3	6				
Do	do	do	1918	12880	do	Ferruginous sandstone.		2.67	.5	5.3				8.0	8				
Do	do	do	1918	13176	do	Limestone		2.71	.1	6.2				16.0	8				
Do	do	do	1918	13641	do	do		2.70	.1	5.4				15.3	11				
Do	do	do	1919	13917	do	do		2.70	.2	6.1				16.3	4				
Do	do	do	1919	13918	do	Argillaceous limestone.		2.72	.2	6.0				5.7	5				
Do	Wheeler Station	Local	1937	44255	do	do				3.5	20.5	B			5				
Loudoun	Aldie	Prosp	1921	19718	do	Basalt		2.89	.2	3.2				17.7	10				
Do	do	do	1921	19723	do	do.[6]		2.90	.2	3.7				17.7	9				
Do	do	Local	1921	20541	do	Diabase [6]		2.83	.4	3.3				18.0	20				
Do	do	do	1921	20542	do	Basalt [6]		2.89	.2	3.1				18.3	12				
Do	do	Prosp	1928	30274	do	Sericite schist		2.99	.2	6.4				17.0	11				
Do	Arcola	do	1921	19722	do	Basalt		2.99	.1	1.9				18.7	34				
Do	do	do	1923	23528	do	Fragmental rhyolite.		2.66	.5	1.9				18.0	26				
Do	do	do	1923	23529	do	do		2.61	1.2	3.0				17.7	15				
Do	Bluemont	do	1905	1322	do	Hornblende schist		3.00	1.0	2.9				13.1	13				
Do	Chantilly	do	1946	72045	do	Quartz diorite		2.75	1.6		25.6	A	22,200		8			6.6	1½–#4
Do	Fairview	do	1946	72041	do	Diabase [6]		2.92	1.0		24.9	A	37,500		11			3.5	1½–#4
Do	Hamilton	do	1916	10009	do	Amphibolite		2.85	.2	3.9				17.3	10				
Do	Leesburg	Local	1914	7832	do	Cherty limestone		2.70	.3	5.3				13.2	6				
Do	do	Prosp	1920	15488	do	Calcareous sandstone.		2.43	1.9	3.4				15.7	17				
Do	do	do	1920	15489	do	Chlorite-epidote schist.		3.02	.6	12.3					8				
Do	do	do	1920	15490	do	Crystalline limestone.		2.76	.5	6.3				13.7	6				
Do	do	Local	1921	20514	do	Marble				4.8				17.3	10				
Do	do	do	1922	21728	do	Limestone				6.0									
Do	do	do	1922	21729	do	do				5.6									
Do	do	Prosp	1924	24802	do	Felsitic conglomerate.		2.72	.3	10.0									
Do	do	do	1924	24855	do	Conglomerate		2.74	.2	4.3									
Do	do	do	1924	24903	do	Quartzite								18.7	16				
Do	Lucketts	do	1920	15487	do	Limestone conglomerate.		2.81	.2	3.8				17.0	10				
Do	do	Local	1920	16031	do	Conglomerate		3.01	.3	5.8									
Do	do	do	1920	16257	do	Limestone conglomerate.		2.82	.2	4.1									
Do	do	do	1920	16414	do	do		2.80	.2	4.3					9				

Do	do	do	1920	17087	do	do		2.81	.2	5.9									
Do	do	do	1921	18762	do	Sericite schist		2.70	.3	6.7				18.7	7				
Do	do	Prosp	1921	18789	do	Quartzite		2.65	.2	6.2				19.0	8				
Do	Oatlands	do	1924	24599	do	do		2.64	.3	4.6									
Do	Paeonian Springs	do	1904	1011	do	Gneiss		2.70	.3	5.7				18.0	14				
Do	do	do	1904	1012	do	Epidosite		2.75	.3	3.6				19.1	14				
Do	Point of Rocks (Md.).	do	1919	14197	do	Sericite gneiss		2.70	.2	5.7				19.3	12				
Do	do	do	1919	14198	do	Limestone conglomerate.		2.80	.2	4.5									
Do	Trap Rock	do	1906	1690	do	Diabase		3.00	.2	3.1				18.2	14				
Do	do	do	1907	1991	do	Gabbroitic diabase		3.00	.5	2.8				18.5	16				
Do	do	Comm	1915	9047	do	Diabase		3.00	.2	2.6				18.3	13				
Do	do	do	1920	16047	do	do				2.5									
Do	do	do	1920	16048	do	do				2.6									
Do	do	do	1922	22635	do	do				2.1									
Do	do	do	1935	42046	do	do				2.7					12				
Do	do	do	1938	44941	do	do				2.7	19.5	A			12				
Do	do	do	1939	46732	do	do									12				
Do	do	do	1942	57683	do	do					16.8	B							
Do	do	do	1942	60424	do	do					18.8	A							
Do	do	do	1943	60644	do	do					20.3	A							
Do	do	do	1943	61821	do	do					19.0	A							
Do	do	do	1943	62483	do	do					17.6	B							
Do	do	do	1943	63177	do	do		3.00	.3		15.7	A							
Do	do	do	1944	64898	do	do					16.6	A							
Do	do	do	1944	65773	do	do					20.0	A							
Do	do	do	1945	68382	do	do					18.4	B							
Do	do	do	1947	74419	do	do					20.6	A							
Do	do	do	1947	74420	do	do					20.6	C							
Do	do	do	1948	76180	do	do					19.3	B							
Do	do	do	1949	78022	do	do					18.3	B						1.3	¾–#4
Do	do	do	1949	78146	do	do		3.05	.5						14			.0	2½–1½
Do	do	do	1950	81850	do	do					19.6	B							
Do	Willard	Prosp	1946	72076	do	Ferruginous sandstone.		2.52	3.3		26.8	A	13,780		4			26.1	1½–#4
Louisa	Mineral	do	1903	871	do	Chlorite gneiss		3.00	.1	8.1									
Lunenburg	Kenbridge	Local	1911	5716	do	Gneissoid granite		2.60	.1	3.1				19.1					
Do	do	do	1929	32126	do	Granite		2.62	.6	5.0				18.0	7				
Madison	Criglersville	Prosp	1929	32334	do	do.[6]		2.66	.5	4.4				18.7	9				
Do	do	do	1929	32336	do	Granite gneiss		2.62	.8	5.4				18.0	10				
Do	do	do	1929	32337	do	Biotite gneiss		2.74	.3	6.3				18.0	7				
Mecklenburg.	Chase City	do	1909	3149	do	Epidote-chlorite schist.		2.95	.3	3.5				14.5	12				
Do	do	do	1909	3150	do	Sericite schist		2.70	.4	8.5				12.4	10				
Do	Clarksville	do	1909	3174	do	Syenite		2.45	1.9	3.5				18.3	11				
Do	do	do	1909	3175	do	Sericite gneiss		2.70	.2	4.3				15.9	6				
Do	do	do	1909	3176	do	Biotite schist		2.70	.5	4.2				16.3	9				
Do	do	do	1909	3267	do	Syenite		2.45	2.0					18.6	17				
Do	do	do	1909	3268	do	Sericite gneiss		2.75	.1					17.5	9				
Do	do	do	1909	3269	do	Granite gneiss		2.65	.3	2.2				19.3	25				
Do	do	Local	1914	7849	do	Mica schist		2.65	.6	3.3				10.2	9				
Do	do	do	1914	7850	do	Syenite[6]				7.2				16.4	9				
Do	Soudan	do	1923	24436	do	Trachyte[6]		2.73	.2	4.6				16.7	7				
Montgomery.	Blacksburg	do	1902	537	do	Dolomite		2.90	.2	3.6									
Do	Newport	Prosp	1919	14284	do	Feldspathic sandstone.		2.59	1.1					16.7	8				
Do	Radford	Comm	1927	29231	do	Siliceous dolomite		2.83	.1	2.6				16.7	17			S	1½–1
Do	do	do	1927	29232	do	Dolomite		2.85	.1	3.0				16.7	17			S	1½–1
Do	do	do	1938	44998	do	do												3.6	1½–#4
Do	do	do	1938	46037	do	do					16.9	A							
Do	do	do	1938	46367	do	do					16.8	A							
Do	do	do	1939	46460	do	do					17.3	A							
Do	do	do	1939	46726	do	do					17.8	A							
Do	do	do	1939	46729	do	do					17.7	A							
Do	do	do	1939	46912	do	do					14.4	B							
Do	do	do	1946	72513	do	Dolomitic limestone.		2.77	.4		15.5	A						1.3	1½–#4
Do	do	do	1946	72514	do	do		2.82	.2		11.9	A						.0	2½–¾
Do	do	do	1947	73221	do	do		2.79	.4		17.3	A				103	3–¾	.5	3–¾
Do	do	do	1947	73549	do	Limestone					17.7	A						.5	1½–#4
Do	do	do	1947	73550	do	do												1.6	½–#8
Do	do	do	1947	74197	do	do					14.6	A						.4	2–#4
Do	do	do	1947	74198	do	do					16.5	A						.0	1½–#4
Do	do	do	1948	75505	do	Dolomitic limestone.					19.8	A							
Do	do	do	1948	76242	do	Limestone					20.0	C							
Do	do	do	1948	76243	do	do					13.5	D							
Do	do	do	1949	77448	do	Dolomite					14.5	A						.2	1½–#4

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Montgomery	Radford	Comm	1950	80946	Stone	Dolomitic limestone.		2.79	0.2		14.2	A							
Do	do	do	1950	81179	do	Limestone		2.80	.3		16.1	A							
Nelson	Afton	Prosp	1908	3096	do	Epidote-chlorite schist.		3.00	.4	3.6				18.5	7				
Do	do	do	1913	6669	do	Chlorite schist		2.90	.2					16.1	13				
Do	Arrington	do	1913	6474	do	Biotite granite [6]		2.80	.2	5.6				16.3	6				
Do	do	do	1913	6475	do	Hornblende gneiss		3.10	.2	2.5				17.3	10				
Do	do	do	1913	6494	do	Biotite gneiss		2.80	.1	5.3				18.5	6				
Do	do	Local	1914	8225	do	Amphibolite		3.05	.1	2.4				18.0	8				
Do	do	Prosp	1915	8428	do	Gneissoid granite		2.65	.2	3.5				18.8	9				
Do	do	do	1919	13900	do	Gabbro		3.10	.5	3.6				17.6	15				
Do	do	do	1919	15152	do	Amphibolite		2.97	.8	3.5				18.3	14				
Do	do	do	1920	15993	do	Quartz		2.64	.1	7.8				19.3	10				
Do	do	do	1920	15994	do	Gneiss		2.74	.9	9.3				18.3	11				
Do	do	Local	1920	15995	do	Amphibolite		3.08	.3	2.7				16.3	13				
Do	Faber	Prosp	1907	1975	do	Feldspathic sandstone.		2.70	.2	3.6				18.3	13				
Do	Greenway	Local	1912	5925	do	Feldspathic quartzite.		2.65	.2	2.5			16,500	18.8	11				
Do	Love	Prosp	1939	46610	do	Unakite					21.3	A							
Do	do	do	1939	46785	do	Epidosite					21.6	A							
Do	do	do	1939	46796	do	Chlorite schist					11.9	A							
Do	do	do	1939	46797	do	do					20.2	A							
Do	do	do	1939	46798	do	do					11.9	A							
Do	do	do	1939	46800	do	Epidosite					16.1	A							
Do	do	do	1939	46801	do	Chlorite schist					12.2	A							
Do	do	do	1939	46802	do	do					12.1	A							
Do	do	do	1939	46803	do	Granite porphyry					25.7	A							
Do	do	do	1939	46804	do	Epidosite					17.4	A							
Do	Montebello	do	1939	46712	do	Shale					29.7	A							
Do	do	do	1939	46713	do	Sandstone					37.0	A							
Do	do	do	1939	46714	do	Feldspathic quartzite.					42.0	A							
Do	do	do	1939	46715	do	Granite					42.0	A							
Do	do	do	1939	46716	do	Epidosite					14.3	A							
Do	do	do	1939	46717	do	Sandstone					73.3	A							
Do	do	do	1939	46718	do	Epidosite					35.6	A							
Do	do	do	1939	46724	do	Sandstone					58.2	A							
Do	do	Local	1941	53280	do	Unakite					29.0	A							
Do	do	do	1941	53281	do	do					33.2	A							
Do	do	do	1941	53459	do	do					32.5	B							
Do	Oak Ridge	Prosp	1911	5714	do	Quartz		2.65	.0	8.2									
Do	Rockfish	Local	1908	2820	do	Sericite gneiss		2.80	.2	7.9				17.3	5				
Do	do	do	1908	2821	do	do		2.70	.2	6.0				17.3	6				
Do	Schuyler	Prosp	1922	22712	do	Soapstone				14.8									
Do	Vesuvius	Local	1939	46762	do	Granite and epidosite.					29.7	A							
Nottoway	Burkeville	Comm	1934	40281	do	Granite					41.8	A							
Do	do	do	1937	44263	do	do				2.5	40.9	A			9				
Do	Crewe	Prosp	1906	1584	do	Granite gneiss		2.65	.3	9.7				14.6	6				
Orange	Barboursville	do	1921	20322	do	Micaceous sandstone.		2.64	1.0	12.6				12.7	5				
Do	do	do	1921	20323	do	Talc amphibolite		2.91	.7	12.0				8.0	5				
Do	do	Local	1921	20324	do	Micaceous sandstone.		2.64	.7	7.6				15.3	6				
Do	do	Prosp	1921	21139	do	Ferruginous sandstone.		2.47	2.4	7.3				14.3	5				
Do	do	Local	1923	23618	do	Amphibolite		3.09	.6	2.9				18.3	9				
Do	do	do	1923	23851	do	Micaceous quartzite.		2.69	.5	3.8				18.0	6				
Do	Locustgrove	Prosp	1934	40066	do	Granite [6]		2.65	.3	2.6				18.7	11				
Do	Orange	do	1905	1171	do	Diabase [6]		3.00	.2	2.2				19.2	34				
Do	do	do	1934	40304	do	Andesite [6]		3.09	.2	2.6					17				
Do	do	Comm	1934	40607	do	Sandstone		2.93	1.0	3.1									

Page	Compton	Local	1920	15944	do	Feldspathic sandstone.		2.38	3.8	18.0				8.3	4			
Do	Luray	Prosp	1916	10099	do	Argillaceous limestone.		2.68	.4	5.4				14.3	5			
Do	do	do	1923	22783	do	Rhyolite breccia		2.96	1.5	6.0								
Do	do	Local	1935	42108	do	Argillaceous limestone.				3.4					13		S	1½–1
Do	do	do	1935	43072	do	Granite				3.5					15			
Do	do	do	1937	44612	do	Argillaceous limestone.				6.0	26.8	A			9		S	1½–1
Do	Skyland	Prosp	1932	34757	do	Diabase [6]		3.00	.3	1.7				15.0	17			
Do	do	do	1932	34758	do	Epidosite		3.19	.5	2.1				19.3	39			
Do	do	do	1932	34759	do	Chlorite-epidote schist.		3.12	.2	2.8				18.0	32			
Do	do	do	1932	34760	do	do		3.16	.3	2.5				17.0	40			
Do	Stanley	do	1937	44611	do	Quartzite				2.6	25.8	A			12		S	1½–1
Patrick	Meadows of Dan	do	1935	42291	do	Biotite gneiss				7.7	44.2	A						
Do	do	do	1935	42292	do	do				9.2	59.4	A						
Do	do	do	1935	42293	do	Granite gneiss				9.9	64.2	A						
Do	do	do	1935	42294	do	do				7.6	51.4	A						
Do	do	do	1935	42295	do	do				11.7	70.5	A						
Do	do	do	1935	42296	do	Biotite gneiss				10.0	56.8	A						
Do	do	do	1935	42297	do	do				16.4	72.8	A						
Do	do	do	1935	42298	do	do				8.7	58.2	A						
Do	do	do	1935	42299	do	do				11.9	67.4	A						
Do	do	do	1935	42300	do	do				10.1	58.5	A						
Do	do	do	1935	42302	do	Mica gneiss				10.7	51.6	A						
Do	do	do	1935	42303	do	do				20.1	62.3	A						
Do	do	do	1936	42661	do	do				5.5	54.0	A					S	1½–1
Do	do	do	1936	42877	do	Biotite gneiss				7.9	49.9	A						
Do	do	do	1936	42878	do	do				5.8	45.4	A						
Do	do	Local	1936	42928	do	Granite gneiss				4.8	56.8	A						
Do	do	do	1936	42929	do	Mica schist				4.6	50.5	A						
Do	do	do	1936	42978	do	Quartzite									9		S	1½–1
Do	do	Prosp	1936	43014	do	Aplitic granite				4.8	52.7	A					S	1½–1
Do	do	do	1936	43088	do	Mica gneiss				8.7	42.5	A						
Do	do	do	1936	43089	do	do				3.7	36.0	A						
Do	do	Local	1937	44353	do	Biotite gneiss				6.9	42.8	A						
Do	do	do	1937	44354	do	Micaceous quartzite.				3.5	38.0	A						
Do	do	do	1937	44528	do	Biotite gneiss				4.1	35.3	A						
Do	do	do	1937	44529	do	Biotite schist				8.8	42.1	A						
Do	do	do	1937	44530	do	do				5.4	41.9	A						
Do	do	do	1937	44588	do	do				6.9	44.9	A						
Do	do	do	1937	44589	do	do				4.7	34.0	A						
Do	do	do	1938	44809	do	Mica gneiss					33.3	A	24,660		7		4.3	1½–#4
Do	do	do	1938	44811	do	Biotite gneiss					47.6	A	15,880		6		4.3	1½–#4
Do	do	do	1938	44967	do	Quartzite					42.7	A					S	1½–1
Do	Snake Creek	Prosp	1935	42304	do	Biotite gneiss				11.0	58.9	A						
Do	do	do	1935	42306	do	Granite gneiss				7.1	58.8	A						
Do	Woolwine	do	1935	42273	do	Mica schist				10.0	60.1	A						
Do	do	do	1935	42274	do	do				18.0	56.3	A						
Do	do	do	1935	42275	do	do				11.0	50.0	A						
Do	do	do	1935	42276	do	Mica gneiss				7.4	44.6	A						
Do	do	do	1935	42277	do	Mica schist					31.8	A						
Do	do	do	1935	42278	do	do				10.2	28.9	A						
Do	do	do	1935	42279	do	Diabase [6]				5.6	52.7	A						
Do	do	do	1935	42286	do	Sericite schist				9.5	47.2	A						
Do	do	do	1936	42879	do	Mica gneiss				10.1	62.1	A						
Do	do	do	1936	42880	do	do				7.8	49.6	A						
Do	do	do	1937	44541	do	Micaceous limestone.				5.6	54.8	A						
Pittsylvania	Chatham	do	1913	7052	do	Ferruginous sandstone.		2.60	1.0	3.1				15.5	7			
Do	Danville	do	1909	3256	do	Gneissoid granite		2.65	.3	2.3				19.1	24			
Do	do	do	1909	3384	do	Biotite gneiss		2.70	.1					17.8	10			
Do	do	Local	1918	13529	do	do		2.75	.3	4.2				18.7	10			
Do	do	Comm	1926	28311	do	Granite gneiss				2.6								
Do	do	Prosp	1929	31292	do	Biotite gneiss		2.67	.2	3.6				18.7	9			
Do	Dry Fork	Local	1921	19943	do	Sandstone		2.62	.4	2.8				18.7	17			
Do	do	do	1921	19987	do	do		2.66	.3	2.7				17.7	15			
Do	New Design	do	1919	14384	do	Biotite gneiss		2.73	.2	4.5				18.0	6			
Prince Edward.	Farmville	Prosp	1908	2862	do	Syenite gneiss		2.70	.3	5.8				17.5	6			
Do	do	do	1908	2875	do	Quartz		2.65	.1	9.2								
Do	do	do	1909	4058	do	Granite [6]		2.60	.2	3.6				18.5	10			
Prince William.	Buckland	Local	1916	10298	do	Diabase		2.86	1.0					17.3	15			
Do	Gainesville	Prosp	1912	5876	do	Epidosite		2.90	.6	3.3				19.5	15			
Do	Haymarket	do	1909	3352	do	Basalt [6]		2.80	1.3	3.0				18.3	24			

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Prince William	Haymarket	Comm	1940	49179	Stone	Quartzite												S	1½–1
Do	Manassas	Prosp	1904	876	do	Diabase		3.00	0.3	2.2				18.6	25				
Do	do	do	1905	1312	do	Ferruginous sandstone.		2.50	2.2					18.1	47				
Do	do	do	1906	1599	do	Diabase		2.95	.5	2.9				17.9	17				
Do	do	Local	1906	1711	do	Ferruginous sandstone.		2.70	.7	3.6				18.0	28				
Do	do	Prosp	1914	7732	do	Granite		2.65	.3	3.7				18.7	17				
Do	do	do	1915	8589	do	Diabase [6]		3.00	.4	3.7				18.3	5				
Do	do	Local	1915	9091	do	Ferruginous sandstone.		2.45	2.0	14.5				6.7	4				
Do	do	do	1915	9092	do	do								5.7	6				
Do	do	do	1946	72079	do	do		2.34	4.5		53.7	A	12,100		6			13.0	1½–#4
Do	do	Prosp	1946	72080	do	do		2.18	6.3		95.5	A	3,500		3			69.4	1½–#4
Do	Nokesville	do	1906	1666	do	do		2.55	2.4					5.7	6				
Do	do	Local	1911	5492	do	do		2.60	1.8	4.0			17,780	16.3	7				
Do	Occoquan	do	1902	581	do	Gneiss		2.76	.2	3.4									
Do	do	Prosp	1906	1661	do	Granite gneiss		2.70	.5	3.9				19.0	13				
Do	do	Local	1913	7317	do	Sericite gneiss		2.70	.3	2.2				18.5	17				
Do	do	do	1919	15366	do	Granite [6]		2.62	.6	4.7				19.3	8				
Do	do	do	1921	20317	do	Granite gneiss		2.73	.6					18.3	8				
Do	do	Comm	1929	31556	do	Granite		2.68	.2	3.3			20,210	18.7	8				
Do	do	do	1929	31557	do	do		2.71	.2	3.4			17,870	18.7	9				
Do	Quantico	do	1925	28034	Gravel	QC	2			14.0		A							
Do	do	Prosp	1950	82108	Stone	Diabase		2.90	.8		17.1	A						6.7	1½–#4
Do	do	do	1950	82109	do	Greenstone		2.85	.8		16.5	A						3.4	1½–#4
Pulaski	Draper	Local	1920	15786	do	Limestone		2.68	.4	6.8				15.0	7				
Do	do	do	1920	15919	do	Siliceous limestone.		2.69	.2	5.3				16.3					
Do	do	do	1920	16025	do	Argillaceous limestone.		2.73	.1	5.4				15.0	7				
Do	do	do	1920	16026	do	do		2.65	.1	4.6				14.7	11				
Do	Dublin	do	1914	7625	do	do		2.80	.1	3.1				18.0	22				
Do	Pulaski	do	1915	8340	do	Dolomite		2.80	.3	5.2				17.0	6				
Do	do	do	1915	8341	do	Argillaceous limestone.		2.65	1.1	5.7				18.3	9				
Do	do	do	1915	8342	do	Dolomite		2.80	.5	4.4				17.0	8				
Do	do	do	1915	8343	do	Siliceous dolomite		2.70	.7	13.3				17.0	5				
Do	do	Prosp	1915	8405	do	Dolomite		2.85	.3	4.0				17.0	10				
Rappahannock	Flint Hill	do	1914	7452	do	Hornblende-epidote schist.		3.00	.5	4.5				15.8	9				
Do	Panorama	do	1931	34187	do	Gabbro		2.74	.1	2.9				18.0	12				
Do	do	do	1934	40657	do	Quartzite		3.00	.2	2.0					34				
Do	do	do	1934	40658	do	do		2.62	.6	3.3					10				
Do	Scrabble	do	1921	19360	do	Feldspathic sandstone.		2.63	.4	4.0				17.7	12				
Do	do	do	1921	19362	do	Gneiss		2.64	.5	4.9				18.0	8				
Do	Woodville	do	1919	14461	do	Granite [6]		2.61	.4	3.8				18.3	12				
Do	do	do	1921	19363	do	Biotite gneiss		2.74	.2	5.0				17.0	10				
Do	do	do	1921	19364	do	do		2.74	.4	5.3				17.7	8				
Do	do	Local	1921	19542	do	Biotite-sericite schist.		2.78	.2	7.2				10.0	7				
Roanoke	Airport	do	1935	42203	do	Granite				2.7	19.2	A						S	1½–1
Do	do	Prosp	1937	44409	do	Granite gneiss				7.3	31.7	A						S	1½–1
Do	Bent Mountain	do	1937	44407	do	Gneissoid granite				8.1	34.1	A			5			S	1½–1
Do	do	do	1937	44408	do	Granite				3.8	26.9	A			10			S	1½–1
Do	Bonsack	do	1921	19556	do	Dolomite		2.84	.2	4.2				16.3	10				
Do	Boone Mill	do	1937	44398	do	Sandstone				4.9	26.2	A			14			S	1½–1
Do	do	do	1937	44399	do	do				2.9	25.3	A			9			S	1½–1
Do	do	do	1937	44400	do	Granite gneiss				4.8	22.7	A			6			S	1½–1
Do	do	do	1937	44401	do	Sericite gneiss				4.1	17.2	A			12			S	1½–1
Do	do	do	1937	44402	do	Granite				4.5	25.9	A			8			S	1½–1
Do	do	do	1937	44403	do	do				3.2	22.0	A			10			S	1½–1
Do	do	do	1937	44404	do	Sericite schist				5.0	19.4	A			10			S	1½–1

Do	Garden City	Comm	1946	70915	do	Dolomite					21.1	A						1.3	1½–⅜
Do	do	do	1946	70916	do	do					24.1	A						13.7	1½–⅜
Do	Glenvar	Local	1919	14988	do	do		2.83	.4	5.1				16.0	7				
Do	do	Prosp	1921	20580	do	do		2.81	.4	7.0				15.7	4				
Do	do	do	1922	21147	do	do		2.80	.2	4.6				16.0	11				
Do	do	do	1922	21204	do	do		2.83	.2	3.9				15.7	8				
Do	do	Local	1922	21779	do	Limestone		2.77	.7	12.3				14.7	5				
Do	do	do	1922	22426	do	Dolomite		2.82	.2	5.3				16.3	6				
Do	do	do	1922	22678	do	do		2.83	.3	5.0				17.0	7				
Do	Hollins	Comm	1941	54525	do	Limestone					15.8	A							
Do	do	do	1941	54526	do	do					16.1	A							
Do	do	do	1941	54527	do	do					17.7	B							
Do	Roanoke	Local	1906	1623	do	Dolomite		2.80	.3	3.4				16.3	13				
Do	do	Prosp	1906	1624	do	do		2.85	.3	3.4				16.6	14				
Do	do	Local	1906	1630	do	do		2.90	.3	6.1				17.6	7				
Do	do	Prosp	1911	5461	do	Dolomitic limestone.		2.85	.1	3.9				18.3	11				
Do	do	Comm	1921	19961	do	Dolomite		2.80	.2	3.0				15.3	11				
Do	do	Prosp	1937	44392	do	Sandstone				9.5	37.0	A			9			S	1½–1
Do	do	do	1937	44393	do	Dolomite				2.7	21.5	A			10			S	1½–1
Do	do	do	1937	44394	do	do				3.2	15.5	A			21			S	1½–1
Do	do	do	1937	44395	do	do				3.2	18.8	A			10			S	1½–1
Do	do	do	1937	44396	do	Argillaceous sandstone.				3.4	22.7	A			10			S	1½–1
Do	do	do	1937	44397	do	Gabbro				3.2	13.4	A			16			S	1½–1
Do	do	do	1937	44405	do	Diabase [6]				3.2	16.1	A			14			S	1½–1
Do	do	do	1937	44406	do	Sericite gneiss				6.3	25.4	A			11			S	1½–1
Do	do	Comm	1937	44591	do	Dolomitic limestone.				4.2					12				
Do	do	do	1938	44881	do	Dolomite					15.9	A							
Do	do	do	1939	46677	do	do					16.2	A							
Do	do	do	1940	51180	do	Argillaceous dolomite.					15.2	B							
Do	do	do	1940	51186	do	do					14.4	B							
Do	do	do	1940	51188	do	Dolomite					16.6	A							
Do	do	do	1943	61505	do	Aplitic granite		2.61	.8		24.7	B							
Do	do	do	1946	70585	do	Dolomitic limestone.					24.0	A							
Do	do	do	1946	72587	do	do		2.83	.4		16.8	A			8			2.7	1½–#4
Do	do	do	1949	76912	do	do					25.7	A							
Do	do	do	1949	76913	do	do					24.9	A							
Do	do	do	1949	76914	do	do					23.1	A							
Do	Starkey	Prosp	1909	3450	do	Quartzite		2.80	.7	4.8				19.4	14				
Rockbridge	Buena Vista	Local	1917	11549	do	Limestone		2.82	.4	2.7				18.3	18				
Do	do	do	1917	11550	do	Argillaceous limestone.		2.78	.1	2.4				17.0	11				
Do	do	Prosp	1940	49125	do	Feldspathic sandstone.					88.6	A							
Do	do	do	1940	49130	do	Quartzite					26.4	A							
Do	do	do	1940	49139	do	do					32.8	A							
Do	Clarks Gap	do	1940	49132	do	Ferruginous sandstone.					50.9	A							
Do	do	do	1940	49212	do	Granite					45.3	A							
Do	do	do	1940	49213	do	Sandstone					38.7	A							
Do	Fairfield	do	1920	16223	do	Siliceous limestone.		2.72	.2	5.0				13.3	17				
Do	Glasgow	Comm	1918	13041	do	Limestone		2.73	.1	4.7				16.3	9				
Do	do	do	1918	13042	do	do		2.70	.1	6.4				12.7	17				
Do	do	Prosp	1918	13043	do	Quartzite		2.65	.1	3.0									
Do	do	do	1939	48361	do	Hornblende granite.					23.2	A						S	1½–1
Do	do	do	1939	48362	do	Pyroxene granite					20.2	A						S	1½–1
Do	do	do	1939	48363	do	do					29.0	A						S	1½–1
Do	do	do	1939	48364	do	Chlorite schist					21.8	A						S	1½–1
Do	do	do	1939	48371	do	Pyroxene granite					22.4	A							
Do	do	do	1939	48373	do	do					26.0	A							
Do	do	Comm	1940	49142	do	Limestone					22.3	A							
Do	do	do	1940	49822	do	Quartzite					20.1	A							
Do	do	do	1940	49942	do	do					13.6	A							
Do	do	do	1940	49943	do	Argillaceous limestone.					15.3	A							
Do	do	do	1940	51969	do	Feldspathic quartzite.					23.4	A							
Do	do	do	1941	55348	do	Quartzite					15.8	A							
Do	do	do	1947	73754	do	do					28.3	B							
Do	do	do	1950	80880	do	Dolomitic limestone.					23.0	A							
Do	Greenlee	do	1912	5920	do	Dolomitic marble		2.85	.2	4.4			36,900	16.8	13				
Do	Irish Gap	Prosp	1940	49133	do	Syenite [6]					14.4	A							
Do	do	do	1940	49134	do	do.[6]					20.6	A							

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Rockbridge	Lexington	Local	1910	4848	Stone	Limestone		2.70	0.1	6.5				15.0	7				
Do	do	do	1910	4849	do	do		2.70	.1	4.7									
Do	do	do	1910	4850	do	do		2.70	.1	4.7				14.5	5				
Do	do	do	1910	4858	do	Argillaceous limestone.		2.70	.1	4.7				16.3	9				
Do	do	do	1910	4859	do	do		2.70	.1	4.2				17.3	16				
Do	do	Comm	1940	49137	do	do					21.6	A							
Do	do	do	1940	49138	do	do					20.3	A							
Do	do	do	1947	73949	do	Limestone		2.73	.1		21.3	A						0.3	1½–#4
Do	do	do	1947	73950	do	do					20.2	A						.4	1½–#4
Do	do	do	1948	75469	do	do												1.0	1–#4
Do	do	do	1948	75857	do	do		2.71	.3		21.6	A						1.2	1½–#4
Do	Natural Bridge	Prosp	1921	17929	do	Crystalline limestone.		2.76	.1	5.2				12.7	5				
Do	do	do	1921	17935	do	Argillaceous limestone.		2.80	.1	4.4				18.0	11				
Do	Natural Bridge Station.	do	1940	49172	do	Pyroxene gneiss					20.2	A							
Do	do	do	1940	49211	do	Syenite					19.9	A							
Do	do	Local	1940	49373	do	do					27.4	A							
Do	Timber Ridge	Prosp	1919	14017	do	Siliceous dolomite		2.92	.2	2.8				17.9	12				
Do	do	do	1919	15112	do	Siliceous limestone.		2.84	.1	3.8				18.3	21				
Do	do	do	1919	15113	do	do		2.81	.1	3.0				17.7	14				
Do	Whites Gap	do	1940	49129	do	Feldspathic quartzite.					55.5	A							
Rockingham	Bluffs	do	1910	4600	do	Limestone		2.70	.2	4.1				15.8	7				
Do	do	do	1911	5382	do	do		2.70	.1	3.5			21,450	15.5	11				
Do	do	do	1911	5385	do	do		2.75	.5	3.8			40,850	16.4	13				
Do	Brown Gap	do	1936	43102	do	Sandstone				2.8	32.0	A							
Do	do	do	1936	43103	do	Quartzite				2.3	21.2	A							
Do	do	do	1936	43105	do	Sandstone				2.7	24.0	A							
Do	do	do	1936	43106	do	do				3.9	23.8	A							
Do	do	do	1936	43107	do	Quartzite				2.4	23.2	A							
Do	do	do	1936	43109	do	do				2.7	25.0	A							
Do	Elkton	Comm	1936	42894	do	Dolomite				1.6	16.6	A							
Do	do	do	1936	42895	do	Dolomitic limestone.				4.7	30.1	A							
Do	do	do	1936	42896	do	Siliceous limestone				3.0	14.9	A							
Do	do	do	1936	42897	do	do				2.5	14.7	A							
Do	do	do	1937	44261	do	Argillaceous limestone.				6.0	27.1	A			3				
Do	do	do	1937	44376	do	Dolomitic limestone.				3.3	28.9	A							
Do	do	do	1937	44413	do	Limestone				3.6	24.6	A			12				
Do	do	do	1938	44921	do	Dolomite					17.0	A							
Do	do	do	1938	44922	do	do					18.3	A							
Do	do	do	1938	44989	do	Siliceous limestone		2.82	.3	.7	16.1	A							
Do	do	do	1939	46538	do	Dolomite					17.7	C							
Do	do	do	1947	73611	do	Limestone					27.9	A							
Do	do	do	1947	73756	do	do					13.9	B							
Do	do	do	1947	74009	do	do					19.0	A						1.5	1–#4
Do	do	do	1947	74275	do	do					17.1	C							
Do	do	do	1948	75375	do	do					20.0	A							
Do	do	do	1949	78325	do	do		2.76	.2		21.5	A							
Do	do	do	1950	82740	do	do					21.8	A						4.8	2–#4
Do	do	do	1950	82741	do	do												4.3	¾–#4
Do	do	do	1950	82742	do	do												5.7	½–#4
Do	Harrisonburg	Prosp	1911	5700	do	Cherty sandstone		2.50	1.3	3.4				19.2	16				
Do	do	Comm	1920	16513	do	Argillaceous limestone.		2.71	.1	5.7					5				
Do	do	do	1924	24522	do	Limestone		2.81	.0	4.6			30,400	17.0	6				
Do	do	Local	1938	44973	do	Dolomitic limestone.					24.7	A							
Do	Mount Crawford.	Prosp	1914	8140	do	Dolomite		2.80	.2	2.5				17.8	24				

Do	Port Republic	do	1936	43104	do	Quartzite				4.6	29.4	A							
Do	do	do	1936	43120	do	Sandstone				3.2	36.5	A							
Do	do	Comm	1938	44852	Gravel	SQ	1½				37.1	A							
Do	do	do	1938	44859	do	SQ	1½				36.6	A							
Do	do	do	1938	44880	do	SQ					37.5	A							
Do	do	do	1938	44974	do	SQ					41.7	B							
Russell	Blackford	Local	1909	3911	Stone	Dolomite		2.85	.2	5.0				16.3	4				
Do	Castlewood	Prosp	1909	3259	do	do		2.80	.2	2.4				16.7	13				
Do	do	do	1909	3260	do	Limestone		2.75	.1	3.2				14.0	5				
Do	do	Local	1917	11719	do	do		2.75	.1	3.9				17.3	13				
Do	Hansonville	do	1918	12788	do	Argillaceous limestone.		2.72	1.2	3.6				16.7	14				
Do	do	do	1918	12840	do	Limestone		2.73	.1	5.8				15.3	8				
Do	Honaker	do	1910	4669	do	Argillaceous sandstone.		2.85	.1	4.0				15.7	8				
Do	do	do	1910	4670	do	Limestone		2.76	.1	4.2				15.3					
Do	Saint Paul	Prosp	1911	5375	do	do		2.70	.2	3.7			22,400	17.1	11				
Scott	Gate City	Local	1916	10930	do	Argillaceous limestone.		2.69	.2	4.1				16.0	13				
Do	Pattonsville	Prosp	1921	20125	do	Limestone		2.75	.1	3.8				14.0	6				
Shenandoah	Capon Road	Comm	1941	53519A	do	do					35.6	A							
Do	do	do	1941	53519B	do	do					34.1	B							
Do	do	do	1942	56369	do	do					36.3	B							
Do	Detrick	Prosp	1947	72978	do	Argillaceous shale		2.71	.8		23.4	A						[13] 4.4	¼–¼
Do	do	do	1947	72979	do	do		2.70	1.3		25.9	A						[13] 8.0	¼–¼
Do	do	do	1947	72980	do	do		2.69	1.0		18.7	A						[13] 6.4	¼–¼
Do	New Market	do	1922	21234	do	Sandstone		2.55	.3	4.4				19.0	8				
Do	do	do	1922	21235	do	do		2.67	.5	3.1				18.3	10				
Do	Strasburg	Comm	1936	42924	do	Dolomite				3.5					14			S	1½–1
Do	Strasburg Junction.	Local	1921	20889	do	Limestone		2.75	.2	4.6				15.7	4				
Do	Waterlick	Prosp	1930	33258	do	Slate				8.7									
Do	Woodstock	do	1912	5820	do	Calcareous sandstone.		2.70	.4	2.7				15.3	15				
Smyth	Atkins	do	1920	16011	do	Dolomite		2.78	.5	6.7				18.0	7				
Do	do	Local	1920	16110	do	Argillaceous limestone.		2.78	.2	2.8				16.3	7				
Do	do	do	1920	16262	do	Siliceous dolomite		2.79	.4	4.7					10				
Do	do	Prosp	1920	16507	do	do		2.67	5.4	5.6					9				
Do	do	do	1920	16509	do	Dolomite		2.80	.4	5.8					7				
Do	do	do	1920	16589	do	Limestone		2.71	.3	5.4				13.7	5				
Do	do	do	1921	19083	do	Ferruginous sandstone.		2.60	.9	5.2				17.7	12				
Do	do	Local	1921	19084	do	Argillaceous dolomite.		2.83	.3	6.1				15.7	5				
Do	Groseclose	Prosp	1920	16508	do	do		2.78	.6	9.0					5				
Do	Marion	do	1913	7064	do	Limestone		2.70	.1	5.1				16.0	8				
Do	do	Local	1920	16289	do	Quartzite		2.61	.8	4.5									
Do	do	Comm	1941	52963	do	Argillaceous dolomite.					15.8	A							
Do	do	do	1941	53240	do	do					16.4	A							
Do	do	do	1941	53442	do	Argillaceous limestone.					22.9	B							
Do	do	do	1941	53443	do	do					22.8	B							
Do	North Holston	Prosp	1912	5832	do	Carbonaceous limestone.		2.70	.1	4.0				16.3	15				
Do	do	do	1912	5833	do	Feldspathic sandstone.		2.70	.4	3.1				17.3	13				
Do	do	do	1912	5885	do	Sandstone		2.60	.5	4.3				17.5	10				
Do	do	do	1912	6240	do	do								1.0	4				
Do	do	do	1913	6942	do	Argillaceous limestone.		2.80	.5	4.0				16.0	16				
Do	Sheffy	do	1920	16287	do	Dolomite		2.76	.5	7.0					5				
Spotsylvania	Chancellor	do	1933	40015	do	Granite [6]		2.65	.5	6.0				18.7	5				
Do	do	do	1933	40023	do	do.[1]		2.56	1.0	8.3				18.7	4				
Do	do	do	1933	40024	do	do		2.67	.5	3.1				19.3	8				
Do	do	do	1934	40283	do	Quartzite schist		2.67	.3	3.7									
Do	do	do	1934	40284	do	do		2.70	.4	3.5					12				
Do	do	do	1934	40285	do	do		2.70	.4	3.4					8				
Do	do	Local	1935	42082	do	Mica schist		2.72	.2	3.4					9				
Do	do	do	1935	42083	do	do		2.73	.3	2.7					9				
Do	Fredericksburg	Prosp	1903	750	do	Oolitic limestone		2.80	.8	5.5									
Do	do	do	1933	40014	do	Muscovite granite		2.60	.7	4.9				18.0	8				
Do	do	do	1933	40029	do	Quartzite schist		2.71	.3	3.5				18.7	8				
Do	Massaponax	Comm	1926	28277	Gravel	Quartz	2			13.6		A							
Do	do	do	1926	28367	do	do	2½			16.0		A							
Do	do	do	1926	28368	do	do	2			14.2		A							
Do	do	do	1926	28446	do	do	2½			11.6		A							
Do	do	do	1926	28552	do	QGQzS	2			11.4		A							
Do	do	do	1927	29675	do	Quartz		2.61	.4	13.4		A							

[1] Weathered. [6] Altered. [13] 10 cycles, freezing and thawing.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Spotsylvania	Massaponax	Comm	1929	31626	Gravel	Q(DG)	2½	2.66		14.3		A							
Do	do	do	1930	32429	do	Quartz				12.5		A							
Do	do	do	1930	33123	do	QGSc		2.63	0.6	16.7		A							
Do	do	do	1932	34700	do	QGSc				13.7	45.1	A							
Do	do	do	1934	40652	do	QSGDi	1½			9.8		B							
Do	do	do	1935	42088	do	Quartz				8.3		B							
Do	do	do	1935	42339	do	do				11.7		C							
Do	do	do	1942	56234	do	QQzGSc	2	2.63	.8		39.8	A							
Do	do	do	1943	61506	do	QQzGSc		2.63	.8		33.0	C							
Do	do	do	1945	68118	do	QQzG					32.1	B							
Do	Parker	Prosp	1934	40780	Stone	Sericite schist		2.63	.8	7.4					5			Q	1½–1
Do	do	do	1934	40781	do	do		2.58	1.5	10.0					5			Q	1½–1
Do	do	do	1934	40782	do	do		2.66	.5	5.2					6			Q	1½–1
Do	do	Local	1935	42129	do	Schist		2.70	.3	3.5								S	1½–1
Do	do	do	1935	42130	do	do		2.69	.4	4.8								S	1½–1
Do	do	do	1935	42131	do	do		2.70	.4	4.1								S	1½–1
Do	do	do	1935	42132	do	do		2.68	.5	5.3								S	1½–1
Do	do	do	1935	42133	do	do		2.70	.4	4.5								Q	1½–1
Do	do	do	1935	42134	do	do		2.68	.5	5.3								S	1½–1
Do	do	do	1935	42135	do	do		2.70	.3	3.4								S	1½–1
Do	do	do	1935	42157	do	Sericite schist		2.70	.3	3.5					12			S	1½–1
Do	do	do	1935	42158	do	do		2.68	.3	5.9					13			S	1½–1
Do	do	do	1935	42159	do	do		2.70	.3	4.1					12			S	1½–1
Do	do	do	1935	42160	do	do		2.70	.3	4.4					10			S	1½–1
Do	Spotsylvania	Prosp	1909	3794	do	Gneiss		2.65	.1	12.9				18.2	4				
Do	do	do	1909	3795	do	do		2.65	.2	3.9				18.3	10				
Do	do	do	1922	22272	do	Gneissoid granite		2.73	.3	6.0				17.0	5				
Do	do	do	1933	40012	do	do		2.65	.4	5.0				18.0	6				
Do	do	do	1933	40013	do	Granite [1]		2.58	1.1	5.2				18.0	4				
Do	do	do	1933	40027	do	Gneissoid granite		2.62	.8	12.2				18.7	4				
Do	do	do	1933	40028	do	do		2.65	.5	2.8				18.0	7				
Do	do	do	1934	40063	do	Epidosite		2.91	.2	3.0				18.0	12				
Do	do	do	1934	40064	do	Amphibolite		3.10	.1	2.1				19.0	30				
Do	do	do	1934	40065	do	Micaceous quartzite.		2.80	.2	3.2				18.7	20				
Do	do	do	1934	40578	do	Sericite schist		2.65	.8	5.0					4				
Stafford	Falmouth	Local	1935	42323	do	Granite				4.0									
Do	do	do	1935	42324	do	do				4.4									
Do	Stafford	do	1936	43032	Gravel	QSShGC	1½			8.8		B						5.0	1½–#4
Do	Widewater	Comm	1929	31632	Stone	Sandstone		1.98	7.6	21.6			6,740	15.3	4				
Do	do	do	1932	34631	do	Feldspathic sandstone.		1.96	8.5	19.2									
Tazewell	Burkes Garden	Prosp	1913	7217	do	Dolomitic sandstone.		2.80	.4	3.4			21,500	15.6	8				
Do	Pounding Mill	Comm	1937	44257	do	Limestone				3.6	23.9	A			5				
Do	Tazewell	Prosp	1912	5854	do	Ferruginous sandstone.		2.65	.6	2.7				18.7	19				
Warren	Compton Gap	do	1934	40609	do	Diabase		3.00	.2	1.7					22				
Do	do	do	1934	40631	do	Diorite		2.88	.4	3.0					8				
Do	do	do	1934	40681	do	Sandstone		2.99	.3	1.8					27				
Do	do	do	1934	40682	do	Granite		2.82	.2	3.0					13				
Do	do	do	1935	42098	do	do		2.66	.3	3.1					13			S	1½–1
Do	do	do	1935	42099	do	do.[1]		2.62	.9	5.3					6				
Do	do	do	1935	42100	do	do.[1]		2.56	1.5	6.9					4			Q	1½–1
Do	Front Royal	Comm	1948	75088	do	Limestone					21.8	A							
Do	Riverton	do	1931	34554	do	Dolomitic limestone.				3.4									
Do	do	do	1931	34563	do	Limestone				3.0									
Do	do	do	1931	34564	do	do				3.1									
Do	do	do	1936	42922	do	Dolomite				2.6					12			S	1½–1
Do	do	do	1938	44958	do	Dolomitic limestone.					22.8	A							
Do	do	do	1940	48788	do	Limestone					20.1	A							
Do	do	do	1941	54093	do	do		2.81	.2		18.6	B							
Do	do	do	1941	54660	do	do					16.7	B							
Do	do	do	1941	55145	do	do					17.6	B							
Do	do	do	1945	69920	do	do		2.76	.4		21.0	A						2.8	2–#4

Do	do	do	1947	73386	do	do		2.82	.4		17.5	A						2.3	1½-#4
Do	do	do	1947	73755	do	do					18.5	B							
Do	do	do	1947	74177	do	do		2.77	.5		22.3	A						4.7	1½-#4
Do	do	do	1948	74709	do	do		2.81	.3		19.1	A						.2	2½-¾
Do	do	do	1948	74710	do	do		2.79	.4									.9	1-#4
Do	do	do	1948	74846	do	do					28.0	A							
Do	do	do	1949	77276	do	do		2.75	.4		23.8	A						.2	2-#4
Do	do	do	1950	80302A	do	do					28.5	G							
Do	do	do	1950	80302B	do	do					23.4	A							
Do	do	do	1950	80879	do	do					20.9	B							
Do	do	do	1950	81440	do	do					24.0	C							
Do	do	do	1950	81563	do	do					22.9	A							
Do	do	do	1950	81722	do	do		2.78	.4		21.1	A						1.4	2-#4
Do	Waterlick	Prosp	1930	33189	do	Siliceous limestone.		2.69	.5	4.1				16.0	9				
Do	do	Local	1930	33204	do	Slate		2.61	1.4	11.7									
Do	do	do	1930	33205	do	do		2.71	.7	7.4									
Do	do	Prosp	1947	72981	do	Argillite		2.65	1.7		24.3	A						[13] 60.8	½-¼
Washington.	Abingdon	do	1920	17853	do	Argillaceous limestone.		2.74	.1	5.0				17.3	8				
Do	Alvarado	do	1947	74462	do	Dolomitic limestone.		2.84	.3		18.3	A						.3	1½-#4
Do	do	do	1947	74463	do	Limestone		2.70	.3		21.9	A						1.5	1½-#4
Do	do	do	1947	74464	do	do		2.72	.2		21.9	A						3.2	1½-#4
Do	Bristol	do	1912	6250	do	Cherty dolomite		2.80	.2	5.1				17.2	3				
Do	do	do	1912	6251	do	Dolomite		2.85	.2	5.3				17.0	5				
Do	do	do	1912	6272	do	Argillaceous limestone.		2.80	.3	3.7				17.4	3				
Do	do	do	1912	6273	do	Dolomite		2.85	.2	3.6				15.0	9				
Do	do	do	1912	6274	do	Limestone		2.75	.2	4.4				16.6	8				
Do	do	do	1913	6524	do	Siliceous limestone.		2.70	.4	4.9				16.3	9				
Do	do	do	1913	6525	do	Dolomite		2.85	.3	5.2				15.2	7				
Do	do	do	1913	6571	do	Limestone		2.70	.9	4.6				14.8	8				
Do	Damascus	do	1912	5821	do	Ferruginous sandstone.		2.65	.4	3.6				18.8	18				
Do	do	do	1912	5822	do	Travertine		2.70	.0	5.9				12.0	4				
Do	do	do	1912	5823	do	Dolomite		2.75	.7	4.1				16.3	11				
Do	do	do	1912	5824	do	do		2.85	.2	6.4				17.3	4				
Do	Glade Spring	Local	1923	23125	do	Argillaceous limestone.		2.68	.2	5.3				16.7	6				
Do	do	do	1923	23442	do	Siliceous limestone.		2.72	.1	4.1				15.7	8				
Do	Greendale	Prosp	1921	20013	do	Limestone		2.67	.4	5.4				9.7	8				
Do	Holston	do	1920	16021	do	Argillaceous limestone.		2.70	.1	4.0				16.9	10				
Do	do	do	1920	16075	do	Siliceous limestone.		2.70	.4	5.7				17.3	8				
Do	do	do	1920	16178	do	Argillaceous limestone.		2.71	.3	6.4				10.0	6				
Do	Meadowview	do	1906	1728	do	Limestone		2.75	.3	3.5				16.2	9				
Do	do	do	1906	1729	do	Dolomitic limestone.		2.80	.3	3.6				16.3	14				
Do	do	do	1907	1923	do	Chert		2.80	.3	5.3				15.3	11				
Do	do	do	1914	7725	do	Argillaceous limestone.		2.80	.1	4.0				17.8	8				
Do	do	do	1914	7726	do	do		2.45	.2	3.4				17.5	14				
Do	Wallace	do	1914	7537	do	Limestone		2.80	.1	2.9				15.3	5				
Do	do	do	1914	7538	do	Dolomitic limestone.		2.80	.1	2.8				18.6	11				
Do	do	do	1914	8227	do	Argillaceous limestone.		2.75	.4	2.9				18.3	16				
Wise	Big Stone Gap	do	1911	5120	do	Limestone		2.64	.8	4.8				15.8	6				
Do	do	Local	1912	6048	do	do		2.70	.4	4.0				10.5	7				
Do	do	do	1912	6049	do	do		2.70	.2	3.5				15.7	7				
Do	do	do	1912	6050	do	Dolomite		2.75	.7	3.8				15.7	12				
Do	do	do	1915	8344	do	Siliceous limestone.		2.65	.3	3.6				18.3	13				
Do	do	Prosp	1915	8345	do	Feldspathic sandstone.		2.60	1.0	9.3				13.0	6				
Do	do	do	1915	8398	Slag	Blast furnace		2.60	.9	11.0				15.0	6				
Do	do	do	1915	8399	Stone	Sandstone		2.60	.4	3.9				18.8	7				
Do	do	do	1915	8578	do	Feldspathic sandstone.		2.60	1.1	5.1				12.7	7				
Do	do	Local	1922	21080	do	Limestone		2.71	1.2	2.9				15.8	14				
Do	Coeburn	Prosp	1921	19085	do	Feldspathic sandstone.		2.62	1.0	4.2				14.3	10				
Do	Esserville	do	1921	18923	do	Sandstone		2.48	1.3	5.3				16.0	6				
Do	do	do	1921	18924	do	do		2.47	1.6	5.5				18.0	6				
Do	Norton	Local	1913	6714	do	Limestone		2.70	.2	4.2				14.8	9				

[1] Weathered. [13] 10 cycles, freezing and thawing.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Wise	Norton	Local	1913	6715	Stone	Limestone		2.70	0.2					15.9	9				
Do	do	do	1922	21045	do	Sandstone		2.50	1.6	5.3				16.3	11				
Do	do	do	1922	21046	do	do		2.49	1.2	6.7				18.0	9				
Do	Saint Paul	do	1920	16421	do	Argillaceous limestone.		2.73	.1	4.9					5				
Do	do	do	1921	19086	do	Feldspathic sandstone.		2.57	1.4	4.6				14.7	8				
Do	do	Comm	1941	53237	do	Argillaceous limestone.					19.0	A							
Do	do	do	1941	53251	do	do					20.4	B							
Do	do	do	1941	53252	do	do					16.4	A							
Do	do	do	1941	53301	do	Dolomitic limestone.					18.3	A							
Do	do	do	1941	53581	do	Dolomite					21.9	A							
Do	do	do	1946	71748	do	Limestone					24.7	A						5.5	1½–#4
Do	Wise	Prosp	1916	10780	do	Sandstone		2.54	1.3	4.5				18.0	7				
Wythe	Ivanhoe	Local	1911	5745	do	Dolomitic marble		2.85	.1	5.3				15.8	16				
Do	Max Meadows	Prosp	1922	22686	do	Argillaceous limestone.		2.64	.8	4.5				18.3	12				
Do	Rural Retreat	do	1920	16111	do	do		2.72	.1	4.7				16.7	7				
Do	Speedwell	do	1913	6910	do	Dolomite		2.85	.2	5.5				16.1	9				
Do	Wytheville	do	1922	21136	do	do		2.81	.1	2.6				17.3	15				

WASHINGTON

Adams	Lind	Local	1910	4539	Stone	Basalt		2.95	0.1	2.2				18.3	14				
Asotin	Asotin	Comm	1910	4561	do	do		2.95	.1	2.3				18.0	20				
Do	Rogersburg	Prosp	1910	4562	do	Dolomitic marble		2.70	.1	7.5									
Benton	Kiona	do	1910	4768	do	Basalt		2.80	.2	2.1				18.8	20				
Do	Prosser	Local	1910	4776	do	do		2.85	.1	2.2				18.4	11				
Chelan	Cashmere	Prosp	1910	4489	do	Feldspathic sandstone.		2.60	.4	6.4									
Do	Columbia River	do	1910	4558	do	Basalt		2.85	.1					19.0	20				
Do	Leavenworth	do	1910	4580	do	Granodiorite		2.75	.2	7.0				17.0	4				
Do	Wenatchee	Local	1910	4524	do	Biotite gneiss		2.70	.1	5.2									
Clallam	Clallam Bay	Prosp	1942	59161	Gravel	BR(QQz)	1	2.62	.4		17.3	B							
Clark	Fisher	Comm	1908	2918	Stone	Olivine basalt		2.80	.8	2.5				17.8	15				
Do	do	do	1908	2919	do	do		2.70	1.1	2.9				17.8	13				
Do	do	do	1910	4566	do	Basalt		2.85	.2	2.9				18.0	25				
Do	Vancouver	Prosp	1910	4451	do	do		2.80	.4	3.0				19.3	19				
Do	Yacolt	do	1910	4454	do	do.[6]		2.80	.2	2.5				16.8	15				
Columbia	Dayton	do	1910	4488	do	do		2.85	.2	2.8				18.2	16				
Do	do	do	1910	4560	do	do		2.85	.3	2.3				17.7	21				
Cowlitz	Carrolls	do	1910	4468	do	do		2.85	.1	3.3				17.3	6				
Do	Castle Rock	do	1910	4432	do	do		2.85	.2	5.2				17.4	11				
Do	Kalama	do	1910	4442	do	do		2.80	.2	3.2				16.8	15				
Do	do	Local	1910	4510	do	do		2.80	.1	3.3				16.7	10				
Do	do	Prosp	1910	4520	do	do		2.80	.1	3.3				15.4	10				
Do	Kelso	Comm	1908	2850	do	Augite andesite		2.90	.1	3.2				18.8	21				
Do	do	Prosp	1910	4452	do	Basalt [6]		2.80	.5	3.9				14.3	7				
Do	do	do	1910	4564	do	do		2.90	.1	3.8				18.0	10				
Do	Ladu	Comm	1910	4436	do	do		3.00	.2	2.4				18.8	13				
Do	do	do	1910	4559	do	do		2.95	.1	1.9				18.0	22				
Do	Longview	do	1941	55132	do	do					14.2	B							
Do	do	do	1941	55330	do	do		2.93	.1				60,430		18				
Do	do	do	1942	56860	do	do		2.94	.1				55,820		20				
Do	do	do	1942	56861	do	do					13.9	B							
Do	do	do	1943	61964	do	do		2.87	.4		16.8	B							
Do	Stella	Prosp	1910	4444	do	do		2.70	1.0	2.5				18.5	14				
Do	do	Comm	1910	4496	do	do		2.90	.2					18.3	22				
Do	do	Prosp	1910	4549	do	do		2.90	.1	2.8				17.2	16				

Douglas	Rock Island	Comm	1944	66575	Gravel	GSyRB	1	2.66	.7								1.8	1–#4
Do	do	do	1944	66576	do	GFeR	1	2.69	.6		14.6	B						
Ferry	Curlew	Prosp	1910	4433	Stone	Limestone		2.75	.2	6.6				17.0	5			
Do	do	do	1910	4481	do	Andesite [6]		2.65	.4	3.1				17.9	18			
Do	do	do	1910	4506	do	Granite		2.70	.1	4.4				18.1	8			
Do	do	do	1910	4518	do	Limestone		2.85	.2	6.3								
Do	do	do	1910	4537	do	Augite diorite		2.80	.1	3.6				17.5	10			
Do	Danville	do	1910	4429	do	Andesite [6]		2.65	1.0	2.9				18.5	17			
Do	do	do	1910	4516	do	Serpentine		2.70	.2	6.7								
Do	Keller	do	1910	4459	do	Andesite [6]		2.70	.1	3.0				18.3	13			
Do	do	do	1910	4779	do	Granodiorite		2.70	.2	3.9				17.9	12			
Do	Laurier	do	1910	4542	do	Granite		2.60	.2	5.3				18.5	4			
Do	Republic	do	1910	4509	do	Crystalline limestone.		2.70	.1	8.9				14.3	4			
Do	do	do	1910	4548	do	Andesite		2.65	.2	6.5								
Do	do	do	1910	4565	do	Vitreous basalt		2.55	.1	5.1								
Franklin	Kahlotus	do	1910	4553	do	Basalt		2.85	.1	2.9				17.6	16			
Do	do	do	1948	74472	do	do		2.80	2.1		18.7	A	44,400		16		2.8	1½–#4
Grant	Adrian	do	1910	4473	do	do		2.90	.2	2.7				18.0	13			
Do	Bacon	do	1910	4480	do	do		2.80	.3	2.7				18.1	17			
Do	Coulee City	do	1910	4531	do	do		2.95	.2	2.1				18.3	21			
Do	do	do	1910	4550	do	do		2.85	.1	2.1				18.5	22			
Do	Ephrata	do	1910	4555	do	do		2.95	.1	2.5								
Grays Harbor.	Hoquiam	Local	1910	4769	do	do		2.85	.2	2.2				18.2	27			
Do	do	Comm	1942	56878	Gravel	PDi					14.7	B						
Island	Whibley Island	Prosp	1907	2145	Stone	Sandstone		2.75	1.5					9.5	7			
Jefferson	Brinnon	do	1910	4556	do	Basalt		2.90	.1	2.9								
Do	Duckabush	do	1910	4466	do	do.[6]		2.90	.2	4.5				12.0	6			
Do	Port Ludlow	do	1910	4569	do	do.[6]		2.85	.2	3.8								
Do	Quilcene	do	1910	4498	do	do.[6]		2.90	.1	3.4				18.0	21			
King	Bellevue	Comm	1942	60091	Gravel	R(BQ)	1	2.68	.8		10.9	B						
Do	Earlington	Prosp	1910	4435	Stone	Andesite		2.50	2.0	4.5				13.8	12			
Do	Enumclaw	do	1913	6581	do	Basalt [6]		2.70	1.0	5.0				8.8	9			
Do	Franklin	do	1907	2142	do	do.[6]		2.70	1.8	3.7				16.6	9			
Do	Halford	do	1910	4783	do	Granodiorite		2.70	.1	4.1				18.1	9			
Do	North Bend	do	1910	4577	do	Andesite [6]		2.75	.1	2.9				17.5	23			
Do	Scenic	do	1910	4563	do	Granodiorite		2.75	.1					18.8	7			
Do	Sinclair Islet	Comm	1921	20879	do	Basalt								16.7				
Do	do	do	1921	20880	do	do								14.0				
Do	do	do	1921	20881	do	do								14.7				
Do	do	do	1921	20882	do	do.[6]				4.6				13.7				
Do	do	do	1921	20883	do	Andesite [6]								16.7				
Do	do	do	1921	20884	do	Basalt [6]				3.7				16.0				
Do	Seattle	Local	1901	476	do	Quartzite		2.69	.4	2.2								
Do	do	Prosp	1907	2140	do	Basalt		2.55	2.9	3.5				16.4	13			
Do	do	Comm	1907	2207	do	do		2.55	3.4	3.0				15.8	14			
Do	do	do	1910	4773	do	do.[6]		2.65	.2	2.8				16.8	18			
Do	do	do	1942	56887	do	do		2.61	.7		22.3	B	30,680		14			
Do	Veazie	Prosp	1910	4479	do	Diabase		2.75	.3	3.2				17.0	11			
Kitsap	Port Orchard	Comm	1901	477	do	Basalt		2.95	1.0	2.0								
Do	do	Local	1907	2144	do	do		2.90	1.4					15.6	9			
Kittitas	Easton	Prosp	1910	4772	do	Syenite [6]		2.55	.8	1.6								
Do	Kountze	do	1910	4780	do	Basalt		2.85	.2	2.3				18.4	27			
Do	Roza	do	1910	4790	do	do		2.85	.4	1.7				17.7	32			
Do	Thrall	do	1910	4771	do	do		2.80	.4	2.1				18.0	23			
Klickitat	Cliffs	do	1910	4504	do	Olivine basalt		2.95	.1	2.6				18.0	18			
Do	Lyle	do	1910	4434	do	Basalt		2.80	.2	3.4				17.2	13			
Do	do	do	1910	4484	do	do		2.95	.1					17.7	19			
Do	White Salmon	do	1910	4490	do	do		2.80	.2	2.6				18.7	40			
Lewis	Centralia	Comm	1942	60088	Gravel	RBAn(Q)	1	2.67	1.1		10.3	B						
Do	Meskill	do	1907	2143	Stone	Basalt		2.85	1.0	2.8				17.9	14			
Do	do	do	1910	4789	do	do		2.85	.2	2.3				15.3	17			
Lincoln	Almira	Prosp	1910	4430	do	do		2.90	.3	1.9				18.2	20			
Do	do	do	1910	4576	do	do		2.90	.3	2.9				14.2	24			
Do	Davenport	do	1910	4457	do	do		2.90	.2	3.1				18.3	20			
Do	do	do	1910	4528	do	do		2.85	.2	3.2				13.3	8			
Do	Govan	do	1910	4425	do	do		2.90	.4	2.1				18.9	21			
Do	Sprague	do	1910	4443	do	do		2.95	.1	2.2				17.0	20			
Do	Wilbur	do	1910	4538	do	do		2.80	.6	3.4								
Do	do	do	1910	4579	do	do		2.90	.4	1.7				18.3	20			
Mason	Hamahama	do	1910	4505	do	do.[6]		2.85	.4	4.2				13.8	7			
Do	Lilliwaup	do	1910	4483	do	Andesite breccia		2.50	1.7	4.1				13.1	9			
Okanogan	Molson	do	1910	4578	do	Dolomitic marble		2.85	.1					16.3	5			
Do	Nighthawk	do	1910	4527	do	Diorite		2.95	.1	4.0								
Do	Oroville	do	1910	4486	do	Marble		2.80	.3	8.3								
Do	do	do	1910	4502	do	Andesite [6]		2.65	.5	2.5				19.1	18			

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

WASHINGTON—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity[7]	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Pacific	Holcomb	Prosp	1910	4511	Stone	Basalt tuff		2.30	3.4	4.1				5.7	6				
Do	Ilwaco	do	1910	4784	do	Basalt[6]		2.40	.6	4.8				12.3	10				
Do	do	do	1910	4793	do	do		2.55	1.3	5.1				11.0	10				
Do	Raymond	do	1910	4497	do	Micaceous sandstone.		2.55	1.5	4.9				4.4	6				
Do	South Bend	do	1909	4073	do	Andesite		2.60	3.0	5.9				15.4	11				
Do	do	do	1910	4431	do	Basalt		2.90	.3	2.9				16.6	6				
Do	do	do	1910	4525	do	do.[6]		2.85	.2	4.0				13.7	8				
Do	do	Local	1910	4543	do	do		2.80	1.0	3.7				17.5	10				
Do	do	Prosp	1910	4546	do	do		2.85	.4	3.9				13.7	8				
Pend Oreille	Camden	do	1910	4523	do	Granodiorite		2.75	.2	5.0				18.2	8				
Do	Newport	do	1910	4441	do	Granite porphyry		2.65	.5	2.0				18.7	19				
Do	do	do	1910	4463	do	Micaceous sandstone.		2.70	.4	3.0				18.3					
Do	Ruby	do	1910	4461	do	Granite		2.70	.2	3.4				18.8	6				
Do	Scotia	do	1910	4467	do	Hornblende granite.		2.70	.3	6.1				18.0	8				
Do	do	do	1910	4570	do	Granite		2.65	.2	6.2				19.0	7				
Do	Wolfred	do	1910	4482	do	Rhyolite[6]		2.70	.3	2.6				18.7	6				
Pierce	Elbe	do	1910	4439	do	Augite		2.65	.2	4.1				18.4	9				
Do	do	do	1910	4534	do	Andesite		2.65	.1	6.6									
Do	Electron	Local	1913	6619	do	Diorite		2.70	.4	2.3				18.5	20				
Do	La Grande	Prosp	1910	4469	do	Andesite[6]		2.70	.1	2.2				19.2	35				
Do	Ohop	do	1910	4575	do	do.[6]		2.45	.2	3.7				17.7	18				
Do	Steilacoom	Comm	1931	33275	Gravel	GQz		2.71		1.1		A							
Do	do	do	1942	56866	do	RAnSy		2.74	.2				51,400		23				
Do	do	do	1942	56867	do	RAnSy					17.0	B							
Do	do	do	1942	60090	do	RB(GQ)	1	2.67	.8		9.2	B							
Do	do	do	1942	60093	do	RAn(B)	1	2.70	.6		11.4	B							
Do	do	do	1943	61963	do	BRAnG	1	2.65	1.0		11.8	B							
Do	Tacoma	Local	1907	2123	Stone	Diabase[6]		2.75	1.0	4.0				17.7	19				
Do	do	Comm	1942	56872	Gravel	RAnDi					14.3	B							
Do	do	do	1942	60089	do	RBAnQz		2.64	1.3		10.2	B							
Do	do	do	1942	60092	do	RBG		2.65	1.2		11.7	B							
San Juan	Friday Harbor	Prosp	1910	4470	Stone	Limestone		2.75	.1	2.8				18.0	19				
Do	Lopez Island	Comm	1921	20885	do	Volcanic breccia								19.0					
Do	do	do	1921	20886	do	do				3.0				19.3					
Do	do	do	1921	20887	do	do								19.3					
Do	do	do	1921	20888	do	do								19.3					
Do	Olga	Prosp	1910	4505	do	Andesite[6]		2.95	.0	4.2				17.3	19				
Do	Richardson	do	1910	4426	do	do.[6]		2.90	.2	2.5				18.3	24				
Do	Waldron Island	do	1910	4568	do	Feldspathic sandstone.		2.60	.4	3.1				13.2	8				
Skagit	Burlington	do	1910	4782	do	Slate		2.75	.1					11.3	6				
Do	do	Local	1910	4787	do	Basalt[6]		3.00	.0	2.9				18.7	30				
Do	Clearlake	Prosp	1910	4438	do	Diabase[6]		2.95	.1	2.1				18.0	20				
Do	Deception Pass	do	1907	2141	do	Feldspathic sandstone.		2.70	.5	2.5				18.5	13				
Do	Goat Island	do	1902	508	do	Chlorite schist		2.40	.6	3.6									
Do	Grassmere	do	1910	4460	do	Diabase[6]		2.95	.1	3.4				19.3	20				
Do	Rockport	do	1910	4471	do	Andesite[6]		2.95	.1	10.6				16.5	18				
Do	Sedro Woolley	Comm	1943	62372	do	Quartz		2.65	.1		33.6	B							
Do	do	do	1943	62373	do	Dunite		3.33	.2		37.5	B							
Skamania	Cook	Prosp	1910	4474	do	Basalt		2.80	.6	2.3				18.2	33				
Do	do	do	1916	10239	do	do		2.84	.5	2.6				18.3	24				
Do	Willard	do	1915	8332	do	Olivine basalt		2.70	.5	7.7									
Snohomish	Barlow Pass	do	1910	4464	do	Andesite[6]		2.75	.1	2.3				18.3	12				
Do	Granite Falls	do	1909	3188	do	Peridotite[6]		2.75	.6	5.3				13.3	9				
Do	do	do	1909	3189	do	Gabbro[6]		2.75	.4	5.2				16.2	10				
Do	do	do	1909	3190	do	do.[6]		2.85	.5	3.6				17.2	13				
Do	do	do	1910	4458	do	Diorite[6]		2.70	.2	2.7				18.7	17				
Do	do	do	1910	4485	do	Serpentine		2.65	.2	8.0									
Do	do	do	1910	4499	do	Diorite		2.70	.3	3.2				18.3	17				

Do	Index	Local	1910	4778	do	Granodiorite		2.70	.1	3.1				17.6	9			
Do	Monroe	Prosp	1910	4794	do	Andesite [6]		2.65	.4	4.3				15.0	8			
Do	Williams	do	1910	4540	do	Marble		2.75	.2	4.8				12.0	5			
Spokane	Cheney	do	1910	4544	do	Basalt [6]		2.90	.1					17.7	10			
Do	Colbert	do	1910	4567	do	Biotite granite		2.60	.4	10.4				18.3	8			
Do	Dartford	do	1910	4532	do	Basalt		2.80	.4	2.0				17.7	7			
Do	Elk	do	1910	4453	do	Granite		2.65	.2	4.2				18.7	8			
Do	Highland	do	1910	4465	do	Basalt		2.80	.5	3.0				17.9				
Do	Hillyard	do	1910	4446	do	Biotite granite		2.70	.2	4.0				18.8	7			
Do	do	do	1910	4545	do	Basalt		2.70	.7	2.5				18.8	24			
Do	Marshall	do	1910	4445	do	do		2.85	.4	2.2				18.5	30			
Do	do	do	1910	4492	do	do		2.80	.3					19.0	24			
Do	do	do	1910	4536	do	do		2.90	.2					18.0	12			
Do	Medical Lake	do	1910	4513	do	Biotite granite		2.65	.2	4.3				18.3	8			
Do	do	do	1910	4521	do	do		2.70	.2	3.0				18.3	11			
Do	do	do	1910	4526	do	Basalt		2.95	.1	3.0								
Do	Milan	do	1910	4447	do	Granite porphyry [6]		2.70	.4	3.2								
Do	Morse	do	1910	4487	do	Biotite granite		2.70	.2	13.8								
Do	Spokane	do	1910	4495	do	Basalt		2.95	.3					17.2	13			
Do	Wayside	do	1910	4477	do	do		2.80	.1	1.5				18.2	35			
Stevens	Addy	do	1910	4475	do	Quartzite		2.65	.1	2.8								
Do	do	do	1910	4557	do	Granite porphyry		2.70	.1	3.2				18.7	18			
Do	Arden	do	1910	4519	do	Biotite granite		2.70	.2	5.3				18.1	4			
Do	Barstow	do	1910	4462	do	Dolomitic marble		2.80	.4	5.6				17.1	7			
Do	Bluecreek	do	1910	4501	do	Serpentine		2.55	.0	8.8								
Do	do	do	1910	4571	do	Gabbro [6]		3.05	.1	2.7				18.3	17			
Do	Bossburg	do	1910	4427	do	Feldspathic sandstone.		2.25	3.9	7.6				13.1	9			
Do	do	Local	1910	4448	do	Marble		2.70	.2	5.4				12.0	6			
Do	Chewelah	Prosp	1910	4541	do	Dolomitic marble		2.85	.2	4.2				14.8	11			
Do	do	Comm	1944	63583	do	Quartzite					22.0	B						
Do	Evans	Prosp	1910	4449	do	Marble		2.70	1.3	5.4				14.7	3			
Do	Kettle Falls	Local	1910	4450	do	Diabase [6]		2.75	.3	2.9				16.1	12			
Do	Loon Lake	Prosp	1910	4493	do	Granodiorite		2.70	.2	3.9				18.7	18			
Do	Marcus	do	1910	4455	do	Chlorite-epidote schist.		2.80	.2	5.6								
Do	Meyers Falls	Local	1910	4515	do	Volcanic ash		2.75	.1	2.8				16.9	23			
Do	do	Prosp	1910	4522	do	Calcareous quartzite.		2.65	.2	4.0								
Do	Northport	Local	1910	4785	do	Marble		2.70	.1	4.9				12.4	6			
Do	Springdale	Prosp	1910	4535	do	Basalt		2.80	.4	2.4								
Do	do	do	1910	4572	do	Siliceous dolomite		2.80	.1	3.8								
Do	Valley	do	1910	4476	do	Basalt		2.80	.3	2.6				17.3	12			
Do	do	do	1910	4533	do	Granodiorite		2.75	.3	12.0								
Thurston	Gate	do	1910	4517	do	Basalt [6]		2.80	.3	4.1				11.2	7			
Do	do	do	1910	4547	do	Gabbro [6]		2.75	.1	5.9				13.3	8			
Do	do	Local	1910	4554	do	Basalt		2.90	.1	3.6				11.0	5			
Do	Olympia	do	1910	4573	do	do		3.05	.1	2.5				18.7	14			
Do	Tumwater	Prosp	1910	4437	do	Olivine basalt		2.95	.1	2.3				17.7	20			
Wahkiakum.	Cathlamet	Local	1910	4508	do	Basalt		2.70	.3	2.9				17.4	9			
Do	do	Prosp	1910	4530	do	do		2.90	.1	1.9				17.7	24			
Do	do	do	1910	4552	do	do		2.80	.2	3.1				17.8	11			
Do	Skamokawa	Local	1910	4514	do	do		2.80	.2	2.2				18.4	23			
Walla Walla.	Dixie	Prosp	1910	4500	do	do		2.90	.2	2.7				17.2	6			
Do	Touchet	do	1910	4472	do	do		2.75	.2	3.2				18.0	6			
Whatcom	Bellingham	Local	1904	1028	do	Feldspathic quartzite.		2.80	.1	2.5				18.2	23			
Do	do	Comm	1942	56874	Gravel	RQ					15.6	B						
Do	Coal Creek	Prosp	1904	1024	Stone	Diabase [6]		3.05	1.4	4.9				12.8	4			
Do	Deming	do	1910	4770	do	Feldspathic sandstone.		2.45	1.8	8.2				8.3	5			
Do	Kendall	Comm	1910	4775	do	Marble		2.75	.1	4.9				12.3	7			
Do	Saar Creek	Prosp	1904	1023	do	Andesite [6]		2.70	.3	3.3				17.6	17			
Do	Wickersham	do	1910	4774	do	Sericite schist		2.70	.3	23.3								
Do	do	do	1910	4781	do	Feldspathic sandstone.		2.60	.6	15.9				9.2	5			
Whitman	Colfax	Local	1905	1272	do	Basalt		2.90	.6	2.0				17.8	22			
Do	Palouse	Prosp	1910	4529	do	do		2.95	.1	2.3				18.2	22			
Do	Pullman	Local	1906	1735	do	do		2.95	.5	2.5				17.7	10			
Do	do	Prosp	1910	4503	do	do [6]		2.90	.1	2.3								
Do	Rosalia	Local	1910	4491	do	do		2.80	.2	2.7				17.6	26			
Do	Steptoe	Prosp	1910	4494	do	Quartzite		2.65	.2	5.2				18.7	9			
Do	Winona	do	1910	4456	do	Basalt		2.90	.1	2.5				19.0	25			
Yakima	Yakima	do	1910	4428	do	do		2.90	.2	2.5				18.0	19			
Do	do	do	1910	4512	do	do		2.90	.0	3.0				17.5	16			

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

WEST VIRGINIA

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Barbour	Belington	Local	1919	13886	Stone	Sandstone		2.36	1.8	7.7				17.3	7				
Do	Philippi	Prosp	1908	3030	do	do		2.50	.9	6.6				16.1	8				
Do	do	do	1908	3106	do	do		2.50	2.2	4.8				6.4	5				
Do	do	do	1908	3108	do	Limestone		2.75	.8	3.6				16.8	17				
Berkeley	Bedington	Local	1916	10068	do	Argillaceous limestone.		2.75	.1	4.9				16.0	10				
Do	do	do	1916	10075	do	do		2.70	.2	5.6									
Do	Berkeley	Comm	1911	5365	do	Limestone		2.70	.1	4.6			23,350	16.0	7				
Do	do	do	1911	5377	do	do		2.70	.3	5.1				12.2	6				
Do	do	do	1914	8153	do	Argillaceous limestone.		2.70	.2	4.1				15.7	3				
Do	do	do	1915	8586	do	Siliceous dolomite		2.85	.2	3.6				17.2	17				
Do	do	do	1916	10066	do	Limestone		2.70	.2	6.3				16.0	4				
Do	do	do	1919	14265	do	do		2.72	.1	9.0				14.7	3				
Do	do	do	1919	14266	do	do		2.71	.1	7.3				14.0	3				
Do	do	do	1922	21224	do	Siliceous dolomite		2.82	.1	3.4				17.3	19				
Do	do	do	1922	21281	do	do		2.83	.1	3.1									
Do	do	do	1942	57870	do	Limestone					28.4	B							
Do	do	do	1944	66298	do	do					21.9	C							
Do	Blairton	Prosp	1916	10065	do	Argillaceous limestone.		2.70	.1	5.1				16.7	6				
Do	do	Comm	1916	10084	do	Limestone		2.70	.1	5.9				16.3	5				
Do	Bunker Hill	do	1916	10070	do	do		2.70	.1	5.1				16.0	4				
Do	Cumbo	Prosp	1916	10085	do	do		2.75	.3	4.6				16.7	4				
Do	Darkesville	do	1916	10077	do	do		2.70	.2	5.0				15.0	4				
Do	Falling Waters	do	1916	10079	do	do		2.70	.2	4.7				16.7	8				
Do	do	do	1916	10082	do	do		2.70	.4	5.6									
Do	Gerrardsville	Local	1916	10074	do	Argillaceous limestone.		2.75	.2	6.5				15.7	12				
Do	Hedgesville	do	1916	10073	do	Feldspathic sandstone.		2.65	.4	2.8				16.7	16				
Do	Inwood	Prosp	1916	10062	do	Sandstone		2.30	2.2	16.6				19.3	2				
Do	Jones Springs	Comm	1916	10067	do	Siliceous limestone		2.70	.2	4.4				17.3	9				
Do	do	Prosp	1916	10081	do	Argillaceous limestone.		2.70	.2	5.7				14.0	4				
Do	Martinsburg	Comm	1908	2488	do	Limestone		2.70	.2	4.8			29,500	16.7	4				
Do	do	do	1908	2606	do	do		2.70	.1	4.1				15.7	8				
Do	do	do	1908	2607	do	do		2.70	.1	4.2				16.4	4				
Do	do	Prosp	1908	3074	do	do		2.75	.1	3.5				16.4	10				
Do	do	do	1912	5893	do	Siliceous limestone.		2.70	.2	3.5				15.8	10				
Do	do	Comm	1913	7369	do	Dolomite		2.85	.2	2.5				17.3	13				
Do	do	Local	1915	8504	do	Limestone		2.70	.4	5.4				13.7	6				
Do	do	Comm	1916	10064	do	Dolomite		2.85	.2	3.6				16.3	10				
Do	do	do	1916	10086	do	Limestone		2.70	.3	5.8				18.0	5				
Do	do	do	1916	10102	do	do		2.77		5.2				16.7	6				
Do	do	do	1917	11708	do	do		2.74	.1	5.9				14.0	3				
Do	do	do	1919	14263	do	do		2.72	.1					14.7	6				
Do	do	do	1921	19691	do	Dolomite		2.77	.3	4.9				17.3	8				
Do	do	do	1921	20476	do	Limestone		2.74	.3					14.7	4				
Do	do	do	1922	21271	do	Argillaceous dolomite.		2.83	.2	4.0				17.0	9				
Do	do	do	1922	21280	do	Siliceous limestone.		2.81	.1	3.1				16.7	16				
Do	do	do	1923	24435	do	Siliceous dolomite				5.6									
Do	do	do	1926	28141	do	Limestone		2.78	.1	4.0				16.7	17				
Do	do	do	1926	28142	do	do		2.77	.1	4.0				16.0	13				
Do	do	do	1926	28143	do	do		2.78	.1	3.9				17.3	15				
Do	do	do	1926	28144	do	do		2.74	.1	4.2				15.3	12				
Do	do	do	1926	28145	do	Argillaceous limestone.		2.74	.1	4.4				16.7	15				
Do	do	do	1926	28146	do	Limestone		2.75	.1	4.4				15.3	10				
Do	do	do	1926	28147	do	do		2.79	.1	3.7				16.7	14				
Do	do	do	1926	28148	do	do		2.76	.0	4.0				16.7	11				
Do	do	do	1926	28149	do	do		2.75	.0	3.9				16.7	16				
Do	do	do	1928	30294	do	do		2.68	.4	8.1				15.3	6				

Do	do	do	1928	30702	do	do		2.72	.0	7.4				17.3	6			
Do	do	do	1930	32409	do	do		2.71	.1	6.6								
Do	do	do	1930	33107	do	do		2.71	.1	4.3								
Do	do	do	1930	33264	do	do		2.71	.1	3.8	16.6	A			6			
Do	do	do	1931	34505	do	do				5.8								
Do	do	do	1933	34849	do	do		2.72	.1	4.0								
Do	do	do	1933	34923	do	do				5.4				16.3	4			
Do	do	do	1934	40241	do	do				7.0					4			
Do	do	do	1934	40261	do	do				4.9					6			
Do	do	do	1934	40262	do	do				7.0					5			
Do	do	do	1934	40263	do	do				7.2					4			
Do	do	do	1934	40264	do	do				5.5					4			
Do	do	do	1934	40265	do	do				7.0					4			
Do	do	do	1934	40742	do	do					35.9	A						
Do	do	do	1934	40774	do	do		2.76	.2	4.1					11			
Do	do	do	1934	40864	do	do				5.5	35.0	A			5			
Do	do	do	1935	40896	do	do		2.70	.1	5.7					3			
Do	do	do	1935	42004	do	do				4.9	32.5	A			4			
Do	do	do	1935	42256	do	do					29.1	A						
Do	do	do	1935	42367	do	do					33.8	A						
Do	do	do	1935	42440	do	do					24.1	A						
Do	do	do	1937	43154	do	do					27.1	A						
Do	do	do	1937	44614	do	Argillaceous limestone.					27.2	A						
Do	do	do	1940	49495	do	Limestone					28.2	B						
Do	do	do	1941	53939	do	do					28.5	B						
Do	do	do	1942	56504	do	do					34.5	A						
Do	do	do	1942	56919	do	do					32.8	B						
Do	do	do	1942	57014	do	do					32.9	B						
Do	do	do	1942	57690	do	do					29.2	C						
Do	do	do	1942	58237	do	do					34.4	B						
Do	do	do	1942	59110	do	do					32.8	B						
Do	do	do	1943	61226	do	do					28.2	B						
Do	do	do	1943	61342	do	do					29.7	B						
Do	do	do	1943	62940	do	do					26.3	C						
Do	do	do	1944	63500	do	do					28.0	B						
Do	do	do	1944	63501	do	do					27.5	C						
Do	do	do	1944	63922	do	do					23.6	A						
Do	do	do	1944	63923	do	do					24.3	C						
Do	do	do	1944	64406	do	do					29.2	A						
Do	do	do	1944	64715	do	do					32.7	B						
Do	do	do	1944	64717	do	do					26.3	C						
Do	do	do	1944	66364	do	do					19.7	B						
Do	do	do	1945	67926	do	do					29.7	A						
Do	do	do	1945	69843	do	do					28.3	A						
Do	do	do	1946	70516	do	do					28.0	A						
Do	do	do	1947	73407	do	do					23.5	A				.8	1½–#4	
Do	do	do	1947	73409	do	do										1.5	½–#8	
Do	do	do	1947	73684	do	do					31.8	B				.5	1–#4	
Do	do	do	1947	73723	do	do					30.6	C						
Do	do	do	1947	73960	do	do										.6	1½–#4	
Do	do	do	1947	73961	do	do										1.6	½–#4	
Do	do	do	1947	73962	do	do					29.3	B						
Do	do	do	1947	73998	do	do					28.3	B				.2	1–#4	
Do	do	do	1947	74034	do	do					26.5	B						
Do	do	do	1947	74314	do	do					35.0	B				.8	¾–#4	
Do	do	do	1949	78979	do	do					20.3	B						
Do	do	do	1949	78980	do	do										1.8	¾–#4	
Do	do	do	1949	78981	do	do										1.6	⅜–#4	
Do	do	do	1950	79816	do	do					21.1	C						
Do	Tomahawk	Prosp	1916	10078	do	Siliceous limestone.		2.70	.2	4.5				18.3	15			
Do	do	Local	1916	10087	do	Sandstone		2.50	1.1	7.9								
Do	Vanclevesville	do	1916	10076	do	Argillaceous limestone.		2.70	.2	5.0				17.0	9			
Boone	Peytona	Prosp	1908	3105	do	Sandstone		2.55	1.2	3.4				16.8	12			
Braxton	Gassaway	do	1908	3102	do	do		2.50	3.0	3.5				12.7	10			
Do	Sutton	do	1910	4645	do	Feldspathic sandstone.		2.50	2.0	17.9				17.8	5			
Brooke	Wellsburg	do	1908	3107	do	Limestone		2.70	.3	3.1								
Cabell	Huntington	do	1906	1777	Stone	Sandstone		2.60	1.4	9.5				.0	6			
Do	do	do	1906	1884	do	Limestone		2.65	.8	4.4				15.2	8			
Do	do	do	1906	1885	do	do		2.65	.7	5.4				11.0	9			
Do	do	do	1908	2417	do	Feldspathic sandstone.		2.55	2.2	7.4				14.7	6			
Do	do	do	1908	2418	do	Calcareous sandstone.		2.60	.9	4.9				15.7	6			
Do	do	do	1908	2485	do	Sandstone [1]		2.50	2.0	28.4				12.2	2			
Do	do	do	1908	3021	do	do.[1]		2.35	1.8	41.7								

[1] Weathered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

WEST VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Cabell	Huntington	Prosp	1908	3029	Stone	Calcareous sandstone.		2.65	0.6	3.3				14.2	6				
Calhoun	Bigbend	do	1908	3034	do	do		2.65	.9					16.7	8				
Fayette	Kingston	do	1919	14358	do	Feldspathic sandstone.		2.50	2.0	9.3				14.3	9				
Do	Wicklow	do	1908	3073	do	Sandstone		2.55	.5	4.2				18.8	9				
Grant	Scherr	do	1916	10511	do	Argillaceous limestone.		2.66	.4	5.4									
Greenbrier	Alvon	do	1908	3022	do	Cherty limestone		2.70	.2	7.1									
Do	do	do	1908	3026	do	Sandstone		2.55	.7	2.5				18.0	6				
Do	Frazier	Local	1912	5918	do	Limestone		2.75	.2	3.7			17,450						
Do	Organ Cave	Prosp	1908	3069	do	do		2.70	.2	4.1				15.8	8				
Do	Renick	Comm	1912	5917	do	Crystalline limestone.		2.70	.1	3.7			21,300	16.8	8				
Do	do	do	1916	9925	do	Argillaceous limestone.		2.70	.4	3.8				16.3	8				
Do	Ronceverte	Prosp	1917	11915	do	Limestone		2.70	.1	4.3				16.7	11				
Do	Snow Flake	Comm	1912	5919	do	do		2.70	.6	5.5			13,550						
Do	do	do	1916	9972	do	do		2.70	.1	4.1				15.7	9				
Do	White Sulphur Springs.	Prosp	1917	11715	do	Feldspathic sandstone.		2.64	.5	3.2				18.7	14				
Do	do	do	1917	11763	do	do		2.64	.5	3.0				18.7	14				
Hampshire	Green Spring	do	1914	7417	do	Siliceous limestone.		2.65	.2	2.1				17.9	10				
Do	do	do	1914	7418	do	Quartzite		2.55	.5	3.5				19.5	13				
Do	do	do	1914	7475	do	Siliceous limestone.				2.8			34,400	18.6	13				
Do	do	do	1914	7476	do	Quartzite				3.8			15,050	19.1	9				
Do	Ridgedale	do	1909	3427	do	Limestone		2.70	.2	3.5				16.3	9				
Do	do	do	1909	3428	do	do		2.70	.2	3.5				16.8	10				
Hancock	Weirton	Comm	1950	80509	Slag	Blast furnace		2.12	3.2		35.4	A							
Hardy	Wardensville	Prosp	1921	17866	Stone	Limestone		2.72	.1	4.9				13.3	4				
Harrison	Clarksburg	do	1912	5948	do	Argillaceous limestone.		2.75	.5	3.5				16.5	16				
Do	do	Local	1920	15486	do	Feldspathic sandstone.		2.47	2.8	4.7				10.0	8				
Do	Lost Creek	Prosp	1908	3027	do	Sandstone		2.45	3.4	6.8				9.5	4				
Jackson	Millwood	do	1908	3000	do	do		2.50	2.3	9.6				4.5	4				
Do	Ravenswood	Comm	1950	80518	Gravel	SCGQz Sh					28.7	A							
Do	Ripley	Prosp	1908	3031	Stone	Sandstone		2.50	2.3	5.0				6.4	7				
Do	Silverton	do	1908	3103	do	do		2.50	2.6	6.3				.0	4				
Jefferson	Charles Town	Local	1911	5741	do	Limestone		2.70	.1	4.1				16.8	7				
Do	Engle	do	1908	2489	do	do		2.70	.2	4.5				11.8	4				
Do	do	Comm	1915	8876	do	Argillaceous limestone.		2.70	.1	6.8				14.5	3				
Do	do	do	1935	40886	do	Dolomitic limestone.				3.4	26.1	A			10				
Do	Kearneysville	do	1908	2490	do	Limestone		2.75	.4	4.2				14.7	5				
Do	do	do	1908	2589	do	do		2.70	.1	3.9				14.3	6				
Do	do	do	1916	10103	do	do		2.80	.1	2.7				14.0	6				
Do	do	do	1920	15988	do	do				4.8									
Do	do	do	1920	16209	do	Argillaceous limestone.		2.72	.1	4.6				14.7	6				
Do	Middleway District.	Prosp	1908	3025	do	Limestone		2.70	.2	4.0				15.8	10				
Do	Millville	Comm	1908	2579	do	Dolomitic limestone.		2.80	.4	4.4				14.3	7				
Do	do	do	1908	2634	do	Dolomite		2.85	.2	3.7				16.6	6				
Do	do	do	1917	11609	do	do		2.84	.2	4.5				16.7	6				
Do	do	do	1925	26657	do	do		2.85	.0	4.0				16.7	9			S	1½–1
Do	do	do	1926	28735	do	do		2.86	.2	4.6				14.7	9				
Do	do	do	1927	29355	do	do		2.84	.2	4.5				14.7	11				
Do	do	do	1934	40271	do	do		2.83	.2	4.1					8				
Do	do	do	1934	40272	do	do		2.88	.2	4.8					9				
Do	do	do	1934	40273	do	do		2.77	.2	4.1					9				
Do	do	do	1934	40290	do	do					24.4	B							
Do	do	do	1934	40291	do	do					25.6	B							

Do	do	do	1934	40292	do	do					24.2	B							
Do	do	do	1934	40294	do	do					23.4	B							
Do	do	do	1934	40295	do	do					24.5	B							
Do	do	do	1934	40296	do	do					24.7	B							
Do	do	do	1934	40297	do	do					26.0	B							
Do	do	do	1934	40305	do	do					23.0	B							
Do	do	do	1934	40306	do	do					25.1	B							
Do	do	do	1934	40307	do	do					24.7	B							
Do	do	do	1934	40308	do	do					24.4	B							
Do	do	do	1934	40309	do	do					24.9	B							
Do	do	do	1934	40315	do	do					24.5	B							
Do	do	do	1934	40316	do	do					24.1	B							
Do	do	do	1934	40317	do	do					22.8	B							
Do	do	do	1934	40318	do	do					23.1	B							
Do	do	do	1934	40319	do	do					25.0	B							
Do	do	do	1935	40865	do	do				3.4	23.1	A				7			
Do	do	do	1936	42368	do	do					23.6	A							
Do	do	do	1938	44901	do	do				7.1						9			
Do	do	do	1938	44902	do	do				3.4						15			
Do	do	do	1938	44903	do	do				3.4						10			
Do	Summit Point	Prosp	1908	3032	do	Dolomitic limestone.		2.80	.2	2.9				17.5		22			
Kanawha	Blakeley	do	1908	3023	do	Siliceous slate		2.60	.5	4.8				19.7		30			
Do	Kendalia	do	1908	2969	do	Feldspathic sandstone.		2.55	2.1	6.6				15.8		6			
Do	Nitro	Local	1918	12728	do	do		2.49	3.1	4.6				3.0		6			
Do	Saint Albans	Prosp	1908	2965	do	Limestone		2.70	.3	4.9				16.4		4			
Do	Spring Hill	Local	1912	6109	do	Sandstone		2.55	1.2	14.6			12,400	12.1		4			
Do	Tornado	Prosp	1908	3070	do	do		2.50	2.5	8.8				.0		4			
Lewis	Camden	do	1909	3238	do	Limestone		2.70	.8					16.7		15			
Do	Weston	do	1908	3104	do	Sandstone		2.65	1.4	4.1				9.9		7			
Lincoln	Hamlin	Local	1919	13908	do	do		2.46	3.2	8.7				12.0		5			
Do	do	Prosp	1919	13992	do	do		2.49	3.9	8.6				3.3		3			
Logan	Chapmanville	do	1908	2972	do	Feldspathic sandstone.		2.55	1.6	6.4				13.2		5			
Do	Kitchen	do	1909	3237	do	Sandstone		2.55	1.8	2.6				8.3		8			
Do	Logan	do	1919	14625	do	Calcareous sandstone.		2.71	.5	2.5				13.3		7			
McDowell	Berwind	Local	1908	2997	do	Sandstone		2.60	1.3	4.2				16.8		9			
Do	Elkhorn	Prosp	1908	2974	do	Ferruginous sandstone.		2.50	1.5	4.3				14.9		9			
Do	Gary	do	1908	3066	do	Feldspathic sandstone.		2.60	1.0	3.3						7			
Do	Northfork	do	1907	2088	do	do		2.65	.5	3.0				15.5		8			
Do	Welch	do	1910	4622	do	do		2.65	2.1	4.2				15.0		8			
Marion	Fairmont	do	1910	4760	do	Argillaceous sandstone.		2.65	1.5	4.5				12.0		14			
Do	do	do	1914	7493	do	Argillaceous limestone.				3.4				17.5		10			
Do	do	do	1914	7785	do	do		2.70	.3	4.3				16.8		7			
Do	do	do	1914	7833	do	Ferruginous sandstone.		2.50	1.5	4.8				5.3		8			
Do	do	do	1914	7834	do	Argillaceous limestone.		2.70	.3	3.9				17.2		11			
Do	do	do	1915	8854	do	do		2.75	.2	3.4				16.1		9			
Do	do	do	1915	9132	do	Sandstone							5,420						
Do	do	do	1915	9133	do	do							5,720						
Do	do	do	1915	9134	do	do							6,080						
Do	Mannington District.	do	1914	7494	do	Feldspathic sandstone.				7.8				11.8		5			
Do	Rivesville	Comm	1918	13396	do	Limestone		2.59	.3	4.3				16.0		9			
Marshall	Benwood	do	1944	66185	Slag	Blast furnace					30.9	A							
Mason	Point Pleasant	Prosp	1908	2976	Stone	Feldspathic sandstone.		2.40	3.5					.0		5			
Do	do	Comm	1923	23746	Gravel	QSQzCG	2½			5.7		A							
Do	Union District	Prosp	1908	2967	Stone	Feldspathic sandstone.		2.45	3.0	8.3				.0		5			
Mercer	Bluefield	do	1907	2095	do	Limestone		2.65	1.0	4.3									
Do	do	do	1908	2970	do	do		2.70	.3	3.3				16.8		11			
Do	Princeton	do	1914	7735	do	Feldspathic sandstone.		2.60	.8					13.2		7			
Do	do	do	1914	7740	do	Argillaceous limestone.		2.70	.1	7.3									
Do	do	do	1914	7764	do	Calcareous sandstone.		2.70	.2	5.8				13.4		15			
Do	do	do	1915	8746	do	do		2.65	.7	3.7				17.0		11			
Do	do	do	1920	16384	do	Sandstone		2.50	1.8	3.9						8			
Mineral	Keyser	Local	1908	2472	do	Limestone		2.70	.2	4.0				16.2		7			
Do	Pattersons Creek.	Prosp	1909	3350	do	do		2.70	.1	4.1				18.8		13			
Do	do	do	1909	3351	do	do		2.65	.1	2.3				18.8		23			

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

WEST VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Mingo	Williamson	Local	1914	7830	Stone	Feldspathic sandstone.		2.60	1.5	5.3				7.0	6				
Monongalia.	Daybrook	Prosp	1908	3033	do	Ferruginous sandstone.		2.45	2.4					14.0	9				
Do	Greer	Comm	1916	9966	do	Argillaceous limestone.		2.70	.4	4.7				15.7	8				
Do	do	do	1916	9967	do	do		2.70	.4	4.7				15.7	9				
Do	do	do	1916	9968	do	do		2.70	.4	4.8				14.0	9				
Do	do	do	1916	9969	do	Siliceous limestone.		2.70	.3	3.0				16.7	10				
Do	do	do	1924	24624	do	Argillaceous limestone.		2.71	.1	4.1			26,480	17.3	10				
Do	do	do	1932	34715	do	do				4.0	23.4	A							
Do	do	do	1935	40954	do	Limestone				4.3	23.0	A			7				
Do	do	do	1940	48857	do	Argillaceous limestone.					22.2	A							
Do	do	do	1940	48860	do	do					19.4	A							
Do	Morgantown	Local	1903	767	do	Limestone		2.70	.3	5.6									
Do	do	Prosp	1908	2514	do	Ferruginous sandstone.		2.40	1.1	11.2				15.2	4				
Do	do	do	1908	3071	do	Limestone		2.70	.3	4.7				17.1	11				
Do	do	Comm	1931	33278	Gravel	Sandstone		2.56		10.0		A							
Do	Opekiska	Prosp	1908	2513	Stone	Feldspathic sandstone.		2.50	2.4	6.9				14.7	5				
Do	Randall	do	1908	3065	do	Limestone		2.70	.8	3.6				17.2	12				
Do	Smithtown	do	1908	3024	do	Ferruginous sandstone.		2.15	3.0	6.1									
Do	Sturgisson	Comm	1911	5610	do	Siliceous limestone.		2.70	.1	4.9			22,440	16.1	10				
Do	do	do	1911	5612	do	Limestone		2.70	.3	4.4			17,910	16.0	6				
Do	do	do	1911	5613	do	Argillaceous limestone.		2.70	.4	4.3			14,300	14.2	4				
Do	do	do	1911	5614	do	Calcareous sandstone.		2.70	.2	2.9			29,840	16.8	11				
Do	do	do	1911	5615	do	Limestone		2.70	.3	4.3			19,650	16.0	10				
Do	do	do	1911	5616	do	Argillaceous limestone.		2.70	.2	3.8			24,850	15.9	10				
Monroe	Union	Local	1920	15812	do	Siliceous limestone.		2.73	.1	5.3				16.3	8				
Do	do	do	1920	15813	do	do		2.75	.2	4.6				16.0	9				
Do	do	do	1920	15814	do	do		2.72	.1	2.9				17.3	13				
Morgan	Berkeley Springs.	do	1915	9560	do	Limestone		2.70	.3	7.1				15.8	4				
Do	do	Prosp	1915	9561	do	Sandstone		2.60	.6	5.1				19.0	10				
Do	do	do	1915	9563	do	Limestone		2.70	.2	6.5									
Do	do	do	1915	9564	do	Ferruginous sandstone.		2.70	.6	4.0				16.3	11				
Do	do	Local	1919	14733	do	Quartzite		2.62	.2	2.6				19.3	22				
Do	Great Cacapon	Prosp	1908	3001	do	Dolomite		2.75	.5	3.2				14.8	19				
Do	do	Local	1915	9562	do	Sandstone		2.60	1.0	8.0				18.3	8				
Do	Paw Paw	Prosp	1923	23465	do	Ferruginous sandstone.		2.69	.3	6.2				18.3	16				
Do	Sir Johns Run	do	1915	9559	do	Sandstone		2.65	.4	3.0				18.8	12				
Nicholas	Richwood	Local	1935	42091	do	Limestone		2.57	1.7	4.1	46.0	A							
Do	do	do	1935	42093	do	Sandstone		2.53	1.9		41.1	A							
Ohio	Elm Grove	do	1906	1669	do	Limestone		2.65	.9	4.8					7				
Do	do	do	1906	1670	do	do		2.70	.6	4.3				19.1	7				
Do	do	do	1906	1672	do	do		2.70	.8	3.5				18.0	15				
Do	Valley Grove	Prosp	1906	1668	do	do		2.65	1.1	4.2				17.2	11				
Do	Wheeling	do	1912	6137A	do	do		2.65	.6	4.2				15.7	12				
Do	do	do	1912	6137B	do	do		2.65	1.0	4.9				15.7	11				
Do	do	do	1912	6137C	do	do		2.75	.6	2.9				16.7	14				
Do	do	do	1919	14710	Slag	Blast furnace		2.09	4.6	7.0									
Pleasants	Saint Marys (Ohio River).	Comm	1928	30220	Gravel	SQL	2			12.4		A							
Pocahontas	Marlinton	Prosp	1913	6925	Stone	Limestone		2.75	.0	3.6				16.0	13				

Do	Mill Point	do	1938	46363	Gravel	Sandstone					49.7	B							4.7	1½–#4
Do	do	Local	1940	51915	Stone	Fossiliferous limestone.					23.1	A								
Preston	Albright	Prosp	1916	10348	do	Sandstone		2.46	1.2	8.1				17.3	5					
Do	do	do	1916	10349	do	Ferruginous sandstone.		2.56	1.5	4.0				15.3	9					
Do	Aurora	Comm	1935	40955	do					3.5	17.0	A			9					
Do	Buckhorn	Prosp	1908	2511	do	Dolomitic limestone.		2.65	.2	2.2				18.0	14					
Do	Hardman	do	1923	24420	do	Limestone		2.68	.5	4.2			32,800	17.0	8					
Do	do	do	1923	24421	do	Argillaceous limestone.		2.60	1.6	4.7			27,950	16.0	9					
Do	Irondale	do	1921	20894	do	do		2.60	1.5	5.7										
Do	do	do	1921	20895	do	do		2.66	.8	4.4				16.7						
Do	Rowlesburg	do	1908	2697	do	Limestone		2.70	.7	8.4										
Putnam	Hurricane	do	1919	14320	do	Feldspathic sandstone.		2.46	2.9	11.7				2.7	4					
Do	Nitro	do	1918	12787	do	do		2.43	3.4	11.6				.0	6					
Do	Red House	do	1908	2891	do	Sandstone		2.45	2.6	11.8				3.5	3					
Raleigh	Beckley	do	1910	4796	do	do		2.60	.2	3.2				17.3	10					
Do	do	do	1917	11472	do	do		2.51	2.0	3.1				15.0	6					
Do	do	do	1919	14133	do	Feldspathic sandstone.		2.56	1.6	3.8				15.3	7					
Do	do	do	1919	14134	do	Sandstone		2.45	2.0	4.5				17.2	6					
Do	do	do	1920	16326	do	do		2.43	2.3	5.1					7					
Do	Bolt	do	1917	11736	do	Quartz conglomerate.		2.42	.2	31.6										
Do	Cherry Glade	do	1917	11545	do	Sandstone		2.44	2.7	8.2				16.7	4					
Do	Cranberry	do	1920	16203	do	Feldspathic sandstone.		2.56	1.4	8.0				11.3	5					
Do	Daniels	do	1917	11546	do	Sandstone		2.49	1.4	4.8				16.7	7					
Do	Ghent	do	1917	11544	do	do		2.54	1.5	4.2				17.3	8					
Do	Lester	do	1917	11471	do	do		2.40	2.4	9.5				13.3	5					
Do	Price Hill	do	1920	16464	do	do		2.43	1.8	6.4					7					
Do	Prosperity	do	1920	16487	do	do		2.50	1.2	4.4				16.3	10					
Do	Shady Spring	do	1917	11547	do	do		2.51	1.6	4.9				18.0	6					
Do	Surveyor	do	1917	11473	do	do		2.48	1.8	4.2				18.0	6					
Do	do	do	1920	16146	do	do		2.50	1.7	3.4				17.7	10					
Do	Sylvia	Local	1919	14176	do	do		2.56	1.1	6.1				14.8	6					
Do	Trap Hill District.	Prosp	1916	11130	do	do		2.47	2.4	3.9				16.6	9					
Randolph	Alpena	do	1908	3002	do	Limestone		2.70	.2	3.9				16.6	10					
Do	Bowden	Comm	1947	73458	do	Oolitic limestone					23.7	A								
Do	Elkins	do	1947	73306	do	Limestone					24.8	A								
Do	Glady	Local	1935	42154	do	Argillaceous sandstone.					25.9	A								
Do	Kingsville	Prosp	1908	3067	do	Ferruginous sandstone.		2.40	2.3	16.3				11.8	3					
Do	Silica	do	1908	3005	do	Sandstone		2.60	.4					18.5	10					
Roane	Spencer	do	1916	10036	do	Feldspathic sandstone.		2.50	2.3	12.3				8.7	4					
Do	do	do	1918	13571	do	Micaceous sandstone.		2.50	2.7	8.9				2.0	8					
Do	do	Local	1918	13806	do	Calcareous sandstone.		2.50	1.2	4.4				10.7	6					
Do	do	Prosp	1919	14245	do	do		2.65	.8	4.7				15.0	9					
Summers	Talcott	do	1908	3068	do	Sandstone		2.60	.8	2.3				17.8	13					
Taylor	Blueville	Local	1921	19978	do	do		2.43	1.7	3.9				17.7	20					
Do	Fetterman	do	1918	13296	do	Feldspathic sandstone.		2.47	2.5	9.2				11.7	5					
Do	Grafton	Prosp	1908	2966	do	do		2.50	2.2	6.4				13.7	6					
Tucker	Davis	do	1916	10509	do	Siliceous limestone.		2.68	.0	3.7				14.3	10					
Do	do	do	1916	10510	do	Argillaceous limestone.		2.69	.1	5.0				16.3	6					
Do	Hendricks	Local	1946	71314	do	Limestone					19.3	A								
Do	do	Comm	1949	78536	do	do		2.71	.3		18.9	A								
Do	Parsons	Prosp	1939	34989	do	Siliceous limestone.		2.69	.4	3.6				13.7	8					
Tyler	Middlebourne	do	1919	13887	do	Sandstone		2.47	2.7	7.8				9.3	5					
Upshur	Adrian	do	1908	3028	do	do		2.50	1.8	14.1				17.3	3					
Do	Buckhannon	Comm	1935	40913	do	Limestone				5.1	26.5	A			6					
Do	Newlon	Prosp	1908	2999	do	Sandstone		2.45	1.2	19.3				10.0	4					
Do	Sand Run	do	1908	2998	do	do		2.50	.9	7.2				18.1	7					
Webster	Webster Springs	do	1908	2975	do	Limestone		2.70	.2					16.5	9					
Wetzel	Littleton	Local	1919	14281	do	Feldspathic sandstone.		2.31	4.3	19.1				9.0	3					
Do	do	do	1919	14282	do	do		2.42	3.1	10.6				6.7	4					

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

WEST VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Wetzel	New Martinsville (Ohio River).	Comm	1935	42142	Gravel	SCG					45.1	A							
Do	do	do	1935	42143	do	SCG					47.4	A							
Do	do	do	1940	48856	do	SQzGnLQC					30.7	A							
Do	do	do	1940	48859	do	SQzGnLC					34.4	A							
Do	Uniontown	Prosp	1908	3064	Stone	Sandstone		2.40	1.9	28.2				8.3	3				
Do	do	do	1908	3075	do	do		2.50	1.8					3.3	3				
Wirt	Palestine	do	1910	4871	do	Feldspathic sandstone.		2.50	1.9	8.5				.0	5				
Do	do	do	1910	4872	do	do		2.50	1.5	16.3				7.7	4				
Wood	Deer Walk	do	1925	27413	do	do		2.28	4.9	18.8				11.0	3				
Do	Parkersburg	Local	1908	2968	do	do		2.50	2.8	7.7				.0	6				
Do	do	Prosp	1915	8447	do	do		2.60	2.0				11,910	12.7	5				
Do	Parkersburg (Ohio River).	Comm	1945	68157	Gravel	SGQzGnQ	2	2.51	1.6		30.3	A				108	2–#4	4.5	1½–#4
Wyoming	Herndon	Local	1908	2973	Stone	Feldspathic sandstone.		2.60	1.0	3.2				17.0	11				
Do	Maben	Prosp	1908	2971	do	Sandstone		2.60	.4	2.5				18.9	11				

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Barron	Haugen	Comm	1949	77356	Gravel	BSQG	1½	2.77	1.0		19.0	A						6.7	1½–½
Do	do	do	1949	77357	do	BSQG	1	2.77	1.0									9.9	1–#4
Do	do	do	1949	79401	do	DQzSRGQ	1½											1.7	1½–¾
Do	do	do	1949	79402	do	DQzSRGQ	¾											5.1	¾–#4
Brown	Greenleaf	do	1913	6542	Stone	Dolomite		2.75	1.3	3.0				14.8	8				
Calumet	Brillion	do	1913	6504	do	do		2.65	.8	7.5				12.2	5				
Do	do	do	1919	14132	do	do		2.77	.6	4.6				12.5	4				
Chippewa	Chippewa Falls	do	1930	33182	Gravel	RQzQS	2½	2.62	1.2	6.7		A							
Do	do	do	1932	34729	do	RQzQS												7.8	1½–#4
Columbia	Columbus	Local	1912	6161	Stone	Argillaceous dolomite.		2.65	1.7	5.7				12.7	3				
Crawford	Bridgeport	do	1912	5788	do	Siliceous dolomite.		2.60	1.9	8.9				9.8	5				
Do	do	do	1912	6223	do	Dolomite		2.80	.4					12.7	8				
Do	Prairie du Chien	do	1912	6216	do	do		2.65	1.6	7.0				5.8	4				
Do	Soldiers Grove	Prosp	1912	6209	do	do		2.60	1.8	8.4				11.3	4				
Dane	Burke	Comm	1934	40106	Gravel	do					37.5	B							
Do	Fitchburg	Prosp	1904	1009	Stone	do		2.65	1.6	9.0				14.0	7				
Do	Madison	Comm	1903	746	do	Rhyolite		2.60	.1	2.4									
Do	do	Local	1912	6438	do	Argillaceous dolomite.		2.60	1.3	10.8				12.5	4				
Do	Middleton	do	1912	6228	do	Oolitic dolomite		2.75	1.1	5.1				15.7	10				
Do	Springdale Township.	Prosp	1917	11971	do	Dolomite		2.76	.7	3.7				16.0	12				
Dodge	Hubbard Township.	Comm	1913	6500	do	do		2.75	.6	4.5				14.3	8				
Do	Knowles	Local	1921	18746	do	do		2.70	.8	5.2				13.7	7				
Do	Nasbro	do	1921	18744	do	do		2.75	.6	3.8				14.7	8				
Do	Portland Township.	Comm	1905	1397	do	Quartzite		2.70	.1	2.8				19.0	19				
Do	Richwood	do	1912	5790	do	Argillaceous dolomite.		2.75	.9	4.4				16.1	11				
Door	Sturgeon Bay	Local	1911	5046	do	Dolomite		2.85	.2	4.5				14.2	12				
Do	do	Comm	1934	40109	do	do					30.1	A							
Eau Claire	Eau Claire	do	1923	23633	Gravel	RGD	2			7.1		A							
Do	do	do	1934	40107	do	RQSG					29.1	A							
Do	do	do	1942	58549	do	QSyBS		2.71	.9		22.1	B							
Do	do	do	1943	61698	do	BGQz		2.68	1.0		23.0	B							
Florence	Commonwealth	Local	1912	5795	Stone	Ferruginous slate		2.70	2.0	17.1									

Fond du Lac	Hamilton	do	1912	6202	do	Dolomite		2.60	1.0	3.6									
Do	do	Comm	1913	6807	do	do		2.80	.6	5.2				13.4	6				
Do	Marblehead	do	1912	6203	do	do		2.80	.3	3.4				14.4	7				
Do	do	do	1913	6479	do	do		2.80	.2	4.6				15.2	10				
Do	do	do	1913	6752	do	do		2.85	.2	3.7				13.8	7				
Do	Peebles	Prosp	1911	5523	do	do		2.85	.3	5.4			32,600	13.7	8				
Grant	Cassville	do	1912	6230	do	do		2.70	.8	9.6				12.3	4				
Do	Hazel Green	do	1912	6222	do	Siliceous dolomite		2.65	1.1	7.1				15.2	5				
Do	Lancaster	Local	1912	6212	do	Limestone		2.60	1.0	4.1				14.8	8				
Green	Brodhead	Prosp	1912	6221	do	Argillaceous dolomite.		2.60	3.1	8.8				9.3	3				
Do	do	Local	1912	6227	do	Dolomite		2.60	2.9	11.1				14.1	4				
Do	Martintown	Prosp	1912	6225	do	Siliceous dolomite		2.60	2.1	11.4				16.2	5				
Do	Monroe	Local	1912	6215	do	Argillaceous dolomite.		2.75	1.0	22.5									
Do	New Glarus	do	1934	40112	do	Argillaceous limestone.					39.4	A							
Greenlake	Berlin	do	1902	667	do	Rhyolite		2.65	.0	2.0									
Do	do	do	1902	668	do	do		2.65	.0	4.0									
Do	do	Comm	1905	1427	do	do		2.65	.1	1.9				19.3	23				
Do	do	do	1916	9999	do	do		2.65	.1	1.9				19.0	25				
Do	Utley	do	1902	695	do	do		2.60	.0	5.0									
Do	do	do	1902	696	do	do		2.65	.0	5.6									
Do	do	do	1903	747	do	Dolomite		2.70	.5	4.1									
Do	do	do	1905	1434	do	Rhyolite		2.65	.0	2.5				18.9	19				
Do	do	do	1922	22530	do	do		2.64	.0	2.8				18.7	13				
Iowa	Blue Mounds	Prosp	1912	6207	do	Argillaceous dolomite.		2.60	2.9	11.3				10.7	4				
Do	do	Local	1912	6224	do	Chert		2.40	2.1	3.3									
Do	Mineral Point	do	1912	6211	do	Limestone		2.65	1.8	3.9				14.5	11				
Do	do	do	1912	6213	do	do		2.70	.4	5.2				15.7	6				
Jefferson	Fort Atkinson	do	1912	6160	do	Dolomite		2.75	1.0	8.6				12.8	5				
Kewaunee	Kewaunee	Comm	1912	6244	do	Dolomite marble		2.85	.1	3.8				12.8	6				
Do	do	do	1921	18743	do	Dolomite		2.81	.4	4.3				16.0	8				
La Crosse	La Crosse	Prosp	1908	2953	do	Chert		2.60	.4					19.7	26				
Do	do	do	1908	2954	do	Dolomite		2.75	.5					15.0	9				
Do	do	do	1908	2955	do	Limestone		2.75	.6					17.3	6				
Do	do	do	1908	2956	do	Dolomite		2.80	.6					14.8	7				
Do	do	do	1908	2957	do	Biotite granite		2.65	.1					18.8	17				
Do	do	Local	1934	40111	do	Dolomite					34.4	A							
Lafayette	Benton	do	1912	6210	do	do		2.70	1.3	12.9				12.8	4				
Do	Darlington	Prosp	1912	6257	do	Siliceous dolomite.		2.70	1.1	5.5				14.5	5				
Manitowoc	Maribel	do	1915	9674	do	Dolomite		2.80	.2	5.2				13.7	7				
Do	Quarry	Comm	1913	6569	do	do		2.80	.3	5.5				11.1	6				
Marinette	Amberg	do	1909	3448	do	Biotite granite		2.65	.2	2.4			19,850	18.8	13				
Marquette	Buffalo	Prosp	1916	10168	do	Syenite [6]		2.68	.1	2.2				19.3	30				
Do	Liberty Bluff	do	1921	18713	do	Sandstone		2.51	.9	17.0				18.7	7				
Do	do	do	1921	19597	do	do							13,400						
Do	Montello	Comm	1905	1442	do	Granite		2.65	.1	2.1									
Do	do	do	1919	14676	do	do		2.63	.2	2.4				18.7	16				
Do	Westfield	do	1922	21377	do	Sandstone		2.45	1.6	12.1			29,190	15.0	4				
Milwaukee	Granville	Local	1904	1124	do	Dolomite		2.80	.3	5.7				16.8	4				
Do	do	Prosp	1905	1284	do	do		2.80	.3	4.7				15.2	9				
Do	Milwaukee	Local	1918	12616	do	Argillaceous dolomite.		2.58	1.5	6.4				12.0	7				
Do	do	do	1918	12617	do	do		2.62	2.0	4.5				14.3	10				
Do	do	do	1918	12618	do	Dolomite		2.80	.1	6.5				16.0	6				
Do	do	do	1918	12619	do	Argillaceous dolomite.		2.68	1.6	3.7				14.3	10				
Do	do	Comm	1918	13537	do	Limestone		2.55	1.3	6.0				15.3	9				
Do	North Milwaukee.	Prosp	1905	1285	do	Dolomite		2.66	2.5	3.9				8.2	6				
Do	Wauwatosa	Local	1905	1283	do	do		2.55	1.8	3.3				13.4	8				
Do	do	Comm	1916	10014	do	Argillaceous dolomite.		2.70	1.3	3.7				14.7	8				
Do	do	Prosp	1916	11129	do	do		2.70	1.9	3.8			16,700	15.3	11				
Do	do	do	1917	11367	do	Argillaceous limestone.		2.62	2.0	2.1			20,370	14.0	8				
Do	do	Comm	1918	12315	do	Dolomite		2.66	1.7	4.0				13.3	7				
Monroe	Wells Township	Prosp	1916	10986	do	Calcareous sandstone.		2.61	1.7	4.8				18.0	5				
Outagamie	Appleton	Local	1912	6236	do	Dolomite		2.80	.3	3.4				16.5	10				
Do	Black Creek	do	1916	9970	do	do		2.85	.3	4.6				14.7	9				
Do	do	do	1916	9971	do	do		2.85	.3	4.1				15.3	8				
Do	Kaukauna	do	1912	6248	do	do		2.80	.6	4.1									

[6] Altered.

Table 10.—Results of tests of coarse aggregate to Jan. 1, 1951—Continued

WISCONSIN—Continued

Location and type of source			Year sampled	Laboratory No.	Kind of material	Name or lithological composition	Max. size of gravel	Bulk specific gravity	Absorption	Abrasive loss			Crushing strength	Hardness	Toughness	Weight of compacted aggregate		Soundness	
County	Nearest town	Type								Deval	Los Angeles	Grading				Test result	Size tested	Test result	Size tested
							In.		*Pct.*	*Pct.*	*Pct.*		*P.s.i.*			*Lb./cu.ft.*	*In.*	*Pct.*	*In.*
Ozaukee	Belgium	Comm	1909	3765	Stone	Dolomite		2.80	0.4	5.4				15.6	9				
Do	do	do	1910	4718	do	do		2.80	.4	5.3				14.2	8				
Do	do	Prosp	1916	10022	do	Argillaceous dolomite.		2.81	.7	7.4				14.3	8				
Do	Grafton	Comm	1912	6280	do	Dolomite		2.65	.8	6.3				11.1	5				
Do	Mequon	Local	1917	11625	do	do		2.78	.6	3.4			22,750	12.3	7				
Do	do	do	1917	11638	do	do		2.86	.6	5.6				15.0	7				
Pierce	Prescott	Prosp	1912	6219	do	do		2.80	.6	5.4				15.2	7				
Polk	Dresser	Comm	1914	7395	do	Basalt [6]		2.95	.1	2.2				18.8	19				
Do	do	do	1915	8288	do	Diabase [6]		2.95	.5	1.8				18.7	22				
Do	do	do	1922	22237	do	do.[6]		2.96	.0					18.3	31				
Do	do	do	1934	40110	do	Basalt					10.5	B							
Do	do	do	1942	58190	do	Diabase					9.7	B							
Do	do	do	1942	59105	do	do					9.1	C							
Do	do	do	1942	59106	do	do		2.95					50,800		15				
Portage	Stevens Point	do	1912	5829	do	Sandstone		2.50	.4	5.2			19,750	18.5	12				
Do	do	do	1912	5840	do	do		2.55	.5	3.6				18.8	13				
Do	do	do	1921	20916	do	do		2.67	1.4	4.3			27,720	18.7	10				
Racine	Burlington	do	1930	33184	do	Dolomite		2.67	.9	5.4									
Do	do	do	1930	34731	do	do												2.8	1½–#4
Do	Ives	do	1912	5799	do	do		2.70	.3	5.2				13.7	7				
Do	do	do	1913	6503	do	do		2.60	.7	5.6									
Do	do	do	1914	7548	do	do		2.65	.4	6.9				14.0	8				
Do	do	do	1914	7549	do	do		2.65	.4	7.1				11.0	6				
Do	do	do	1914	7624	do	do		2.70	.4	7.3				14.0	6				
Do	do	do	1914	7743	do	do		2.65	.4	6.0				13.8	8				
Do	do	do	1914	8039	do	do		2.70	.3	6.9				14.9	7				
Do	Racine	do	1916	10028	do	do		2.70	.6	7.1				13.3	6				
Rock	Beloit	Prosp	1912	6214	do	Argillaceous dolomite.		2.65	2.3	8.9				14.2	5				
Do	do	Local	1912	6217	do	do		2.55	3.7	8.6				15.3	7				
Do	do	do	1912	6226	do	Siliceous dolomite.		2.70	1.4	8.1				10.5	5				
Do	do	do	1912	6229	do	Dolomite		2.70	1.7	8.1				9.4	6				
Do	Clinton	Prosp	1907	2200	do	Dolomitic limestone.		2.75	1.0	7.4				12.5	5				
Do	do	Local	1907	2201	do	do		2.65	1.8	8.4				11.3	4				
Do	do	do	1907	2202	do	do		2.80	1.1	5.8				14.0	7				
Do	Fulton	do	1913	6535	do	Argillaceous dolomite.		2.70	1.4	5.6				12.0	7				
Do	Janesville	do	1912	6218	do	do		2.75	.1	4.3				14.5	6				
Do	do	do	1912	6220	do	Dolomite		2.70	1.3	2.3				15.0	8				
Do	do	Comm	1924	26315	Gravel	Do C	2			10.0		A							
Sauk	Ableman	do	1905	1437	Stone	Quartzite		2.65	.1	3.4				18.0					
Do	do	do	1913	6497	do	Sandstone		2.45	.5	10.7				15.7	3				
Do	do	do	1913	6498	do	do		2.45	.5	3.4				18.4	9				
Do	do	do	1914	8259	do	do		2.50	.6	2.7				19.0	10				
Do	do	do	1922	21367	do	do		2.35	2.1	20.2			15,280	13.3	5				
Do	do	do	1931	33271	do	Quartzite		2.64	.2	2.6				19.3	12				
Sheboygan	Elkhart Lake	do	1930	33183	Gravel	Dolomite		2.76	.7	3.4		A							
Do	do	do	1931	34730	do	do												6.5	1½–#4
Do	Sheboygan	do	1912	6247	Stone	Dolomitic marble		2.75	.4	4.8				12.7	5				
Do	do	Local	1912	6249	do	Dolomite		2.75	.3	3.8				13.3	7				
Taylor	Hammel Township.	do	1947	72591	Gravel	RDiGQB	1				14.3	B							
Do	Medford	Comm	1947	73372	do	GB(QSDi)	1½				21.3	A						3.7	1½–⅜
Do	Moliter Township.	Prosp	1947	72580	do	BGSyGnSQ	1½				16.4	A							
Do	Perkinstown	do	1947	72592	do	GRAnBS					16.9	A							
Walworth	Whitewater	Local	1912	6159	Stone	Dolomite		2.70	1.4	6.4				13.3	7				
Washington	Jackson	Prosp	1904	1145	do	do		2.80	.5	4.9				16.0	5				
Do	do	do	1909	3491	do	do		2.60	2.1	6.2				12.3	4				
Waukesha	Lannon	Local	1909	3509	do	do		2.80	.5	3.4				15.9	13				
Do	do	Comm	1909	3800	do	do		2.75	.6	3.2				16.1	13				
Do	do	Local	1912	6171	do	do		2.70	1.2	6.7				13.3	9				
Do	do	Comm	1912	6173	do	do		2.80	.5	3.5				15.6	10				
Do	do	do	1915	8656	do	do		2.80	.5	3.6			23,020	15.4	10				

Do	Pewaukee	Local	1912	6170	do	do		2.75	1.1	4.1				15.3	13				
Do	Waukesha	Comm	1912	6172	do	do		2.75	.9	3.6				15.0	7				
Do	do	do	1934	40108	do	do					25.3	A							
Waupaca	Waupaca	do	1905	1408	do	Granite		2.60	1.2	1.4				18.9	29				
Do	do	do	1908	3011	do	Biotite granite		2.70	.1	5.3				19.0	9				
Do	do	do	1914	8018	do	do		2.70	.2	4.1				18.7	5				
Waushara	Lohrville	do	1905	1432	do	Granite		2.65	.1	2.7				18.4	21				
Do	do	do	1906	1540	do	do				2.4									
Do	do	do	1906	1574	do	do		2.70	.2	2.0				19.0					
Do	Redgranite	do	1905	1431	do	do		2.65	.1	1.1				18.8	25				
Do	do	do	1911	5586	do	do							33,880	19.0	14				
Do	do	do	1917	11447	do	do		2.64	.2	1.4				19.3	14				
Do	do	do	1924	24692	do	Porphyritic granite.		2.63	.1	2.0			45,450	18.7	16				
Do	Spring Lake	do	1905	1435	do	Granite		2.65	.2	1.5				18.9	23				
Winnebago	Neenah	Local	1913	6573	do	Dolomite		2.70	1.6	4.1				14.3	9				
Do	Omro	Prosp	1912	6246	do	do		2.75	.1	5.6				16.3	7				
Do	Oshkosh	Local	1912	6237	do	Sandstone		2.80	.4	3.8				15.5	8				
Do	do	Comm	1942	58191	do	Dolomite					28.2	B							
Do	Poygan Township.	Local	1913	6487	do	do		2.80	.4	3.4				14.7	11				
Wood	Rudolph	Comm	1915	8920	do	Sandstone		2.50	.7	3.4				18.7	5				
Do	Wisconsin Rapids.	do	1916	10159	do	do		2.45	1.2	3.3				18.3	5				

WYOMING

Big Horn	Greybull	Local	1947	73674	Stone	Volcanic sandstone.		1.92	13.0		98.0	A	2,600		1			100.0	1½–#4
Crook	Sundance	do	1947	73769	do	Limestone		2.70	.3		32.0	A	28,300		3			1.3	1½–#4
Park	Cody	do	1924	26365	do	Dolomite		2.60	1.3	6.4				15.3	4				
Sheridan	Dayton	Prosp	1945	67485	do	Granite												2.6	1½–#4
Do	Dayton (Tongue River).	Local	1945	67487	Gravel	QzLG	1½											16.4	1½–#4
Do	Fort MacKenzie	Prosp	1907	2209	Stone	Calcareous sandstone.		2.70	.9	2.7				15.3	10				
Do	do	do	1907	2380	do	do		2.65	1.1	4.2				15.3	6				
Do	Sheridan	do	1912	6452	do	Ferruginous sandstone.		2.40	5.0	14.4				5.0	9				
Teton	Elk (Lava Creek).	do	1944	65948	Gravel	RQFe	2½											2.0	2½–#4
Do	Elk (Pilgrim Creek).	do	1944	65950	do	RQz	2											3.3	2½–#4
Do	Elk (Snake River).	do	1944	65946	do	R(GFe)	3											20.0	3–#4
Do	Hoback	do	1945	67477	do	LQzS	1½											.9	1½–#4
Do	Moran (Snake River).	Local	1945	67483	do	QSFeRB	1½											16.0	1½–#4
Washakie	Ten Sleep	Prosp	1945	67470	do	GDi	1½											1.4	1½–#4
	Yellowstone National Park.	Local	1947	74156	do	RLSG	2½	2.43	2.5		34.3	D						13.5	1½–#4
	do	do	1947	74157	do	GRSGn(Q)	3	2.56	1.3		26.3	D						4.9	1–#4
	do	do	1947	74158	do	ORS	1½	2.18	3.8		24.3	D						7.4	1½–#4
	do	do	1947	74159	do	OR	1	2.26	3.0		26.3	D						13.2	1–#4
	do	Prosp	1947	74160	Stone	Porphyritic syenite.		2.60	1.3		15.7	A	42,000		18			.8	1½–#4

[6] Altered.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951

ALABAMA

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.			Pct.	Pct.		Pct.	Sieve No.
Calhoun	Anniston	Comm	1921	18007	Bfs			0	1	16	60	88	96	2.61		65	79	Tens		
Do	Bynum	Prosp	1918	12716	QF			0	0	6	50	88	98	2.42		92		do		
Coffee	Elba	Local	1918	12997	Quartz			0	1	2	24	82	98	2.07		106	101	do		
Colbert	Sheffield	Comm	1946	71125	CQ	2.58	1.4	2	14	26	46	83	98	2.69	Low	91	98	Comp	2.1	4–50
Dallas	Selma (Alabama River).	do	1923	22733	Quartz			0	9	21	60	91	97	2.78		103	97	Tens		
Elmore	Jackson's Lake	do	1920	17648	Q(MF)			0	11	22	53	88	98	2.72		137	125	do		
Do	do	do	1923	23070	Q(M)			0	10	19	56	94	100	2.79		112	113	do		
Do	do	do	1924	24549	Q(MF)			0	0	8	50	93	99	2.50		106	101	do		
Do	do	do	1924	24804	QF			1	7	20	69	97	100	2.94		120	119	do		
Do	do	do	1924	24845				1	7	18	51	90	98	2.65		128	119	do		
Do	do	do	1924	24986	Q(MC)			0	0	8	56	93	99	2.56						
Do	do	do	1924	25050	Q(MF)			1	6	22	62	93	99	2.83		130	134	Tens		
Do	do	do	1924	25051	Q(MF)			1	7	19	64	96	99	2.86		111	128	do		
Do	do	do	1937	44464	QS	2.59	.8	2	8	21	47	85	96	2.59						
Escambia	Flomaton	do	1920	15483	Q(M)			0	1	2	5	43	98	1.49		85	82	Tens		
Do	do	do	1923	24217	Quartz			1	9	19	51	87	99	2.56		107	105	do		
Do	do	do	1924	25169	Q(C)			2	13	27	61	91	99	2.93		99	99	do		
Do	do	do	1924	25170	Quartz			1	10	24	59	90	98	2.82	Low	119	125	do		
Do	do	do	1929	31311				0	3	21	43	74	94	2.35		118	117	do		
Etowah	Gadsden (Black Creek).	Local	1918	13791	Quartz			0	0	0	1	24	74	1.09		50	71	do		
Franklin	Spruce Pine	Comm	1922	22310	Q(CF)			1	6	13	32	71	92	2.15	Low	136	112	do		
Do	do	do	1922	22677	Q(CM)			1	9	17	35	67	93	2.22	do	95	101	do		
Do	do	do	1923	23490	Q(CM)			7	31	47	70	88	96	3.39	do	168	160	do		
Do	do	do	1923	24462	Q(C)			5	22	34	58	87	95	3.01	do	136	138	do		
Do	do	do	1925	24992	Q(MF)			2	13	22	39	68	93	2.37	do	122	125	do		
Do	do	do	1927	29237	QC			8	31	51	75	84	94	3.43					1.3	4–50
Lauderdale	Killen	Local	1918	13497	QCS			1	13	34	80	92	97	3.17		93	98	Tens		
Macon	Chehaw	Comm	1919	15345	QF			0	8	24	70	95	99	2.96		110	107	do		
Do	do	do	1923	23101	Q(FM)			2	7	17	63	93	99	2.81		110	120	do		
Do	do	do	1924	24997	Q(FM)			1	7	12	60	90	99	2.69		116	113	do		
Marshall	Guntersville (Tennessee River).	Prosp	1936	43016	QC(M)		1.6	0	8	25	40	79	94	2.46						
Montgomery.	Cooks	Comm	1924	24996	Q(F)			1	9	23	65	96	100	2.94	Low	112	118	Tens		
Do	Hunter	do	1927	29235	Q(CMF)			5	18	35	77	95	99	3.29					.5	4–50
Do	Montgomery	do	1923	23622	Q(C)			3	22	41	77	96	99	3.38	Low	136	120	Tens		
Do	do	do	1923	23756	Quartz			0	5	16	60	95	98	2.74		119		do		
Do	do	do	1923	23825	Q(FCM)			0	4	15	66	96	99	2.80	Low	97	108	do		
Do	do	do	1923	23830	Q(M)			3	17	31	73	95	99	3.18	do	114	124	do		
Do	do	do	1924	24749	QC			1	12	25	63	94	99	2.94	do	114	128	do		
Do	do	do	1924	24842	Q(FM)			1	11	27	72	95	98	3.04	do	126	112	do		
Do	do	do	1924	24865	QC			2	15	33	76	96	100	3.22	do	119	127	do		
Do	do	do	1924	24948	Q(FM)			0	3	11	53	91	98	2.56	do	98	109	do		
Do	do	do	1924	24985	Q(MC)			2	17	39	79	98	100	3.35	do	140	117	do		
Do	do	do	1924	25085	Q(C)			2	15	39	83	97	99	3.35	do	132	131	do		
Do	do	do	1924	25120				1	9	21	62	95	99	2.87	do	127	131	do		
Do	do	do	1924	26061	QC			2	15	33	69	96	99	3.14	do	130	130	do		
Do	do	do	1925	26644	Q(MF)			0	4	13	60	94	99	2.70	do	99	91	do		
Do	do	do	1925	26741	Q(MF)			0	3	12	68	96	99	2.78	do	107	94	do		
Do	do	do	1927	29234	QC			12	30	46	75	96	99	3.58					.5	4–50
Do	do	do	1943	61816	Q(FM)	2.63	.5	2	9	15	38	90	98	2.52	Low	104	96	Comp	3.5	4–50
Do	do	do	1944	66842	Q(Qz)	2.64	.3	3	15	25	52	91	98	2.84					2.0	4–50
Morgan	Decatur	do	1949	76704	C(QM)	2.62	1.1	1	10	19	40	86	99	2.55	Low	88	112	Comp	1.9	4–50
Do	do	do	1949	77032	C(QM)	2.57	1.4	0	5	20	44	89	99	2.57	do	84	92	do		
Tuscaloosa	Tuscaloosa (Black Warrior River).	do	1924	24999	Q(C)			1	11	23	61	93	99	2.88	do	137	147	Tens		
Do	do	do	1924	25001	QC			1	11	24	62	94	99	2.91	do	128	121	do		
Do	do	do	1924	25328	Q(MC)			1	9	21	59	93	100	2.83	do	135	119	do		
Do	do	do	1927	29236	QC			0	1	4	28	83	97	2.13					2.5	4–50

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Apache	Springerville (Little Colorado River).	Local	1926	28178	QDBR			0	0	15	59	89	98	2.61	Low	73	85	Tens	
Graham	Cottonwood Wash	do	1923	24193	QF(M)			6	12	21	49	81	96	2.65	do	105	84	do	
Maricopa	Phoenix (Salt River).	Prosp	1918	13563	QFMa			9	20	34	68	84	94	3.09		106	115	do	
Do	Tempe	Comm	1921	19588	FQG			12	31	53	87	95	98	3.76		133	116	do	
Navajo	Heber Wash	Prosp	1924	25368	Quartz			6	34	54	71	82	91	3.38	Low	134	123	do	
Do	Phoenix Park Wash	do	1924	25370	QC			0	4	10	48	88	97	2.47	do	95	94	do	
Do	Pierce Wash	do	1924	25369	QFC			2	16	30	62	89	97	2.96	do	121	120	do	
Do	Winslow	Local	1922	22513	QGRLM			3	20	34	61	86	98	3.02	do				
Do	do	do	1922	22514	QGLF			7	16	24	47	77	95	2.66	do	117	112	Tens	

ARKANSAS

Baxter	Cotter (White River).	Local	1920	17695	CQ			3	19	25	36	82	96	2.61	High	103	93	Tens	
Do	do	do	1920	17698	CQ			2	13	15	27	82	98	2.37		97	94	do	
Do	Henderson	do	1934	40220	CQS			0	19	45	57	78	98	2.97	Low	125	126	do	
Benton	Rogers	do	1922	21087	CQS			9	49	68	86	95	97	4.04	High	80	77	do	
Clark	Arkadelphia	Comm	1921	19907	Quartz			5	26	39	60	83	90	3.03	Low	127	127	do	
Do	do	Local	1921	19908	do			5	32	45	56	65	73	2.76	High	81	78	do	
Do	do	do	1921	19984				4	17	23	39	83	97	2.63	Low	142		do	
Do	do	Prosp	1921	19985				5	23	33	47	69	86	2.63	do	119	95	do	
Columbia	Magnolia	Local	1922	21378	Quartz			0	0	0	7	59	92	1.58	do	96	83	do	
Craighead	Bone	do	1921	17909	do			10	15	21	39	68	87	2.40	High	94	100	do	
Do	Jonesboro	Comm	1921	19698	QC			4	24	38	58	73	83	2.80	do	69	58	do	
Crawford	Van Buren (Arkansas River).	do	1924	26151	QC			0	6	18	54	87	98	2.63	Low	100	109	do	
Cross	Wynne	Prosp	1921	18860	Quartz			3	23	45	76	92	93	3.32	do	106	90	do	
Do	do	Comm	1928	30234	QC			6	18	31	49	87	97	2.88	do	105	93	do	
Fulton	Salem	Prosp	1924	24949	QC			3	16	26	39	79	98	2.61	do	124	120	do	
Do	do	Local	1924	26027	Quartz			5	35	56	74	87	92	3.49	High	89	89	do	
Do	do	Prosp	1925	26628	do			4	24	35	44	70	89	2.66	Low	108	91	do	
Garland	Crystal Springs	Local	1922	22565	QS			0	2	3	31	89	98	2.23	do	69	77	do	
Do	do	do	1924	26285	QSIS			1	3	7	30	85	97	2.23	do	65	75	do	
Do	do	Prosp	1924	26321	Quartz			0	0	1	13	63	86	1.63	do	80	92	do	
Do	Hot Springs	Local	1925	26374	do			8	40	56	71	83	89	3.47	do	98	108	do	
Do	do	do	1925	26637	QC			1	5	12	47	80	97	2.42	do	94	82	do	
Do	Hot Springs (Cedar Creek).	do	1925	26721	QSCSc			10	34	55	79	91	97	3.66	do	118	103	do	
Do	Hot Springs (Saline River).	do	1924	24682	CQ			11	62	83	93	97	98	4.44	High	147	128	do	
Do	do	Prosp	1924	24811	QSC			8	38	61	85	92	95	3.79	do	150	126	do	
Do	do	do	1924	24813	QSCSh			4	32	63	95	98	99	3.91	Low	138	133	do	
Do	do	Local	1924	25910	CQ			19	46	56	86	95	98	4.00	do	107	109	do	
Do	Whittington (Saline River).	Prosp	1924	24815	QCSh			5	33	58	78	88	95	3.57	do	141	133	do	
Hot Spring	Malvern	Comm	1931	33929	QCSSh	2.64	1.0	8	25	37	49	83	97	2.97	High	119	126	do	
Do	Remmel Dam	Prosp	1934	40195	QCSSh			0	7	25	43	80	98	2.53	Low	111	109	do	
Independence.	Batesville	Comm	1926	28210	QC			4	8	10	14	58	96	1.90	do	64	75	do	
Do	Batesville (White River).	Local	1926	28604	QC			3	15	20	26	70	96	2.30	do	100	97	do	
Do	do	do	1926	28687	QC			1	3	4	5	63	97	1.73	do	57	67	do	
Do	Cushman	Prosp	1922	21609	Chert			8	48	65	75	78	80	3.54	High	104	99	do	
Do	do	do	1922	21694	CQ			6	41	57	71	88	94	3.57	do	142	117	do	
Do	do	Local	1925	26686	CQ			9	23	33	44	77	93	2.79	Low	103	91	do	
Do	Newark	Comm	1921	20411	Q(C)			3	4	5	13	69	96	1.90	do	74	85	do	
Izard	Melbourne	Prosp	1924	25129	Q(C)			4	5	6	12	58	92	1.77	do	78	76	do	
Do	Sage	Local	1924	26339	QC			5	30	50	70	84	89	3.28	do	101	85	do	
Jackson	Newport (White River).	Comm	1924	25222	QC			3	13	19	37	82	99	2.53	do	116	100	do	
Do	do	do	1925	26391	QC			1	4	13	53	81	97	2.49	do	103	93	do	
Do	do	do	1926	28574	QC			1	5	9	33	79	96	2.23	High	75	91	do	
Do	do	do	1926	28629	QC			2	6	8	17	76	99	2.08	Low	74	79	do	
Jefferson	Pine Bluff (Arkansas River).	do	1920	16651	Q(C)			2	5	12	40	77	96	2.32		115	103	do	
Do	do	do	1921	18657	QCSMa			7	30	39	65	93	98	3.32	High	134	112	do	
Lafayette	Lewisville	do	1926	28635	QC			5	22	38	62	90	97	3.14	Low	108	98	do	
Do	do	do	1926	28636	QC			4	19	36	67	90	96	3.12	do	115	104	do	
Do	do	do	1926	28684	QC			5	28	43	58	82	96	3.12	High	121	119	do	
Do	do	do	1928	30207	QC			8	30	49	67	85	97	3.36	Low	147	137	do	

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

ARKANSAS—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Lawrence	Black Rock (Black River).	Local	1921	19699	QC			3	23	36	58	80	90	2.90	Low	125	105	Tens		
Do	do	Comm	1924	24494	QC			1	6	11	32	87	99	2.36	do	114	101	do		
Lincoln	Star City	Prosp	1920	17659	Quartz			5	37	53	71	88	96	3.48		169	141	do		
Little River	Wilton (Little River).	Local	1922	22698	do			5	35	46	63	86	95	3.30	High	112	106	do		
Madison	Kingston	Prosp	1926	28119	Q(Sh)			1	3	5	17	80	97	2.03	Low	69	73	do		
Miller	Garland	do	1926	28216	QC			6	30	48	68	88	97	3.37	do	120	117	do		
Mississippi	Golden Lake Mississippi River).	Comm	1925	27341	Q(CS)			1	4	13	69	91	96	2.74	do	133	104	do		
Do	Osceola (Mississippi River).	do	1924	25347	QC			2	11	28	63	91	98	2.93	High	117	104	do		
Do	Wilson (Mississippi River).	do	1921	19648	Quartz			2	5	7	46	94	99	2.53	do	85	86	do		
Do	do	do	1921	19666	do			2	5	10	57	91	96	2.61	do	73	80	do		
Do	do	do	1921	19968	QC			2	7	17	66	91	98	2.81	do	110	103	do		
Do	do	do	1921	19969	QC			1	3	11	48	76	96	2.35	do	105	99	do		
Do	do	do	1921	19970	QC			1	6	18	74	96	98	2.93	do	109	103	do		
Do	do	do	1921	20113	Q(CF)			2	5	13	64	92	97	2.73	do	127	110	do		
Do	do	do	1921	20940	QCSGMa			5	15	31	78	96	99	3.24	do	114	109	do		
Do	do	do	1922	21247	Q(C)			15	23	35	73	94	99	3.39	do	119	94	do		
Do	do	do	1924	25343				2	14	36	83	96	99	3.30	do	108	110	do		
Montgomery	Joplin	Prosp	1924	26334	Quartz			2	21	37	67	91	95	3.13	Low	91	103	do		
Do	Mount Ida (Ouachita River).	Local	1926	28560	CQ			5	22	38	64	86	96	3.11	do	121	115	do		
Newton	Jasper (Buffalo River).	do	1924	26159	SQ			3	21	39	65	90	97	3.15	do	104	117	do		
Ouachita	Camden (Ouachita River).	do	1925	28014	Quartz			3	30	40	49	78	94	2.94	do	124	108	do		
Phillips	Helena (Mississippi River).	do	1919	14332	do			4	27	45	81	97	99	3.53		81	82	do		
Do	do	Comm	1920	16252	QC			1	11	19	44	88	97	2.60	High	94	97	do		
Do	do	do	1920	16361	Quartz			3	19	29	65	96	99	3.11		108	94	do		
Do	do	do	1920	16366	Q(CMa)			0	0	0	1	18	95	1.14		84	72	do		
Do	do	do	1920	16951	Q(CSMa)			0	1	5	30	80	99	2.15		106	92	do		
Do	do	do	1920	16952	Quartz			3	17	29	56	86	96	2.87		105	106	do		
Do	do	do	1920	16960	do			1	9	19	55	90	97	2.71		104	96	do		
Do	do	do	1921	19001	do			1	8	15	36	89	98	2.47	High	98	82	do		
Do	do	do	1921	19555	Q(C)			0	0	2	23	77	97	1.99	do	79	80	do		
Do	do	do	1921	19638	Q(CM)			0	0	0	19	77	96	1.92	do	80	75	do		
Do	do	do	1921	19665	Quartz			0	1	4	31	88	97	2.21	do	89	82	do		
Pike	Antoine	do	1929	31640	CQ	2.64		3	15	35	57	81	97	2.88	Low	143	116	do		
Do	Glenwood (Caddo River).	Prosp	1923	23146	CQ			11	35	50	71	85	91	3.43	High	142	136	do		
Do	do	do	1924	24816	CQ			12	58	79	90	94	97	4.30	Low	178	146	do		
Pope	Dover (Piney Creek).	Local	1924	26153	Q(MF)			0	0	2	10	65	95	1.72	High	55	69	do		
Do	Russellville (Arkansas River).	Prosp	1924	25176				11	16	20	32	70	94	2.43	Low	100	91	do		
Pulaski	Little Rock	Comm	1920	17495	Q(FMa)			1	5	11	30	70	98	2.15		93	93	do		
Do	do	do	1921	18940	Quartz			6	7	12	36	65	94	2.20		90	94	do		
Do	do	do	1921	20441	do			2	5	9	17	59	92	1.84	Low	96	75	do		
Do	do	do	1925	26690	do			2	4	9	34	74	96	2.19	do	84	80	do		
Do	do	do	1925	26720	QC			3	7	16	48	80	96	2.50	do	90	84	do		
Do	Little Rock (Arkansas River).	do	1924	26250	Q(C)			2	5	12	43	72	94	2.28	do	102	84	do		
Do	do	do	1925	26622	QC			2	4	13	44	76	95	2.34	do	93	98	do		
Do	do	do	1925	26819	QC			1	4	11	42	79	98	2.35	do	109	96	do		
Saint Francis	Crow Creek	Local	1921	17861	Q(FM)			0	0	2	8	35	88	1.33		76	79	do		
Do	Forrest City	Comm	1930	32462	QC	2.67	.3	4	24	45	69	91	97	3.30	Low	121	105	do		
Do	do	do	1930	33121	QC	2.64		5	17	34	56	90	94	2.96	do	122	108	do		

Saline	Alum (Williams Creek).	Prosp.	1924	24809	QS			4	28	53	81	90	92	3.48	do	124	109	do		
Do	Benton	Comm.	1922	21052	Quartz			2	17	35	67	87	92	3.00	do	117	116	do		
Do	do	do	1924	25333	SQCSiSh			3	24	47	78	93	97	3.42	do	118	124	do		
Do	do	do	1924	25334	SQCSiSh			2	21	47	84	94	97	3.45	do	120	122	do		
Do	do	do	1924	25981	Quartz			5	30	53	78	92	95	3.53	do	117	111	do		
Do	Benton (Saline River).	do	1923	24383	QCS			4	21	40	72	87	94	3.16	do	127	112	do		
Do	do	do	1924	24713	QCS			3	21	47	85	94	97	3.47	do	141	127	do		
Do	do	do	1924	25900	QSScSh			6	33	53	77	92	96	3.57	do	114	108	do		
Do	do	do	1924	25945	QS			2	19	39	72	87	93	3.12	do	114	105	do		
Do	do	do	1925	26635	Quartz			5	36	56	77	89	93	3.56	do	102	106	do		
Do	do	do	1925	26722	QSCSc			3	23	48	76	92	97	3.39	do	113	104	do		
Do	do	do	1925	26767	QSSc			3	21	41	66	84	91	3.06	do	104	112	do		
Do	Grape (Saline River).	Prosp.	1924	24807	QCS			5	32	58	83	92	95	3.65	do	138	135	do		
Scott	Parks (Fourche River).	Local	1923	23181	QS			7	16	29	49	67	79	2.47	High	86	84	do		
Do	do	do	1923	23182	QS			3	19	36	59	73	83	2.73	do	112	106	do		
Do	do	do	1923	23183	QS			7	34	49	64	73	80	3.07	do	93	90	do		
Searcy	Marshall (Bear Creek).	Prosp.	1924	24678	QSC			6	9	15	35	83	94	2.42	do	75	75	do		
Do	do	do	1924	25013	QSC			13	35	52	73	93	98	3.64	do	123	126	do		
Do	do	do	1924	25379	QSC			7	23	41	62	88	97	3.18	do	108	106	do		
Do	do	do	1924	26162	QSC			9	24	40	61	87	96	3.17	do	96	109	do		
Do	Snowball (Buffalo River).	do	1924	26050	QC			4	22	33	57	93	97	3.06	do	128	120	do		
Do	do	Local	1924	26164	Q(CS)			8	21	31	47	82	96	2.85	do		100	do		
Do	Snowball (Calf Creek).	Prosp.	1924	24677	QS			2	5	10	25	67	89	1.98	do	83	86	do		
Do	do	Local	1924	26051	SCQ			10	26	45	67	87	97	3.32	do	118	123	do		
Do	do	do	1924	26166	SQ			8	29	48	64	82	94	3.25	do	123	129	do		
Sebastian	Fort Smith	do	1921	20165	Quartz			2	8	12	30	68	95	2.15	do	100	91	do		
Do	do	Comm.	1924	25355	CQ			3	6	13	42	88	97	2.49	Low	103	96	do		
Do	Fort Smith (Arkansas River).	do	1929	32087	Q(FC)			6	16	31	55	88	98	2.94	do	114	107	do		
Sevier	Horatio	do	1925	26909	QCS			2	16	33	60	84	96	2.91	do	108	128	do		
Yell	Dardanelle (Arkansas River).	Local	1924	26152	Q(MF)			0	2	5	20	78	91	1.96	do	97	100	do		
Do	do	do	1925	26851	QC			2	10	17	62	88	97	2.76	do	123	106	do		
Do	do	Comm.	1928	30132	QCF			2	13	30	59	90	98	2.92	do	99	109	do		
Do	do	do	1928	30233	QCF			4	16	37	62	85	95	2.99	do	117	112	do		

CALIFORNIA

Alameda	Radum	Comm.	1943	62157	RG(TQMa)	2.64	0.9	0	12	29	44	69	87	2.41	Low	131	135	Comp.	5.4	4–100
Los Angeles	Azusa	do	1943	61493	RQH(M)	2.62	1.0	0	2	17	45	81	96	2.41	do	116	113	do	3.2	8–100
Do	do	do	1943	62698	RQH(M)	2.60	1.3	0	3	19	45	83	95	2.45	do	133	125	do	4.5	8–100
Do	do	do	1943	63308	QRG M	2.54	1.3	0	3	18	41	82	95	2.39	do	102	96	do		
Do	do	do	1944	64019	QSHMMa	2.62	1.2	0	1	17	33	82	96	2.29	do	95	94	do	1.8	8–100
Do	El Monte	do	1943	61215		2.63	1.0	0	3	19	46	82	94	2.44	do	113	126	do	3.2	8–100
Do	Roscoe	do	1941	55598	GFQ(Gn)	2.63	1.0	3	15	33	58	82	94	2.85	do	105	99	do		
Do	do	do	1941	55599	GFDiQ	2.70	.9	1	4	11	24	46	80	1.66	do	108	102	do		
Mariposa	Yosemite National Park.	Prosp.	1925	27545	QFM			2	14	28	54	71	86	2.55	High	92	77	Tens.		
Do	do	Local	1925	27548	QFM			6	23	47	76	87	94	3.33	do	100	85	do		
Do	do	do	1925	27549	QFM			3	13	27	60	78	91	2.72	Low	114	100	do		
Do	Yosemite National Park (Merced River).	Prosp.	1925	27403	Feldspar	2.67		1	7	18	44	68	87	2.25	High	84	96	do		
Do	do	Local	1925	27543	QFM			0	1	10	72	87	99	2.69	do	76	70	do		
Do	do	Prosp.	1925	27546	QFM			4	32	61	89	95	98	3.79	do	104	108	do		
Do	do	do	1925	27550	QFM			2	16	36	64	81	92	2.91	do	102	95	do		
Do	Yosemite National Park (Mirror Lake).	do	1925	27544	QFM			1	14	40	80	97	100	3.32	do	86	73	do		
San Diego	Otay	Comm.	1942	56170	QQzRFHMa	2.61	.9	1	4	28	58	89	98	2.78	Low	90	98	Comp.		
Do	do	do	1942	56390	QFRMa	2.60	1.2	0	0	16	46	83	99	2.44	do	96	102	do		
Do	do	do	1942	57131	QGFR	2.63	1.3	0	6	28	58	83	95	2.70	do	102	101	do		
San Mateo	South San Francisco.	Local	1942	59024	QR	2.26	7.0	0	0	5	72	98	99	2.74	do	62	79	do	17.2	16–50
Do	do	do	1942	59025	QF	2.57	.7	0	0	2	11	64	97	1.74	do	111	115	do	7.1	16–50
Do	do	do	1942	59026	QRGFQz	2.60	1.6	0	35	69	90	98	100	3.92	do	98	119	do	9.4	4–50
Santa Cruz	Olympia	Comm.	1942	58265		2.57	.7	0	0	0	16	57	97	1.70	do	105	106	do	4.4	16–50
Siskiyou	Mount Hebron	do	1944	66849	BFe(QMa)	2.42	3.9	4	23	40	53	70	90	2.80	High	118	98	do	10.5	4–50
Do	do	do	1945	67366	BFe(QMa)											102	87	Tens.		

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

COLORADO

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			Test result 7-day	Test result 28-day	Method used	Test result	Size tested
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Boulder	Longmont	Prosp	1917	11166	Granite			4	19	43	84	95	99	3.44		109	110	Tens.		
Denver	Denver	Local	1917	11167	do			5	25	45	70	86	95	3.26		131		do		
Douglas	Gann	do	1926	28437	QF			6	36	61	82	92	95	3.72	Low	125	110	do		
Do	Sedalia	do	1926	28436	QF			4	28	53	77	89	95	3.46	do	112	106	do		
El Paso	Monument	do	1926	28657	QF			3	21	41	64	78	90	2.97	do	104	100	do		
Larimer	Fort Collins	Prosp	1916	10307	QFM			1	12	32	77	97	99	3.18		112	113	do		

CONNECTICUT

Fairfield	Norwalk	Comm	1939	46709	QGQzDiM			2	19	39	67	89	98	3.14		99	106	Tens.		
Hartford	Farmington	do	1946	72186	QGGnFScMMa			2	11	28	56	84	98	2.79	Low	72	83	Comp.		
Do	Hartford	do	1940	51491	QGFMaM			3	9	19	50	85	96	2.62	do	85	85	Tens.		
Middlesex	Clinton	Local	1924	24626	QFM			10	17	28	57	82	97	2.91	do	117	91	do		
Do	Saybrook	Comm	1924	26003	Q(MF)			4	10	21	55	86	97	2.73	do	103	96	do		
New Haven	Cheshire	Local	1917	12111	Quartz			7	31	45	68	88	98	3.37		146	119	do		
Do	East River	Prosp	1924	24859	QFM			3	8	18	45	75	93	2.42	Low	85	97	do		
Do	do	do	1924	24860	QFMSGGn			10	25	43	69	87	96	3.30	do	104	100	do		
Do	do	do	1924	25164	QFMGS			5	12	22	50	79	96	2.64	do	83	94	do		
Do	do	do	1924	25165	QFMGS			9	24	41	67	87	97	3.25	do	91	87	do		
Do	do	do	1924	25195	QFM			5	10	20	45	74	93	2.47	do	96	93	do		
Do	do	do	1924	25196	QFM			15	32	47	71	88	96	3.49	do	110	101	do		
Do	Hamden	Comm	1924	24685	QSFM			4	28	51	81	93	96	3.53	do	140	128	do		
Do	do	do	1924	24686	QSFM			1	12	28	70	90	96	2.97	do	158	128	do		
Do	do	do	1924	25936	Quartz			2	13	31	70	87	94	2.97	do	108	102	do		
Do	do	do	1924	25937	do			2	15	41	69	86	93	3.06	do	135	117	do		
Do	do	do	1924	25938	do			2	18	39	71	87	94	3.11	do	130	116	do		
Do	do	do	1924	26031	Q(Di)			1	10	30	71	88	94	2.94	do	95	96	do		
New London	Montville	Local	1924	24917	QFMGGn			3	14	30	65	86	95	2.93	do	83	90	do		
Do	Waterford	Comm	1939	46708	QGFM			2	15	30	64	91	98	3.00		87	86	do		

DELAWARE

Kent	Dover	Local	1931	33299	Quartz			0	2	6	20	69	93	1.90	High	81	84	Tens.		
Do	do	do	1931	33300	do			0	2	6	23	71	95	1.97	Low	91	100	do		
Do	do	do	1931	33901	do			0	2	8	28	77	95	2.10	do	96	108	do		
Do	do	do	1931	33902	do			0	1	5	24	74	96	2.00	do	96	103	do		
Do	do	do	1931	33903	do			0	2	9	31	79	95	2.16	do	109	103	do		
Do	do	do	1931	33904	do			1	4	12	35	76	90	2.18	do	114	115	do		
New Castle	Hockessin	Comm	1924	26054	Q(M)			0	3	12	41	62	88	2.06	do	101	128	do		
Do	Newport	Prosp	1921	18707	Quartz			4	11	29	78	86	89	2.97		161	139	do		
Do	do	do	1921	18708	QCGn			1	11	23	47	69	83	2.34		110	95	do		
Do	do	do	1921	18709	QF			1	2	7	29	82	91	2.12		118	110	do		
Do	Wilmington	Comm	1939	46603	QSM			0	0	6	28	76	96	2.06	Low	96	99	do		
Sussex	Bethany Beach	Local	1925	26903	Q(C)			2	5	14	58	93	100	2.72	do	99	94	do		
Do	Lewes	Comm	1918	13666	Quartz			0	0	1	28	89	99	2.17		90	98	do		
Do	do	do	1918	13667	do			1	8	15	38	79	97	2.38		97	97	do		
Do	do	do	1918	13709	do			2	12	23	51	79	96	2.63		85	98	do		
Do	do	do	1919	14386	Q(F)			0	4	18	79	95	99	2.95		111	101	do		
Do	do	do	1919	14459	Quartz			0	0	2	23	87	99	2.11		96	115	do		
Do	do	do	1919	14499	Q(C)			0	0	2	23	90	100	2.15		108	95	do		
Do	do	do	1919	14500	Q(F)			0	0	2	28	88	100	2.18		104	101	do		
Do	do	do	1919	14501	Quartz			0	0	2	34	89	100	2.25		104	97	do		
Do	do	do	1919	14504	do			0	0	1	27	89	100	2.17		95	96	do		
Do	do	do	1919	14860	do			0	0	2	22	88	98	2.10		64	67	do		

Washington (Potomac River).	Comm.	1918	12790	Quartz			4	17	25	38	61	87	2.32		99		Tens.		
do	do	1918	12932	Q(MF)			1	11	20	39	76	96	2.43		94		do		
do	do	1918	13101	QSCSc			4	16	24	41	66	91	2.42		110	111	do		
do	do	1919	14229	Q(FMMa)			0	0	3	23	68	94	1.88		102	97	do		
do	do	1919	14417	Quartz			0	0	6	32	72	89	1.99		85		do		
do	do	1919	14603	Q(MFMa)			0	0	3	20	59	89	1.71		99	109	do		
do	do	1919	14604	Q(C)			2	12	21	42	72	92	2.41		116	121	do		
do	do	1920	15480	Q(FCMa)			3	16	26	46	74	91	2.56	High	102	88	do		
do	do	1920	16090	Q(MMa)			2	15	26	44	70	92	2.49		130	134	do		
do	do	1920	16092	Q(MMa)			3	22	38	62	84	95	3.04		134	129	do		
do	do	1921	18900	QS			9	37	55	76	90	96	3.63	High	146	116	do		
do	do	1921	20326	QMCMa			3	13	21	45	78	94	2.54	Low	90	91	do		
do	do	1921	20385	Q(MF)			4	18	27	42	68	88	2.47	do	101	104	do		
do	do	1921	20400	QCGS			7	27	42	59	80	89	3.04	do	151	145	do		
do	do	1921	20459	QCSM			8	33	48	71	84	91	3.35	High	125	120	do		
do	do	1921	20460	QM			3	15	26	51	77	92	2.64	Low	106	109	do		
do	do	1921	20461	QCM			5	23	40	64	82	91	3.05	do	117	119	do		
do	do	1921	20499	Q(FM)			5	16	27	51	80	92	2.71	do	111	94	do		
do	do	1921	20500	Q(MFC)			7	22	32	55	80	92	2.88	do	113	97	do		
do	do	1921	20501	Q(MF)			7	20	31	55	83	95	2.91	do	106	93	do		
do	do	1921	20502	Q(FM)			7	25	37	59	85	96	3.09	do	126	98	do		
do	do	1921	20512	Q(CFM)			4	18	29	54	84	96	2.85	do	115	130	do		
do	do	1921	20537	Q(MFMa)			5	16	27	50	81	94	2.73	High	96	128	do		
do	do	1921	20539	Q(MFMa)			6	22	33	57	83	93	2.94	Low	105	121	do		
do	do	1921	20545	Q(FMMa)			4	14	25	50	81	95	2.69	High	99	115	do		
do	do	1921	20546	Q(FMMa)			3	13	24	48	80	95	2.63	do	105	110	do		
do	do	1921	20547	Q(FMMa)			3	14	25	50	81	95	2.68	do	91	109	do		
do	do	1921	20570	Q(MFMa)			5	20	33	53	77	91	2.79	do	107	111	do		
do	do	1921	20571	Q(MFMa)			6	20	31	55	85	97	2.94	Low	96	108	do		
do	do	1921	20593	QCFMMa			2	9	15	35	72	93	2.26	do	91	97	do		
do	do	1921	20594	QCFMMa			9	28	42	64	88	97	3.28	do	99	108	do		
do	do	1921	20595	QFCMaM			5	17	28	52	83	94	2.79	do	85	101	do		
do	do	1921	20596	QCFMaM			6	26	39	59	84	95	3.09	High	99	108	do		
do	do	1921	20838	QGGnMF			4	17	29	55	81	94	2.80	Low	118	119	do		
do	do	1921	20839	QFGM			9	27	36	52	78	93	2.95	do	109	122	do		
do	do	1921	20840	QCGnM			4	17	28	48	78	92	2.67	do	110	118	do		
do	do	1921	20841	QCGM			8	23	32	52	78	93	2.86	High	106	113	do		
do	do	1921	20842	QCGnM			4	16	27	47	80	94	2.68	Low	103	112	do		
do	do	1921	20843	QCM			4	16	25	47	81	94	2.67	do	90	105	do		
do	do	1921	20871	Q(MF)			7	23	33	53	77	91	2.84	do	105	100	do		
do	do	1921	20872	Q(MF)			10	33	46	65	84	92	3.30	do	122	107	do		
do	do	1921	20873	Q(MF)			5	19	27	52	81	93	2.77	do	107	111	do		
do	do	1922	20966	QCGnFM			3	20	31	57	86	95	2.92	do	127	114	do		
do	do	1922	20967	QCFM			1	10	19	43	75	91	2.39	do	96	98	do		
do	do	1922	21751				3	19	27	45	68	86	2.48	do	117	124	do		
do	do	1922	22636	QFCSM			3	13	23	53	86	96	2.74	do	123	121	do		
do	do	1923	23800	Q(FM)			4	27	43	66	83	94	3.17	do	129	123	do		
do	do	1923	23820	QCS			2	15	30	60	85	96	2.88	do	116	114	do		
do	do	1924	24542	QC			6	31	49	73	86	93	3.38	do	153	128	do		
do	do	1924	25202	QMSc			7	34	53	72	86	93	3.45	do	132	129	do		
do	do	1924	25228	Q(FM)			2	13	25	57	84	95	2.76	do	130	116	do		
do	do	1924	25240	QMGnSc			9	24	37	58	77	86	2.91	do	119	121	do		
do	do	1924	25241	Q(FM)			2	15	29	57	85	94	2.82	do	126	120	do		
do	do	1924	26178	Q(MF)			5	21	32	55	83	94	2.90	do	119	111	do		
do	do	1925	26892	QCSc			9	37	53	77	91	95	3.62	do	133	124	do		
do	do	1925	26932	QCS			9	37	51	76	90	95	3.58	do	127	118	do		
do	do	1925	27525	Q(SCM)			7	17	24	52	80	94	2.74	do	108	105	do		
do	do	1925	27542	QCMSSc			7	31	50	72	88	95	3.43	do	128	121	do		
do	do	1925	27563	Q(FMC)			8	19	27	53	80	94	2.81	do	123	105	do		
do	do	1925	27564	Q(FMSc)			1	14	25	52	81	94	2.67	do	112	105	do		
do	do	1925	28007	Q(MF)			1	8	17	49	83	94	2.52	do	102	103	do		
do	do	1925	28018	Q(MF)			2	8	17	49	82	94	2.52	do	104	104	do		
do	do	1925	28028	Q(FM)			5	28	40	53	70	90	2.86	do	94	119	do		
do	do	1925	28035	Q(MCF)			2	9	18	52	86	96	2.63	do	96	111	do		
do	do	1925	28037	Q(CMF)			4	15	25	52	84	95	2.75	do	120	118	do		
do	do	1925	28046	Q(CMF)			4	14	23	52	84	95	2.72	do	119	92	do		
do	do	1925	28053	Q(CMF)			6	19	31	56	80	92	2.84	do	121	106	do		
do	do	1926	28054	Q(MGnS)			7	22	35	59	82	93	2.98	do	120	110	do		
do	do	1926	28058	QCS			8	31	49	76	91	96	3.51	do	120	120	do		
do	do	1926	28059	QCSM			7	32	47	67	82	94	3.29	do	125	107	do		
do	do	1926	28060	QCSM			5	18	30	57	84	95	2.89	do	102	104	do		
do	do	1926	28061	QCSM			3	17	31	58	84	94	2.87	do	96	95	do		
do	do	1926	28062	Q(CSM)			4	18	29	60	88	97	2.96	do	104	101	do		
do	do	1926	28063	Q(CMS)			3	17	31	60	83	93	2.87	do	109	104	do		
do	do	1926	28064	Q(CMSGnSc)			4	23	38	64	82	91	3.02	do	116	117	do		
do	do	1926	28113	Q(MC)			5	16	26	54	82	92	2.75	do	104	101	do		

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

DISTRICT OF COLUMBIA—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			Test result 7-day	Test result 28-day	Method used	Test result	Size tested
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
	Washington (Potomac River).	Comm.	1926	28114	QCSGn			8	31	44	66	82	93	3.24	Low	131	125	Tens.		
	do	do	1926	28115	Q(MCGnSc)			5	21	37	61	83	93	3.00	do	113	112	do		
	do	do	1926	28116	Q(CMGn)			11	40	56	78	91	96	3.72	do	117	111	do		
	do	do	1926	28117	Q(CM)			6	22	36	61	85	94	3.04	do	113	116	do		
	do	do	1926	28118	Q(CM)			4	13	20	49	81	93	2.60	do	104	107	do		
	do	do	1926	28169	QGnScM			8	30	44	66	84	94	3.26	do	126	113	do		
	do	do	1926	28202	QCSScM			2	14	29	55	79	92	2.71	do	97	101	do		
	do	do	1926	28234	Q(CFM)			2	11	21	53	85	95	2.67	do	93	107	do		
	do	do	1926	28235	Q(CS)			11	32	54	77	88	93	3.55	do	137	131	do		
	do	do	1926	28295	Q(CMF)			4	17	22	45	78	93	2.59	do	104	100	do		
	do	do	1926	28397	Q(MF)			3	13	24	53	81	92	2.66	do	100	97	do		
	do	do	1926	28398	QCS			5	20	30	47	69	93	2.64	do	100	93	do		
	do	do	1926	28444	QSScFM			2	11	18	43	77	93	2.44	do	88	88	do		
	do	do	1927	28772				7	29	45	65	78	90	3.14	High	136	116	do		
	do	do	1927	28773				9	29	40	59	78	90	3.05	do	126	101	do		
	do	do	1927	28774				2	13	22	56	91	98	2.82	Low	107	96	do		
	do	do	1927	28775				2	13	20	52	87	97	2.71	do	120	99	do		
	do	do	1927	28784	Q(FM)			2	9	15	48	84	96	2.54	do	88	101	do		
	do	do	1927	29203				1	11	24	62	89	97	2.84	do	107	107	do		
	do	do	1927	29365	QSM			2	14	25	43	71	91	2.46	High	102	111	do		
	do	do	1928	30278	Q(MF)			1	7	16	31	72	90	2.17	Low	98	109	do		
	do	do	1928	30604	QCSSc			5	22	33	46	76	94	2.76	do	113	107	do		
	do	do	1929	31604	Q(CM)			0	4	11	29	85	98	2.27	do	98	99	do		
	do	do	1929	31605	Q(MCS)			1	9	17	34	85	96	2.42	do	100	104	do		
	do	do	1929	31606	Q(CMS)			2	14	30	56	93	98	2.93	do	118	114	do		
	do	do	1929	32031				7	30	46	60	83	94	3.20	do	118	128	do		
	do	do	1929	32033				4	21	37	54	81	96	2.93	do	122	134	do		
	do	do	1929	32038				3	20	38	56	83	96	2.96	do	126	127	do		
	do	do	1929	32044				5	26	41	56	83	96	3.07	do	129	131	do		
	do	do	1929	32048				2	9	19	39	77	92	2.38	do	107	112	do		
	do	do	1929	32069	Q(CSM)			3	16	28	46	76	91	2.60	do	119	109	do		
	do	do	1929	32070	Q(CSM)			3	22	38	55	84	95	2.97	do	123	120	do		
	do	do	1929	32134				2	12	23	42	77	93	2.49	do	114	107	do		
	do	do	1929	32135				2	11	22	42	77	93	2.47	do	110	106	do		
	do	do	1929	32136				2	11	22	41	78	94	2.48	do	111	108	do		
	do	do	1929	32137				2	10	20	38	75	92	2.37	do	124	115	do		
	do	do	1929	32138				2	7	16	36	74	91	2.26	do	119	111	do		
	do	do	1929	32139				1	7	19	39	77	92	2.35	do	111	118	do		
	do	do	1929	32140				1	9	22	43	78	92	2.45	do	116	115	do		
	do	do	1929	32155				5	30	43	56	81	94	3.09	do	130	124	do		
	do	do	1929	32156				4	20	32	50	81	93	2.80	do	130	114	do		
	do	do	1929	32157				4	21	35	50	79	93	2.82	do	116	116	do		
	do	do	1929	32158				4	20	32	49	80	93	2.78	do	116	108	do		
	do	do	1929	32159				5	22	35	51	81	93	2.87	do	112	120	do		
	do	do	1929	32171				2	13	28	46	77	95	2.61	do	118	120	do		
	do	do	1929	32172				2	12	23	40	84	95	2.56	do	119	108	do		
	do	do	1929	32173				3	18	35	52	80	94	2.82	do	119	125	do		
	do	do	1929	32174				2	17	32	50	80	94	2.75	do	113	115	do		
	do	do	1929	32188				4	20	32	48	82	94	2.80	do	127	105	do		
	do	do	1929	32189				4	22	34	51	84	95	2.90	do	125	107	do		
	do	do	1929	32194				5	19	32	51	77	90	2.74	High	108	104	do		
	do	do	1929	32195				4	16	29	46	74	88	2.57	do	121	117	do		
	do	do	1929	32346				1	12	31	54	84	96	2.78	Low	120	125	do		
	do	do	1929	32348	QCSM			2	9	18	37	82	95	2.43	do	92	100	do		
	do	do	1930	32407	QCS(M)	2.68	0.7	1	8	21	41	86	96	2.53	do	112	103	do		
	do	do	1930	33038				2	11	23	40	85	98	2.59	do	124	116	do		
	do	do	1931	33939				4	17	33	52	89	97	2.92		128	113	do		
	do	do	1931	33968				3	14	30	47	84	96	2.74	Low	126	117	do		
	do	do	1931	34084	Q(M)	2.65	.7	0	1	9	30	78	96	2.14		95	101	do		
	do	do	1931	34105	Q(MCF)	2.66	.8	4	22	34	51	83	95	2.89	Low	97	119	do		
	do	do	1931	34522	QSC	2.67	1.0	6	26	41	58	85	95	3.11	do	119	120	do		
	do	do	1931	34568	QCS			3	16	29	49	87	96	2.80	do	125	116	do		
	do	do	1932	34754	Q(CSFGM)			0	2	10	29	75	95	2.11	do	112	114	do		

do	do	1932	34755	Q(CFMScS)			3	18	32	47	80	94	2.74	do	125	121	do		
do	do	1933	34810	QSC		1.4	5	25	43	59	87	96	3.15	do	151	141	do	[1] 4.6 [1] 9.9	4–50 4–50
do	do	1933	34916		2.59	1.3	1	10	23	39	77	93	2.43	do	112	130	do		
do	do	1934	40211	Q(SCM)		1.2	3	15	23	37	67	93	2.38	do	128	112	Comp		
do	do	1934	40252		2.56	1.4	2	17	27	48	77	90	2.61	do	127	133	Tens		
do	do	1934	40523	QCSSh	2.54	1.0	3	16	29	43	77	95	2.63		133	126	do		
do	do	1934	40663		2.67	.7	5	25	38	55	85	96	3.04	Low	132	127	do		
do	do	1934	40764	QzCQSSh	2.59	.8	7	27	36	54	81	96	3.01	do	121	126	do		
do	do	1935	40888	QCS			3	17	35	51	83	97	2.86	do	106	119	do		
do	do	1935	42090	Q(CSM)		.9	2	12	23	40	86	96	2.59	do	115	136	do		
do	do	1935	42362	Q(C)		.6	0	10	28	46	88	97	2.69	do	126	124	Comp		
do	do	1935	42369	QSCScSh		.8	2	15	30	48	90	98	2.83	do	120	127	do		
do	do	1935	42376	Q(SScSh)		1.1	2	18	37	55	87	97	2.96	do	112	133	do		
do	do	1936	42649	QSC		.9	6	24	37	53	86	97	3.03	do	121	121	Tens		
do	do	1936	43101	QSCShF		1.2	4	20	36	57	87	97	3.01	do	136	136	Comp		
do	do	1937	44465	Q(SFScSh)		1.0	3	22	40	61	88	96	3.10	do	137	133	do		
do	do	1937	44549	QCS		1.2	2	15	30	53	89	97	2.86		122	120	do		
do	do	1937	44551	QCS		1.1	2	17	34	56	86	97	2.92		139	131	do		
do	do	1937	44617	Q(CSSc)		1.1	2	14	28	46	83	98	2.71	Low	110	119	Tens		
do	do	1937	44634	QCShF		1.2	0	1	7	26	72	95	2.01		122	120	do		
do	do	1938	44832	QSScSh		.6	0	12	25	43	85	97	2.62		119	121	Comp		
do	do	1938	44884	QSCSh		.8	3	21	39	55	83	97	2.98		141	144	do		
do	do	1938	44893	QSCSh		.9	0	0	4	26	77	98	2.05	Low	107	108	do		
do	do	1938	44912	QSCScSh		.8	0	0	5	23	71	96	1.95		106	106	do		
do	do	1938	46106			.5	4	18	32	52	88	97	2.91		128	130	do		
do	do	1938	46141			.6	0	0	3	21	75	96	1.95	Low	121	128	do		
do	do	1938	46158	Q(CS)		.7	1	6	18	40	88	97	2.50	do	112	111	do		
do	do	1938	46175	QCSShM		.7	2	15	29	47	81	96	2.60	do	124	126	do		
do	do	1939	46472	QC		.7	2	14	27	52	87	97	2.79	do	119	119	do		
do	do	1939	46898	QQzSG			3	22	37	57	84	95	2.98	do	136	132	Tens		
do	do	1939	48622	QzQSG	2.59	1.0	1	13	25	42	74	95	2.50	do	121	114	Comp		
do	do	1940	48817	QQzSMC	2.62	1.0	5	25	42	61	86	97	3.16	do	126	117	do		
do	do	1940	49594	QQzSC	2.58	1.2	4	21	36	58	85	95	2.99	do	92	94	do		
do	do	1940	50727	QQz(CScMa)	2.61	1.1	1	9	19	40	74	92	2.35	do	105	108	do		
do	do	1940	52150				0	0	1	9	57	93	1.60	do	99	94	do		
do	do	1941	52789	QQz(SCMa)	2.57	1.5	1	16	31	54	83	96	2.81	do	109	108	do		
do	do	1941	52971	QQzS(ScCMa)	2.52	1.5	2	21	43	65	87	98	3.16	do	104	99	do		
do	do	1941	53102	QQzS(CMMa)	2.58	1.1	1	7	14	29	65	90	2.06	do	120	120	do		
do	do	1941	53103	QQzS(M)	2.57	1.2	0	11	27	47	73	89	2.47	do	122	125	do		
do	do	1941	53764	QQzS(ScM)	2.60	1.3	2	16	29	52	82	95	2.76	do	111	102	do		
do	do	1941	54353	QQz(CScMa)	2.58	1.3	1	14	27	49	80	94	2.65	do					
do	do	1941	54439	QQz(ScM)	2.59	1.2	2	13	24	43	77	95	2.54	do	102	96	Comp		
do	do	1942	55811	QQzCScMa		1.2	0	0	4	28	82	97	2.11	do	104	108	do		
do	do	1942	55824	QQzCS	2.58	1.3	1	12	27	53	84	98	2.75	do	93	98	do		
do	do	1942	55877	QQzC	2.56	1.8	1	11	26	52	83	96	2.69	do	95	100	do		
do	do	1942	56094	Q(M)		1.4	0	1	2	10	64	92	1.69	do	122	113	do		
do	do	1942	56099	QQzSc(MaM)		1.7	0	0	0	9	66	94	1.69	do	102	108	do		
do	do	1942	56522	QQzSMa		1.3	0	0	0	17	66	91	1.74	do	102	104	do		
do	do	1942	56530	QQzSMa		1.3	0	0	0	18	68	91	1.77	do	102	99	do		
do	do	1942	56536	QQzS(MaM)		1.4	0	0	0	14	57	89	1.60	do	118	119	do		
do	do	1942	57141	QS(ScMa)		1.5	0	0	4	17	53	95	1.69	do	105	105	do		
do	do	1942	57150	QS(ScMa)		1.7	0	0	3	13	47	93	1.56	do	124	117	do		
do	do	1942	57219	QQzS(MMa)		1.4	1	13	31	50	76	92	2.63	do	90	106	do		
do	do	1942	57441	QQz(CMMa)	2.59	1.5	0	0	4	19	57	96	1.76		104	112	do		
do	do	1942	57558	QQzScMaM		1.7	0	0	6	19	61	95	1.81	Low	93	111	do		
do	do	1942	57642	QQzScMa		1.1	0	1	5	26	61	92	1.85	do	108	115	do		
do	do	1942	57775	QQzSc(CMa)		1.7	0	0	6	23	55	94	1.78	do	113	123	do		
do	do	1942	57776	QQzS(ScMa)		1.8	2	11	29	42	60	93	2.37	do	115	130	do		
do	do	1942	59125	QQzScMMa		1.8	0	1	4	16	59	94	1.74	do	105	118	do		
do	do	1942	59126	QQzMScMa		1.7	0	1	4	20	59	95	1.79	do	110	128	do		
do	do	1943	60665	QQzSCMa		2.0	0	0	3	17	48	91	1.59	do	108	121	do		
do	do	1943	60784	Q		1.7	3	14	28	54	80	94	2.73	do	100	115	do		
do	do	1943	61225	QQzSCSc		.8	7	30	49	70	87	95	3.38	do	118	124	do		
do	do	1943	61339	QQzC(MaM)		2.1	0	0	5	19	57	85	1.66	High	105	97	do		
do	do	1943	61348	QQzC(Ma)		1.5	2	17	34	59	84	94	2.90	Low	87	85	do		
do	do	1943	61853	QQzScMMa		1.3	0	1	4	16	63	92	1.76	do	130	130	do		
do	do	1943	62052	QQzSc(M)		1.5	3	15	29	53	86	96	2.82	do	109	103	do		
do	do	1943	62327	QQzScCMa		1.4	3	18	32	53	82	92	2.80	High	123	113	do		
do	do	1943	62405	QQzCScMa		1.4	3	16	30	46	84	96	2.75	Low	126	116	do		
do	do	1943	62580	QQzScM		1.2	0	0	1	14	75	95	1.85	do	120	108	do		
do	do	1943	62643	QQzScC		1.1	0	0	1	11	72	95	1.79	do	110	114	do		
do	do	1943	62898	QCScMa		1.1	0	0	1	4	71	93	1.69	do	111	108	do		
do	do	1943	63094	Q(GMMa)	2.60	1.3	2	14	27	38	84	96	2.61	do	109	110	do		
do	do	1943	63257	QScMa		1.4	0	1	6	19	54	87	1.67	High	110	97	do		
do	do	1944	63622	QScMa		1.7	0	0	4	9	57	89	1.59	do	143	124	do		
do	do	1944	63629	Q(ScMa)		1.1	0	1	4	10	82	97	1.94	Low	118	122	do		
do	do	1944	63810	QScMa		1.2	0	1	3	15	78	96	1.93	do	112	110	do		
do	do	1944	63840	Q(ScMMa)		1.3	0	1	4	22	83	97	2.07	do	123	110	do		
do	do	1944	64142	QScMMa		1.5	0	0	2	7	74	95	1.78	do	113	109	do		

[1] Magnesium sulfate test.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

DISTRICT OF COLUMBIA—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
	Washington (Potomac River).	Comm.	1944	64247	Q(ScMa)		1.4	2	15	30	40	79	95	2.61	Low	106	100	Comp.		
	do	do	1944	64344	QScCMa	2.59	1.3	1	9	25	52	81	98	2.66	do	105	102	do		
	do	do	1944	64528	Q(ScMMa)		1.2	0	0	2	20	72	95	1.89	do	116	114	do		
	do	do	1944	64554	Q(ScCMa)		1.0	0	0	1	22	77	97	1.97	do	105	108	do		
	do	do	1944	64737	QScMMa	2.60	1.6	2	12	25	48	75	95	2.57	High	115	109	do		
	do	do	1944	64838	QScC(Ma)		2.0	0	0	5	20	46	80	1.51	do	142	118	do		
	do	do	1944	64935	QCScMa	2.59	1.6	3	14	25	48	78	94	2.62	do	113	111	do		
	do	do	1944	65255	QCScMa		1.8	0	0	2	13	46	89	1.50	do	115	111	do		
	do	do	1944	66825	Q(CMa)		1.6									111	100	do		
	do	do	1944	67028	Q(ScMMa)	2.59	1.6	2	15	28	51	82	96	2.74	Low	113	116	do		
	do	do	1945	67894	QScCMa	2 59	1.3	0	7	14	34	80	96	2.31	High	113	115	do		
	do	do	1945	68613	Q(ScMMa)	2.59	1.6	2	13	21	40	75	96	2.47						
	do	do	1945	69186	Q(ScMa)	2.60	1.2	2	15	25	44	75	93	2.54	High	132	123	Comp		
	do	do	1945	69392	QCSc	2.59	1.3	2	17	31	55	83	95	2.83	Low	105	122	do		
	do	do	1945	69926	QCScMa(M)	2.57	1.8	1	13	28	54	85	97	2.78	do	83	91	do	2.8	4–50
	do	do	1946	70147	Q(CScM)	2.59	1.6	1	16	29	54	81	94	2.75	High	120	114	do		
	do	do	1946	70332	Q(SCM)	2.59	1.5	1	11	25	50	84	96	2.67	Low	122	120	do		
	do	do	1947	73090	QScGCMa	2.57	1.6	2	18	31	53	87	97	2.88		99	93	do		
	do	do	1947	73131	QScCMa		1.5	5	24	39	59	85	95	3.07	Low	104	104	do		
	do	do	1947	73133	QScMMa		1.6	0	1	3	22	73	92	1.91	High	111	118	do		
	do	do	1947	73670	QScCMMa		1.6	1	9	18	37	77	97	2.39	Low	97		do		
	do	do	1948	74761	QScC(MaM)		1.4	0	1	5	22	71	95	1.94	do	96	104	do		
	do	do	1948	75523	QScCGMa	2.56	1.8	0	1	7	30	70	95	2.03	do	112	119	do	2.2	8–50
	do	do	1948	75926	QScGCMa		1.5	2	13	25	43	79	94	2.56	do	110	103	do	2.4	4–50
	do	do	1948	75993		2.59	1.5	0	0	4	23	73	93	1.93	do	108	110	do	3.1	8–50
	do	do	1949	77109		2.61	1.3	0	1	6	25	67	95	1.94	do	105	105	do	4.4	8–50
	do	do	1949	77751		2.58	1.5	3	17	31	50	81	96	2.78	do	121		do	1.8	4–50
	do	do	1949	77907	Q(ScCM)	2.57	1.7	3	18	30	49	80	96	2.76	do	115		do		
	do	do	1950	80001	QSCSc	2.60	1.3	1	9	19	39	74	96	2.38		122		do	3.5	4–50
	do	do	1950	80142	Q(CS)	2.58	1.4	2	13	27	50	84	96	2.72		115		do	2.4	4–50

FLORIDA

Alachua	Gainesville	Prosp.	1919	14684	Quartz			0	0	0	4	30	81	1.15		70	83	Tens.		
Bay	Callaway	do	1917	11242	do			0	4	23	69	88	97	2.81		94	82	do		
Do	do	do	1917	11338				1	6	22	53	76	94	2.52		105		do		
Clay	(Kingsley Lake)	do	1923	24486	Quartz			0	0	0	5	77	97	1.79	Low	72	75	do		
Dade	Miami (Biscayne Bay).	Comm.	1923	24333	Shells-Q			1	3	7	32	76	97	2.16	do	91	79	do		
Do	do	do	1927	29243	do			0	0	3	26	75	97	2.01	do	87	86	do		
Do	do	do	1929	32284	do			0	1	10	22	60	95	1.88	do	106	101	do		
Do	do	do	1932	34691	do			0	5	20	34	55	96	2.10	do	100	101	do		
Do	Ojus	do	1930	33062	Limestone [2]			0	1	10	19	45	92	1.67	do	90	94	do		
Do	do	do	1933	34841	do.[2]			0	12	27	38	66	94	2.37		98	100	do		
Do	do	do	1933	34842	do.[2]			0	12	26	36	64	94	2.32		98	98	do		
Do	do	do	1934	40151	do.[2]	2.56	1.5	0	9	31	45	67	94	2.46		92	94	do		
Gadsden	Chattahoochee (Apalachicola River).	Prosp.	1918	13300	Quartz			2	9	21	54	83	97	2.66		124	116	do		
Do	do	do	1919	14438	do			4	22	37	58	87	99	3.07		121		do		
Do	do	do	1921	19500	do			2	12	25	55	89	99	2.82	Low	108	107	do		
Do	do	Comm.	1923	23415	do			8	20	33	66	92	98	3.17	do	107	95	do		
Do	do	do	1923	24455	Q(C)			1	10	23	58	88	99	2.79	do	100	92	do		
Do	do	do	1924	24590	Q(C)			1	11	24	59	87	99	2.81	do	118	102	do		
Do	do	do	1925	26762	Quartz			1	5	17	51	90	99	2.63	do	99	80	do		
Do	do	do	1925	26891	do			3	9	22	60	92	100	2.86	do	112	82	do		
Do	do	do	1927	29286	do			1	4	17	59	92	99	2.72		107	89	do		
Do	do	do	1927	29581	do			1	4	15	46	87	99	2.52	Low	89	97	do		
Do	do	do	1928	30029	Q(C)			1	4	19	53	90	99	2.66	do	109	104	do		
Do	do	do	1928	30184	Quartz			1	5	17	49	89	100	2.61	do	112	104	do		
Do	do	do	1928	30187	do			1	4	15	44	87	99	2.50	do	112	104	do		

Do	do	do	1928	30677	Q(C)			1	4	17	48	89	100	2.59		105	104	do		
Do	do	do	1928	30678	Quartz			0	3	15	47	87	99	2.51		98	96	do		
Do	do	do	1928	30679	do			1	6	19	46	88	99	2.59		98	104	do		
Do	do	do	1928	30680	do			1	5	17	38	85	99	2.45		97	99	do		
Do	do	do	1928	30681	do			0	2	10	26	67	90	1.95		95	92	do		
Do	do	do	1929	31316	do			0	1	10	32	83	99	2.25	Low	85	91	do		
Do	do	do	1930	33031	do			1	5	17	43	88	99	2.53	do	113	103	do		
Do	do	do	1930	33032	do			1	5	18	42	88	99	2.53	do	108	102	do		
Hamilton	Jasper (Alapaha River).	Local	1921	19263	do			0	0	0	2	57	97	1.56	do	77	74	do		
Do	do	do	1922	21032	do			0	1	7	33	75	98	2.14	High	76	76	do		
Do	do	do	1922	21161	do			0	1	7	33	78	99	2.16	Low	79	77	do		
Do	do	do	1922	21162				0	0	5	32	81	99	2.17	do	85	78	do		
Hillsborough	Tampa	Comm	1942	57552	Quartz	2.64	.3	0	0	1	5	67	97	1.70	High	92	95	Comp		
Do	do	do	1942	57553	do	2.66	.2	0	0	0	1	37	93	1.31	Low	104	105	do		
Do	do	do	1942	59020	do	2.63	.3	0	0	0	10	55	98	1.63	do	120	124	do	10.6	16–50
Do	do	do	1943	60790	do	2.61	.6	0	1	20	68	99	100	2.88	do	96	102	do		
Do	do	do	1943	61006	do	2.64	.2	0	2	25	62	99	100	2.88	do	116	116	do	3.1	16–50
Jackson	Cottondale	Prosp	1917	11244	do			3	19	31	61	88	95	2.97		139	129	Tens		
Do	Marianna	Local	1917	11243	do			1	8	20	49	72	94	2.44		96	106	do		
Lake	Eustis	Comm	1923	24254	do			0	0	3	34	81	96	2.14	Low	98	97	do		
Do	do	do	1927	29282	do			0	0	6	44	84	97	2.31		109	103	do		
Do	do	do	1927	29494	do			0	0	8	39	83	97	2.27	Low	107	120	do		
Do	do	do	1930	33061	do			0	0	6	37	88	99	2.20	do	139	121	do		
Do	Okahumpka	do	1923	22784	Q(MF)			1	13	46	62	88	100	3.10	do	116	128	do		
Do	do	do	1927	29281	Quartz			0	0	10	48	86	98	2.42		86	91	do		
Do	do	do	1927	29436	do	2.64		0	0	14	42	75	95	2.26	Low	98	100	do	1.6	8–50
Do	do	do	1927	29470	do			0	0	10	34	79	100	2.23	do	93	87	do	3.0	8–50
Do	do	do	1927	29493	do			0	0	11	37	75	96	2.19	do	96	97	do		
Lee	Punta Rassa (Beach).	Prosp	1912	6095				0	0	0	1	64	99	1.64		67		do		
Marion	Lake Weir	Comm	1918	13707	Quartz			0	0	5	38	89	98	2.30		89	97	do		
Do	do	do	1920	16559	do			0	0	5	42	88	99	2.34		64	92	do		
Do	do	do	1922	21337	do			0	0	6	58	92	97	2.53	High	122	105	do		
Do	do	do	1923	23426	do			0	2	9	51	90	97	2.48	do	90	96	do		
Okaloosa	Holt	Prosp	1918	13575	do			0	0	0	14	66	94	1.74		65	85	do		
Orange	Vineland	Comm	1934	40140	do			0	0	4	28	78	100	2.10	High	95	104	do		
Polk	Barton	do	1927	29285	do			0	0	5	42	81	99	2.27		100	88	do	5.1	8–50
Do	Brewster	do	1923	23732	QC			0	0	1	22	76	97	1.96	Low	95	108	do		
Do	do	do	1927	29254	QL			0	0	10	54	85	98	2.47	do	97	106	do	2.7	8–50
Do	Lake Wales	do	1926	28651	Quartz			0	0	3	32	69	96	2.00	do	85	88	do		
Do	do	do	1927	29284	do			0	0	7	54	86	98	2.45		118	103	do	2.9	8–50
Do	do	do	1927	29435	do	2.63		0	0	4	25	79	99	2.07	Low	91	100	do	2.0	8–50
Do	do	do	1927	29438	do	2.64		0	0	4	25	78	99	2.06	do	90	99	do	2.3	8–50
Do	do	do	1928	30185	do			0	0	13	46	78	97	2.34	do	133	124	do		
Do	do	do	1930	33058	do			0	0	7	44	86	99	2.36	do	115	107	do		
Do	do	do	1934	40150	do	2.63	.3	0	1	10	46	80	99	2.36		97	112	do		
Do	do	do	1943	60790	do	2.61	.6	0	0	1	20	68	99	1.88	Low	96	102	Comp	4.2	16–100
Do	do	do	1943	60941	do	2.65	.1	0	0	1	24	73	98	1.96	do	119	125	do	3.2	16–100
Do	do	do	1943	61000	do	2.64	.2	0	0	2	25	72	99	1.98	do	116	116	do	3.2	16–100
Do	do	do	1943	61092	do	2.66	.1	0	0	1	20	68	97	1.86	do	128	125	do	3.4	16–100
Do	do	do	1943	62072	Q(CM)	2.63	.2	0	0	2	24	73	98	1.97	do	123	116	do	6.6	16–100
Putnam	Edgar	do	1920	16506	Q(M)			0	1	6	27	46	81	1.61		94	93	Tens		
Do	do	do	1923	23088	Q(M)			0	2	10	32	49	86	1.79	Low	80	96	do		
Do	do	do	1923	23097	Q(M)			0	2	9	28	44	82	1.65	do	88	91	do		
Do	do	do	1924	24609	Quartz			0	0	7	43	89	98	2.37	do	108	93	do		
Do	do	do	1924	24666	Q(FM)			0	3	15	58	79	94	2.49	do	126	123	do		
Do	do	do	1927	29283	Quartz			0	2	14	58	76	96	2.46		119	113	do		
Do	do	do	1927	29437	do	2.65		0	0	12	39	71	94	2.16	Low	95	100	do	1.6	8–50
Do	do	do	1930	33063	Q(M)			1	2	11	38	72	94	2.18	do	113	113	do		
Do	Interlachen	do	1917	11673	Quartz			0	5	18	42	68	96	2.29		137		do		
Do	do	do	1918	13410	do			0	1	3	16	53	92	1.65		79		do		
Do	do	do	1927	29440	do	2.63		0	0	9	26	69	96	2.00	Low	98	100	do	2.1	8–50
Do	do	do	1927	29582	do			0	1	16	41	74	95	2.27	do	89	107	do		
Do	do	do	1928	30186	do			0	1	14	37	71	96	2.19	do	124	109	do		
Do	Keuka	do	1927	29439	do	2.62		0	0	13	39	77	96	2.25	do	102	109	do	2.7	8–50
Saint Lucie	Fort Pierce	Prosp	1917	11163	Q & shells			2	23	60	91	98	99	3.73		73	84	do		
Santa Rosa	Milton	Local	1919	15277	Quartz			0	0	1	10	43	80	1.34		93	94	do		
Do	do	do	1919	15384	do			0	0	1	20	74	98	1.93		72	74	do		
Do	do	do	1919	15385	do			0	0	6	40	82	98	2.26		104	105	do		
Do	do	do	1919	15388	do			0	0	3	28	74	97	2.02		92	90	do		
Do	do	do	1919	15393	Q(C)			0	0	1	12	62	98	1.73		89	99	do		
Do	do	do	1920	16741	Quartz			1	6	15	41	75	93	2.31		113	109	do		
Do	do	do	1920	16742	do			0	2	8	33	72	90	2.05		96	104	do		
Do	Milton (Blackwater River).	do	1920	16740	do			0	1	6	34	90	99	2.30		92	90	do		
Suwannee	Live Oak	do	1921	18411	Limestone[2]			7	36	50	67	85	96	3.41		153	137	do		

[2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

GEORGIA

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.			Pct.	Pct.		Pct.	Sieve No.
Bibb	Macon	Local	1922	22528	Q(M)			0	0	7	35	70	89	2.01	Low	104	108	Tens.		
Chatham	Cockspur Island	Prosp.	1936	43053	QFM		0.2	0	1	7	47	89	99	2.43	do	114	113	Comp.		
Do	Savannah (Savannah River).	Local	1923	22770	Quartz			2	6	18	62	90	94	2.72	do	96		Tens.		
Do	do	do	1923	22771	Q(M)			1	5	17	62	93	98	2.76	do	95		do		
Do	do	do	1923	22788	Q(M)			0	6	21	71	94	97	2.89	do	89	78	do		
Do	do	do	1923	22789	Q(M)			1	8	27	75	96	99	3.06	do	87	90	do		
Do	do	do	1923	22790	Q(M)			1	10	21	80	96	99	3.07	do	92	93	do		
Do	do	do	1923	23790	Quartz			1	7	21	68	95	99	2.91	do	108	94	do		
Do	Savannah Beach	Prosp.	1937	43150	Q(SShM)		.4	0	0	7	54	94	99	2.54	do	96	90	Comp.		
Clay	Fort Gaines (Chattahoochee River).	Local	1924	26183	Q(M)			3	17	41	76	92	96	3.25	do	115	111	Tens.		
Cobb	Nickajack	Prosp.	1919	15201	QFM			1	14	35	70	89	97	3.06		92	92	do		
Do	Smyrna (Chattahoochee River).	Local	1924	25407	Q(MF)			0	1	11	55	91	98	2.56	Low	79	85	do		
Crawford	Gaillard	Comm.	1926	28571	Q(FM)			0	1	19	64	82	93	2.59	do	117	128	do	1.3	8–50
Do	Zenith	do	1924	25238	Quartz			0	0	12	62	89	98	2.61	do	130	117	do		
Decatur	Bainbridge	Local	1923	23127	do			0	2	16	64	92	99	2.73	do	125	118	do		
Dooly	Murray's Ferry (Flint River).	Prosp.	1918	13146	do			0	0	4	45	90	98	2.37		89	90	do		
Early	Jakin	Comm.	1926	28615	do			0	8	29	69	91	99	2.96	Low	110	100	do		
Effingham	Eden	do	1938	44861	do											128	118	Comp.		
Do	do	do	1942	57916	QF	2.63	.3	1	3	10	38	74	97	2.23	Low	113	116	do	2.1	8–50
Do	do	do	1942	60405	QF	2.62	.3	1	5	15	43	82	98	2.44	do	96	95	do	4.1	8–50
Do	do	do	1943	60974	QF	2.63	.2	2	7	18	48	86	97	2.58	do	96	98	do	3.6	8–100
Do	do	do	1943	61429	QQz(F)	2.63	.2	1	4	11	36	78	97	2.27	do	106	112	do		
Do	do	do	1943	62318	Quartz	2.64	.2	1	4	12	35	77	96	2.25	do	101	102	do		
Do	do	do	1943	62319	do	2.65	.1	1	4	14	33	76	94	2.22	do	104	107	do	4.6	8–100
Elbert	Elberton (Savannah River).	Local	1926	28572	Q(F)			0	9	41	85	95	97	3.27	do	92	101	Tens.	9.5	4–50
Glynn	Brunswick	Prosp.	1912	5786	Quartz			0	0	1	14	69	98	1.82		77	59	do		
Henry	Stockbridge	Local	1924	26039	GQFM			1	7	22	52	69	82	2.33	Low	99	105	do		
Muscogee	Columbus (Bull Creek).	Comm.	1924	25428	QF			2	11	31	74	93	99	3.10	do	116	105	do		
Do	do	do	1924	26034	Q(MF)			3	11	27	71	93	99	3.04	do	118	113	do		
Do	do	do	1924	26068	Q(MF)			2	9	28	68	87	98	2.92	do	120	112	do		
Do	do	do	1927	29242	Q(M)			4	10	21	56	90	98	2.79	do	98	100	do		
Newton	Covington	Local	1924	25201	QFM			7	17	31	71	90	96	3.12	High	96	108	do		
Richmond	Augusta (Savannah River).	Comm.	1919	14923	Q(F)			0	4	19	64	90	98	2.75		120		do		
Do	do	do	1919	15363	QF			1	9	24	62	89	96	2.81		127	115	do		
Do	do	do	1920	17088	Q(FM)			1	9	17	53	76	96	2.52		129	118	do		
Do	do	do	1920	17660	Quartz			3	24	47	78	91	97	3.40		185	145	do		
Do	do	do	1921	19750	Q(MF)			1	5	15	51	82	93	2.47	Low	126	109	do		
Do	do	do	1921	20408	Quartz			1	5	17	55	82	94	2.54	do	119	107	do		
Do	do	do	1922	21047	Q(FM)			4	13	29	69	93	98	3.06	do	90	109	do		
Do	do	do	1922	21109	Q(FM)			2	15	36	74	95	98	3.20	do	123	122	do		
Do	do	do	1922	21158	Q(MF)			3	8	22	85	98	99	3.15	High	103	96	do		
Do	do	do	1922	21232	Quartz			4	24	40	61	82	94	3.05	do	119	128	do		
Do	do	do	1922	21707	Q(FM)			3	14	30	72	93	98	3.10	Low	129	129	do		
Do	do	do	1922	21804	Q(FM)			2	9	22	66	91	98	2.88	do	140	121	do		
Do	do	do	1926	28708	Q(FM)			1	13	32	73	94	98	3.11	do	115	111	do		
Do	do	do	1927	29241	Q(FM)			1	10	30	75	95	98	3.09	do	102	107	do		
Do	do	do	1930	33916	Q(M)	2.64	.3	1	7	20	48	89	98	2.63	do	105	109	do		
Do	Sand Bar Ferry (Savannah River).	Local	1921	18905	Q(MMa)			2	8	27	77	96	99	3.09		102	99	do		
Do	do	do	1921	18906	Q(MMa)			1	3	14	71	97	99	2.85		104	103	do		
Telfair	Lumber City	Comm.	1923	23491	Q(F)			1	9	21	49	82	98	2.60	Low	106	117	do		
Thomas	Thomasville	Prosp.	1912	5965				0	4	16	48	80	93	2.41		119		do		
Do	do	Comm.	1923	23094	Quartz			0	5	14	46	77	94	2.36	Low	117	110	do		
Do	do	do	1938	44829	do		.3	1	5	18	46	84	99	2.53		124	121	Comp.		
Toombs	(Altamaha River)	do	1925	27338	do			0	2	18	85	99	100	3.04	Low	111	95	Tens.		

ILLINOIS

Cook	Chicago	Comm.	1935	40921	Bfs	1.90	8.3	0	0	31	65	87	93	2.76		31	53	Tens.		
Do	Thornton	do	1934	40606	Limestone			0	11	47	67	81	91	2.97		144	149	do	8.7	4–100
Kane	Elgin	do	1935	42334	DoQSG			2	15	38	58	91	98	3.02					6.6	4–100
LaSalle	Ottawa	do	1924	24636	Quartz			0	0	40	98	100	100	3.38						
Do	do	do	1928	30798	do			0	0	0	0	89	99	1.88						
Do	do	do	1934	40208	do			0	0	0	0	65	98	1.63						
McHenry	Algonquin	do	1924	26305	LDoSQC			8	24	43	73	92	98	3.38	Low	147	144	Tens.		
Rock Island	Rock Island (Mississippi River).	Local	1918	13393	Q(CMa)			1	5	15	52	86	96	2.55		83	79	do		
Do	do	do	1918	13394	Q(Ma)			2	11	25	59	94	99	2.90		103	119	do		
Will	Plainfield	Comm.	1924	26301	DoLSCQ			5	23	40	77	97	99	3.41	Low	160	151	do		
Winnebago	South Beloit	do	1924	26308	QLCSG			7	23	33	63	94	98	3.18	do	118	128	do		

INDIANA

Cass	Logansport	Comm.	1928	30786	QCLS			4	15	32	52	81	97	2.81	Low	124	125	Tens.		
Do	do	do	1929	31473	QCLS			3	17	37	62	88	98	3.05	do	148	130	do		
Do	do	do	1945	70123	QLQzCSDoG	2.61	1.5	2	18	34	57	88	98	2.97	do	134 113	109 104	do Comp.	3.6	8–50
Martin	Shoals (White River).	Prosp.	1925	26917	QC(QzDo)			1	6	22	84	98	99	3.10	do	84	80	Tens.		
Do	do	do	1926	28661	QC			5	15	30	79	98	99	3.26	do	92	87	do		
Do	do	do	1931	33296	QCSL	2.66		1	7	18	53	98	99	2.76		95	94	do		
Miami	Peru	Comm.	1942	56076	DoCLQ(GB)	2.59	1.8	0	6	30	62	91	97	2.86	Low	107	112	Comp.	10.0	4–100
Steuben	Pleasant Lake	do	1919	14672	QCL			6	26	40	59	79	96	3.06		133	131	Tens.		
Do	do	do	1919	14894	QLC			3	20	37	62	82	96	3.00		118	124	do		
Do	do	do	1921	19380	QCLSMa			2	13	28	63	83	99	2.88		124	110	do		
Do	do	do	1921	19932	QLSCG			1	9	22	53	81	98	2.74		118	115	do		
Do	do	do	1922	21326	QCLS			2	15	31	62	87	98	2.95	Low	134	139	do		
Do	do	do	1923	22344	QLSF			1	5	13	49	78	96	2.39	do	122	123	do		
Do	do	do	1923	23844	LDoQCFG			0	2	17	50	82	97	2.48	do	110	141	do		
Wayne	Richmond	do	1923	24105	LQF			1	11	33	79	94	98	3.16	do	143	144	do		

IOWA

Dubuque	Dubuque	Comm.	1914	7706	QCFMa			0	2	9	43	91	100	2.45		80		Tens.		
Lyon	Klondike	do	1937	44349	LQGFShC		0.5	7	35	49	59	87	97	3.34		143 142	133 125	Comp. Tens.		
Montgomery	Red Oak (Nishnabotna River).	do	1910	4726				3	11	41	66	93	99	3.13		120	142	do		

KANSAS

Cherokee	Baxter Springs	Local	1929	32107	Chert[2]			0	0	19	53	83	98	2.53	Low	94	95	Tens.		
Cowley	Silverdale	Comm.	1929	31636	QF	2.63		1	16	39	60	89	100	3.05	do	129	105	do		
Ellis	Yocemento	do	1930	32403	QLCF			5	25	52	78	96	98	3.54	do	119	104	do		
Ford	Dodge City	Prosp.	1917	11552	Q			6	32	57	81	93	98	3.67		122	111	do		
Johnson	Holliday	Comm.	1927	28737	QSL			3	18	37	68	88	95	3.09	Low	157	126	do		
Do	do	do	1927	28738	QSL			2	18	37	71	90	96	3.14	do	150	124	do		
Marshall	Marysville	Prosp.	1925	27334	Q(FC)			2	24	48	80	95	98	3.47	do	125	114	do		
Neosho	Saint Paul (Neosho River).	do	1921	19603	Q			5	29	38	52	80	86	2.90	High	97	82	do		
Riley	Manhattan	Comm.	1929	32402	QFCL			3	22	45	76	96	99	3.41	Low	126	101	do		
Sedgwick	Waco	Prosp.	1920	15759	QF			2	12	23	46	74	94	2.51	do	103	101	do		
Do	Wichita (Arkansas River).	do	1920	15758	Q(FMa)			1	4	14	48	82	97	2.46	do	104	103	do		
Do	do	Comm.	1929	32027	QCF	2.63		2	9	24	53	87	99	2.74	do	110	101	do		
Shawnee	Topeka	do	1920	16185	Q(FC)			2	5	10	32	82	99	2.30		108	94	do		

[2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

KENTUCKY

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Casey	West Liberty (Licking River).	Prosp	1923	24439	Quartz			0	0	0	1	25	75	1.01	High	64	63	Tens.		
Daviess	Owensboro (Ohio River).	Comm.	1941	51649	QC	2.60	0.8	4	15	29	43	88	99	2.78	Low	94	112	Comp.		
Elliott	Green (Ohio River).	Local	1922	22285	QSCF			3	13	19	43	90	98	2.66	do	109	99	Tens.		
Greenup	Riverton	do	1925	26899	QCS			10	31	49	74	91	98	3.53	do	138	130	do		
Hancock	Hawsville	Comm.	1931	34041	QCSF			3	19	35	51	90	99	2.97	High	132	113	do		
Jefferson	Louisville (Ohio River).	do	1919	14674	Q(CSL)			3	14	22	42	67	97	2.45		102	108	do		
Do	do	do	1922	21288	QCSL			3	11	15	37	79	96	2.44	Low	104	95	do		
Do	do	do	1922	21624	QLCSG			7	16	27	68	93	98	3.09	do	132	144	do		
Do	do	do	1922	21631	QLCSG			3	14	23	55	90	98	2.83	do	117	127	do		
Do	do	do	1922	22405	QCSL			7	24	35	61	92	98	3.17	do	140	113	do		
Do	do	do	1922	22502	QCSL			1	9	19	56	92	98	2.75	do	121		do		
Do	do	do	1924	26101	Q(CL)			6	17	26	45	82	97	2.73	do	120	122	do		
Kenton	Ludlow	do	1920	16933	QCL			3	20	36	63	85	94	3.01		139	122	do		
McCracken	Paducah	do	1924	25063	Quartz			0	0	5	61	95	99	2.60	Low	99	88	do		
Do	do	do	1927	29330	QCS			0	6	21	68	96	99	2.90	High	108	95	do		
Magoffin	Tiptop	Local	1946	70268	Quartz	2.65		0	0	0	0	25	93	1.18	Low	75	70	Comp.	3.0	30–50
Meade	Flaherty	do	1946	70269	do	2.64		0	0	0	0	5	65	.70	do	85	85	do		
Do	do	do	1946	70270	do	2.66		0	0	0	0	2	90	.92	do	54	67	do		
Menifee	Frenchburg (Beaver Creek).	Prosp	1923	24438	QS			0	0	5	36	80	91	2.12	do	95	84	Tens.		

LOUISIANA

Avoyelle	Marksville	Local	1920	17546	Q(C Ma)			0	0	2	12	57	94	1.65		87	93	Tens.		
Do	do	do	1920	17580	Q(F Ma)			0	0	0	6	63	94	1.63		75	81	do		
Beauregard	De Ridder	do	1921	19461	Q(CS)			3	12	19	36	67	87	2.24	High	110	100	do		
Bossier	Bossier City	do	1927	29409	QC			2	7	12	24	72	96	2.13	Low	92	87	do		
East Feliciana.	McManus	Comm.	1920	16913	QC			3	17	29	55	86	94	2.84		123	126	do		
Evangeline	Turkey Creek	do	1921	19089	QC			1	8	17	40	86	99	2.51	Low	97	93	do		
Grant	Colfax	do	1920	16753	QC			2	9	13	29	70	94	2.17		113	121	do		
Do	do	do	1920	17004	QC			3	13	16	30	74	97	2.33		99	97	do		
Livingston	Denham Springs	do	1923	24336	QC			3	16	27	54	90	98	2.88		129	127	do		
Natchitoches	Natchitoches	Local	1920	16861	Quartz			0	0	0	3	23	84	1.10		82	77	do		
Orleans	New Orleans	Comm.	1925	26906	Q(C)			1	9	19	47	87	99	2.62	Low	86	103	do		
Do	do	do	1927	28789	QC			5	28	43	63	88	98	3.25	do	152	129	do		
Do	do	do	1935	42567	QC		0.2	0	1	15	39	93	100	2.48	do	109	98	Comp.		
Do	do	do	1936	42625	Q(CFS)	2.63	.2	0	2	13	36	95	100	2.46	do	101	112	do		
Do	do	do	1936	42660	Q(CF)	2.62	.2	0	2	14	46	97	100	2.59	do	119	115	do		
Do	do	do	1936	42794	Q(C)	2.63	.2	0	4	20	49	97	100	2.70	do	113	132	do		
Do	do	do	1936	42795	QC	2.61	.2	0	4	26	57	97	100	2.84	do	124	149	do		
Do	do	do	1936	42899	QC	2.64	.2	2	9	23	40	92	100	2.66	do	112	110	do		
Do	do	do	1936	42900	QC	2.66	.2	1	4	13	30	91	100	2.39	do	106	99	do		
Do	do	do	1936	42916	Q(CF)		.2	1	3	12	31	90	100	2.37	do	99	104	do		
Do	do	do	1936	42917	Q(CF)		.2	1	6	16	31	88	99	**2.41**	do	116	111	do		
Ouachita	West Monroe	do	1920	17735	QC			4	14	31	72	91	95	**3.07**		142	126	Tens.		
Do	do	do	1921	18109	Q(CQz)			0	3	12	53	89	98	2.55		118	99	do		
Do	do	do	1922	21251	QC			2	9	20	73	96	98	2.98	Low	102	97	do		
Do	do	do	1923	22774	QC			2	9	20	73	97	99	3.00	do	124	115	do		
Do	do	do	1923	23013	QC			3	11	23	75	98	99	3.09	do	104	116	do		
Do	do	do	1923	23014	QC			3	12	23	74	98	99	3.09	do	115	115	do		
Do	do	do	1924	24008	Q(C)			3	9	17	61	97	99	2.86	do	94	100	do		
Rapides	Alexandria	Prosp	1917	12591	Q(F)			0	4	7	21	75	98	2.05		96		do		
Do	do	Comm.	1920	17339	Q(C)			1	6	9	22	72	97	2.07		110	90	do		
Do	do	do	1921	18682	Q(C)			5	14	25	48	87	99	2.78	Low	121	103	do		
Do	do	do	1921	19562	QC			2	8	13	31	81	94	2.29	do	107	92	do		
Do	do	do	1921	20584	Q(CF)			0	0	2	13	76	97	1.88	do	82	78	do		
Do	do	do	1921	20588	Q(F)			0	0	2	11	75	97	1.85	do	84	85	do		

Do	do	do	1924	24837	Q(C)			2	10	19	51	91	100	2.73	do	95	99	do	
Do	do	do	1924	24909	QC			1	9	17	40	86	98	2.51	do	110	100	do	
Do	Lecompte	do	1921	18016	Q(F)			1	5	9	23	74	95	2.07		110	101	do	
Do	Valde Rouge	do	1921	17940	Q(CS)			2	13	23	46	88	99	2.71		115	103	do	
Do	do	do	1923	23091				5	13	19	40	88	98	2.63	Low	87	98	do	
Saint Landry.	Melville	Prosp	1920	17717	QC			2	12	21	44	83	98	2.60		115	114	do	
Saint Tammany.	Sun	Comm	1923	24390	Quartz			0	1	4	28	83	98	2.14	Low	96	96	do	
Do	do	do	1923	24397	do			0	1	4	30	85	99	2.19	do	103	91	do	
Tangipahoa	Amite	do	1923	22745	Q(C)			1	9	18	53	93	99	2.73	do	131	105	do	
Do	do	do	1923	24505	Q(CS)			11	25	33	51	83	97	3.00	do	151	145	do	
Do	Breckwoldt	Local	1923	24504	Q(F)			1	4	6	23	66	89	1.89	do	116	104	do	
Do	Fluker	Comm	1924	24718	Quartz			8	20	28	41	78	98	2.73	do	118	133	do	
Do	do	do	1925	26858	Q(C)			3	10	19	48	90	99	2.69	do	126	128	do	
Do	Hammond (Tangipahoa River).	Local	1924	24900	Q(C)			3	6	9	29	78	98	2.23	do	106	99	do	
Do	Roseland	Comm	1922	22629	Quartz			1	11	21	55	92	98	2.78	do	140	109	do	
Do	do	do	1925	27375	Q(C)			0	1	7	35	80	99	2.22		112	113	do	
Webster	Minden	do	1921	18691	Q(SC)			1	7	9	16	43	89	1.65	Low	87	83	do	
Do	do	do	1923	24467	Q(C)			3	14	30	64	94	98	3.03	do	119	111	do	
Do	Minden (Dauchite Bayou).	do	1926	28358	QC			5	18	29	53	85	97	2.87	do	113	109	do	
West Baton Rouge.	Anchorage	Local	1924	24907	QC			1	1	3	21	75	95	1.96	High	72	80	do	
Do	do	do	1925	27572	QC			0	2	6	31	84	98	2.21	Low	95	107	do	
West Feliciana.	Profit Island	Comm	1932	34709	QC	2.65	.5	0	3	5	16	95	99	2.19	High	97	93	do	
Winn	Winnfield	do	1922	22691	Limestone [2]			11	28	38	53	61	69	2.60		133	128	do	

MAINE

Androscoggin.	Auburn	Local	1926	28479	QFM			0	10	28	62	95	100	2.95	Low	80	71	Tens	
Do	do	do	1926	28550	QFMS			0	7	23	68	93	96	2.87		83	65	do	
Do	do	do	1939	48554	QGnFM			5	26	49	71	95	98	3.44	High	78	71	do	
Do	Leeds Junction	Comm	1922	22526	QGFM			1	8	24	72	94	96	2.95	Low	106	90	do	
Do	do	do	1922	22654	QGFM			2	14	37	87	96	98	3.34	do	111	126	do	
Do	do	do	1922	22655	QFM			1	4	20	74	97	100	2.96	do	82	86	do	
Do	do	do	1924	25204	QFMGS			1	13	37	84	95	98	3.28	do	95	89	do	
Do	do	do	1934	40186	GQFSSlM			1	11	31	74	91	97	3.05	do	117	128	do	
Do	do	do	1935	40828				3	19	41	82	94	98	3.37	do	113	110	do	
Do	Lewiston	Local	1928	30127	QFGnM			7	20	39	64	86	95	3.11	do	111	111	do	
Do	Mechanic Falls	do	1926	28511	QF			0	8	17	41	88	99	2.53		90	82	do	
Do	do	do	1926	28516	QF			0	17	46	83	97	99	3.42		96	69	do	
Do	do	do	1926	28518	QFM			0	8	21	61	93	99	2.82		106	97	do	
Do	Poland	do	1926	28504	QFM			0	2	10	46	93	99	2.50		82	74	do	
Do	do	do	1926	28514	QF			0	8	45	93	99	100	3.45		102	69	do	
Aroostook	Caribou	do	1926	28522	LSSlQ			0	21	41	64	89	96	3.11		145	125	do	
Do	Eagle Lake	do	1928	30131	ShSlSQ			15	32	57	84	94	97	3.79	Low	152	149	do	
Do	Hamlin	do	1926	28506	QSSl			0	13	34	62	97	100	3.06		116	117	do	
Do	Haynesville	do	1926	28451	QSSlShL			0	18	59	92	95	96	3.60		161	144	do	
Do	Houlton	do	1926	28485	SSlL			0	8	22	68	97	98	2.93	Low	117	104	do	
Do	do	do	1926	28486	LSlSQ			0	0	2	25	86	95	2.08	do	96	93	do	
Do	do	do	1928	30130	SlScLQ			12	25	48	80	94	97	3.56	do	167	168	do	
Do	do	do	1944	64980	ScQzGQ		3.0	3	24	47	76	92	97	3.39					[1] 24.6	4–50
Do	Orient	do	1926	28521	SlSQL			0	22	48	77	93	96	3.36		149	138	Tens		
Do	Presque Isle	do	1926	28488	QSSl			0	15	35	58	83	91	2.82	Low	112	110	do		
Do	Washburn	do	1926	28487	SQSl			0	25	50	79	95	97	3.46	do	137	124	do		
Do	do	do	1926	28503	SQSl			0	21	46	74	94	97	3.32		114	118	do		
Do	do	do	1926	28507	SQSl			0	15	33	59	87	94	2.88		106	100	do		
Do	do	do	1926	28508	SQSl			0	31	55	77	91	96	3.50		149	151	do		
Cumberland	Bolsters Mill	do	1926	28480	QFM			0	5	31	88	99	99	3.22	Low	78	60	do		
Do	Bridgton	do	1926	28475	QF			0	15	42	78	94	98	3.27	High	90	64	do		
Do	do	do	1926	28476	QF			0	7	38	88	99	100	3.32	Low	86	75	do		
Do	Naples	do	1926	28477	QF			0	6	21	70	96	99	2.92	do	98	83	do		
Do	do	do	1926	28478	QFM			0	5	25	71	91	98	2.90	do	82	74	do		
Do	Otisfield	do	1925	27397	QFCM			0	3	19	83	98	99	3.02	do	97	82	do		
Do	do	do	1926	28467	QFM			0	15	47	77	91	98	3.28	do	94	81	do		
Do	do	do	1926	28468	QFM			0	13	36	74	93	98	3.14	do	92	71	do		
Do	do	do	1926	28532	QF			0	3	24	80	99	100	3.06		98	82	do		
Do	do	do	1928	30128	QF			0	2	15	78	98	100	2.93	Low	103	108	do		
Do	Portland	Comm	1926	28465	QFM			0	13	37	76	96	99	3.21		88	71	do		
Do	Raymond	Local	1926	28466	QFM			0	7	23	57	88	97	2.72		90	85	do		
Do	Windham Center	do	1926	28463	QF			0	5	25	75	97	99	3.01		91	72	do		
Franklin	Carthage	do	1926	28529	QFM			0	6	18	41	73	92	2.30		74	60	do		
Do	Kingfield	do	1926	28472	QFMS			0	6	17	51	90	96	2.60	Low	90	79	do		
Do	Phillips	do	1926	28512	QSSl			0	15	35	72	94	97	3.13		96	83	do		

[1] Magnesium sulfate test. [2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

MAINE—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			Test result		Method used	Test result	Size tested
																7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Hancock	Ellsworth	Local	1926	28536	QFS			0	8	20	44	83	96	2.51		94	80	Tens.		
Do	Hancock	do	1926	28491	QFSSl			0	6	32	73	92	96	2.99		108	102	do		
Do	do	do	1926	28530	QFS			0	12	36	66	87	94	2.95		102	90	do		
Do	Lamoine	do	1926	28535	QFS			0	16	41	76	96	98	3.27		87	77	do		
Do	do	Prosp.	1939	46813	QQzGDiGnScS		1.0	8	19	37	63	91	98	3.16	Low	104	114	Comp.		
Do	do	do	1939	46814	QQzSGC		1.4	0	25	58	87	95	96	3.61	do	80	92	do		
Do	do	Local	1939	46815	QScS		1.1	0	0	7	48	86	97	2.38	do	114	120	do		
Do	do	do	1939	46816	QSScG		.7	0	10	28	54	80	92	2.64	do	118	109	do		
Do	do	do	1939	46817	QQzGnScG		.8	0	12	38	68	84	96	2.98	do	112	106	do		
Do	Mount Desert	do	1926	28534	QFS			0	11	41	71	87	95	3.05		93	76	Tens.		
Do	North Brooksville	Prosp.	1939	46478	QFSG		1.4	0	23	62	88	97	99	3.69	Low	95	101	Comp.		
Do	Sullivan	Local	1926	28519	QM			0	13	40	72	93	97	3.15		98	78	Tens.		
Do	do	do	1926	28525	QFS			0	13	41	79	93	97	3.23		88	83	do		
Do	Town No. 7	do	1926	28537	QFS			0	11	33	66	87	96	2.93		86	61	do		
Kennebec	Augusta	do	1926	28524	QFS			0	3	14	47	86	96	2.46		89	83	do		
Do	do	do	1926	28531				0	8	37	79	93	96	3.13		123	105	do		
Do	Benton	do	1926	28496	QFSSlSc			0	10	38	72	90	94	3.04		103	101	do		
Do	do	do	1926	28498	QFSSlSc			0	0	0	6	64	93	1.63		64	59	do		
Do	Gardiner	do	1926	28483	QFMGnSc			0	10	26	54	85	94	2.69	Low	89	83	do		
Do	do	do	1926	28484	QFM			0	7	25	56	85	93	2.66	do	91	80	do		
Do	do	do	1926	28489	QFMGn			0	12	29	52	81	92	2.66	do	81	81	do		
Do	South Gardiner	do	1926	28495	QFMGnSc			0	9	22	44	76	94	2.45	do	82	91	do		
Do	Vassalboro	do	1926	28462	QShSlSL			0	8	26	66	91	95	2.86		116	112	do		
Do	Waterville	do	1926	28456	QShSlSL			0	7	29	65	90	96	2.87		123	123	do		
Do	do	do	1926	28459	QSSlShL			0	14	35	65	87	95	2.96		122	127	do		
Do	do	do	1926	28460	QSSl			0	16	42	74	97	99	3.28		89	63	do		
Do	do	do	1926	28482	QSSlM			0	4	11	32	85	96	2.28		72	61	do		
Do	do	do	1926	28497	QSSlScL			0	5	27	69	92	95	2.88		111	85	do		
Knox	Thomaston	Comm.	1926	28523	Limestone			0	16	33	51	69	83	2.52		137	128	do		
Oxford	Bethel	Local	1926	28452	QFMG			0	20	44	82	99	100	3.45		90	73	do		
Do	do	do	1926	28453	QFM			0	16	38	74	96	99	3.23		86	61	do		
Do	Hiram	do	1926	28471	QFM			0	6	24	67	91	95	2.83		83	60	do		
Do	do	do	1926	28474	QFM			0	7	22	50	83	95	2.57		74	59	do		
Do	Paris	do	1926	28526	QFM			0	12	38	78	96	99	3.23		81	65	do		
Do	do	do	1926	28527	QFM			0	3	16	64	93	98	2.74		89	75	do		
Do	do	do	1926	28528	QFM			0	9	30	75	96	98	3.08		80	55	do		
Do	do	do	1926	28541	QFM			0	8	30	69	88	95	2.90		92	79	do		
Do	do	do	1926	28544	QFM			0	4	17	54	91	98	2.64		88	80	do		
Do	do	do	1926	28545	QFM			0	13	40	77	96	99	3.25		93	73	do		
Do	do	do	1926	28546	QFM			0	9	28	68	95	98	2.98		94	81	do		
Do	do	do	1926	28547	QFM			0	5	17	60	94	99	2.75		78	58	do		
Do	do	do	1926	28548	QFM			0	8	27	68	94	97	2.94		83	58	do		
Do	Rumford	do	1926	28494	QFM			0	12	39	79	97	99	3.26		83	61	do		
Do	do	do	1926	28505	QF			0	6	22	67	96	99	2.90		77	58	do		
Do	South Hiram	do	1926	28473	QF			0	5	20	66	95	99	2.85	Low	81	70	do		
Penobscot	Bangor	do	1926	28549	SSlQL			0	27	72	97	99	99	3.94		138	123	do		
Do	Carmel	do	1926	28513	QSSl			0	17	39	66	85	92	2.99		115	125	do		
Do	do	do	1926	28515	QSSl			0	10	26	53	82	82	2.63		111	116	do		
Do	Corinth	do	1926	28481	QSSc			0	16	56	90	96	97	3.55	Low	121	110	do		
Do	East Holden	do	1926	28533	QS			0	22	53	80	93	96	3.44		128	112	do		
Do	Hampden	do	1944	64979	QzScG		2.0	1	16	41	68	89	97	3.12					[1] 17.8	4–50
Do	Old Town	do	1926	28464	QSShSc			0	7	33	72	92	97	3.01		103	102	Tens.		
Do	Orono	do	1922	22608	QSQzGF			7	17	36	80	94	97	3.31	Low	114	118	do		
Do	Winn	do	1926	28492	QFSSl			0	17	53	80	93	98	3.41	do	100	72	do		
Piscataquis	Monson	do	1926	28461	QShSlS			0	12	29	59	86	94	2.80		85	74	do		
Somerset	Anson	do	1926	28520	QSSl			0	2	10	63	90	97	2.62		82	75	do		
Do	Flagstaff	Prosp.	1922	21758				6	20	34	59	87	98	3.04	High	80	65	do		
Do	do	do	1922	21893	QFGGnSh			5	19	32	58	87	97	2.98	do	44	62	do		
Do	Hartland	Local	1926	28470	QS			0	18	46	80	96	97	3.37	Low	115	102	do		
Waldo	Lincolnville	do	1926	28457	QFScS			0	20	48	71	89	96	3.24		95	73	do		
Do	do	do	1926	28458	QScS			0	28	56	80	92	96	3.52		121	108	do		

Washington.	East Machias	do	1926	28539	QFS			0	16	46	76	90	95	3.23		102	74	do		
Do	Jonesboro	do	1926	28538	QFS			0	1	6	35	80	94	2.16		75	68	do		
Do	Steuben	do	1926	28540	QFS			0	5	22	57	86	94	2.64		80	55	do		
Do	Vanceboro	do	1928	30129	QFSSlM			3	11	34	89	98	99	3.34	Low	108	120	do		
York	Biddeford	do	1926	28542	QF			0	0	1	34	95	97	2.27		80	66	do		
Do	do	do	1926	28543	QFS			0	1	7	43	93	98	2.42		75	60	do		
Do	Kittery	do	1926	28501	QFS			0	9	21	49	83	95	2.57		86	85	do		
Do	Newfield	do	1926	28499	QFM			0	10	31	63	94	99	2.97	Low	79	57	do		
Do	do	do	1926	28509	QF			0	8	34	64	93	98	2.97		115	115	do		
Do	do	do	1926	28510	QF			0	1	10	55	94	98	2.58		85	75	do		
Do	North Shapleigh	do	1926	28500	QFM			0	7	22	52	81	95	2.57	Low	75	60	do		
Do	Saco	Comm	1922	22309	Q(FM)			2	7	21	82	97	99	3.08	Low	86	80	do		
Do	Shapleigh	Local	1926	28490	QF			0	10	33	64	85	92	2.84	do	81	72	do		
Do	do	do	1926	28502	QFM			0	7	32	79	96	99	3.13		88	81	do		
Do	do	do	1926	28517	QF			0	13	39	80	95	98	3.25		84	62	do		
Do	Wells	do	1926	28454	QFMS			0	11	26	54	79	92	2.62		90	70	do		
Do	do	do	1926	28455	QF			0	9	27	62	90	97	2.85		98	88	do		

MARYLAND

Anne Arundel.	Armiger	Local	1920	17450	Quartz			0	0	2	13	53	90	1.58		78	83	Tens		
Do	Conway	do	1923	24288	Q(MF)			0	0	1	10	79	98	1.88	Low	92	94	do		
Do	do	do	1923	24410	Q(M)			0	0	1	8	83	98	1.90	do	95	97	do		
Do	do	do	1926	28182	Q(M)			0	0	1	8	73	96	1.78	do	58	68	do		
Do	do	do	1928	30741	Q(M)			0	0	0	0	26	97	1.23	do	56	52	do		
Do	do	do	1928	30742	Q(M)			0	0	1	2	53	97	1.53	do	76	55	do		
Do	do	do	1928	30743	Q(M)			0	0	1	3	68	97	1.69	do	80	70	do		
Do	do	do	1928	30744	Q(FM)			0	0	0	0	42	96	1.38	do	74	67	do		
Do	do	do	1928	30745	Q(FM)			0	0	0	0	21	95	1.16	do	80	61	do		
Do	do	do	1928	30746	Q(FM)			0	0	0	1	43	96	1.39	do	76	80	do		
Do	do	do	1928	30747	Q(FM)			0	0	0	0	36	97	1.33	do	72	75	do		
Do	Dorsey	Prosp	1918	12632	Q(M)			0	0	1	33	91	98	2.23		108		do		
Do	Patapsco	Comm	1924	24618	Q(FM)			3	22	44	77	93	97	3.36	Low	168	121	do		
Do	Portland	Prosp	1917	11741	Quartz			3	19	30	70	95	99	3.16		112		do		
Baltimore	Fullerton	Comm	1919	14367	do			15	30	45	67	82	92	3.31		126	124	do		
Do	Texas	Local	1922	21840	Q(MF)			1	1	5	66	89	96	2.58	Low	104	104	do		
Do	do	Prosp	1925	26745	F(QM)			0	0	9	62	85	94	2.50	do	109	97	do		
Do	Towson	Comm	1937	43143	Quartz [2]	2.67	0.2	0	3	18	34	98	100	2.53		100	99	Comp		
Do	White Marsh	do	1923	23623	Q(M)			15	33	43	62	85	95	3.33	Low	123	132	Tens		
Do	do	do	1923	23624	Quartz			5	24	37	58	83	97	3.04	do	117	111	do		
Do	do	do	1923	24332	do			12	38	53	71	88	96	3.58	do	136	108	do		
Do	do	do	1937	44567	Q(Sh)		.4	5	17	31	49	80	96	2.78	do	127	128	Comp		
Do	do	do	1947	72751	QFM	2.63	.5	2	17	29	48	82	96	2.74	do	106	101	do	3.7	4–50
Do	do	do	1947	72812	QQz	2.64	.4	2	17	29	45	78	96	2.67	do	116	106	do	2.0	4–50
Do	do	do	1947	73993	QQz	2.63	.4	2	19	32	47	75	94	2.69		97	96	do	.8	4–50
Do	do	do	1948	75046	QM	2.62	.6	4	22	37	55	83	96	2.96		120	119	do	1.7	4–50
Do	do	do	1948	76002		2.63	.6	0	14	28	50	83	97	2.72		116	114	do		
Do	do	do	1949	78083	Quartz	2.63	.4	3	17	30	46	75	95	2.66		119	116	do	1.0	4–50
Do	do	do	1950	80079	do	2.63	.5	2	20	35	51	77	96	2.81		133	122	do	.9	4–50
Do	do	do	1950	81725	do	2.64	.4	2	19	34	51	81	97	2.84		127	125	do		
	Baltimore	do	1919	14423	Q(MFMa)			2	13	25	49	73	93	2.55		117	114	Tens		
	do	do	1920	17320	Q(MF)			1	8	15	32	61	88	2.05		86	84	do		
	do	do	1920	17447	Q(MFMa)			2	15	24	44	73	91	2.49		108	99	do		
	do	do	1923	23600	Q(FM)			2	17	36	67	89	96	3.07		118	111	do		
	do	do	1925	26793	Q(CMGn)			7	24	39	62	88	97	3.17		130	131	do		
	do	do	1925	26901	Q(MGnSc)			6	24	41	73	92	98	3.34	Low	97	90	do		
	do	do	1925	26902	Q(MFGn)			5	21	37	66	88	97	3.14	do	114	108	do		
	do	do	1928	30212	QCFM			5	19	36	57	84	95	2.96	do	112	109	do		
	Baltimore (Canton).	do	1917	12534	Q(FM)			0	2	7	31	73	96	2.09		111		do		
	do	do	1917	12535	Q(FM)			2	15	29	62	89	98	2.95		122		do		
	do	do	1917	12536	Q(FM)			2	13	28	66	91	98	2.98		131		do		
	do	do	1917	12537	Q(FM)			1	12	25	60	88	97	2.83		129		do		
	do	do	1917	12538	Q(FM)			2	20	39	72	92	98	3.23		151		do		
	do	do	1917	12539	Q(FM)			1	11	23	55	86	96	2.72		116		do		
	do	do	1917	12540	Q(FM)			1	12	31	70	91	97	3.02		114		do		
	do	do	1917	12541	Q(FM)			0	3	10	41	84	98	2.36		99		do		
	do	do	1917	12542	Q(FM)			0	3	15	55	89	98	2.60		110		do		
	do	do	1917	12543	Q(FM)			1	11	26	67	93	98	2.96		118		do		
	do	do	1917	12544	Q(FM)			1	14	29	63	90	98	2.95		118		do		
	do	do	1917	12545	Q(FM)			2	17	35	73	94	98	3.19		113		do		
	do	do	1917	12546	Q(FM)			4	22	37	66	89	97	3.15		118		do		
	do	do	1917	12549	Q(FM)			2	15	30	59	82	94	2.82		125		do		
	do	do	1917	12550	Q(FM)			2	15	29	55	81	94	2.76		122		do		
	do	do	1917	12557	Q(FM)			1	9	21	58	87	97	2.73		156		do		

[1] Magnesium sulfate test. [2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

MARYLAND—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
	Baltimore (Canton).	Comm.	1917	12558	Q(FM)			1	7	18	51	86	98	2.61		119		Tens.		
	do	do	1917	12559	Q(FM)			4	26	45	76	93	98	3.42		171		do		
	do	do	1917	12560	Q(FM)			2	11	21	51	85	96	2.66		135		do		
	do	do	1917	12561	Q(FM)			1	10	21	50	85	98	2.65		134		do		
	do	do	1917	12562	Q(FM)			0	1	5	38	82	97	2.23		109		do		
	do	do	1917	12563	Q(FM)			2	15	30	62	87	96	2.92		113		do		
	do	do	1917	12564	Q(FM)			1	7	16	40	81	97	2.42		105		do		
	do	do	1917	12565	Q(FM)			1	8	17	45	80	96	2.47		117		do		
	do	do	1918	12570	Q(FM)			4	26	44	70	90	96	3.30		137		do		
	do	do	1918	12571	Q(FM)			1	11	21	48	76	93	2.50		129		do		
	do	do	1918	12572	Q(FM)			1	4	11	42	81	96	2.35		115	144	do		
	do	do	1918	12573	Q(FM)			1	12	28	64	88	97	2.90		132		do		
	do	do	1918	12574	Q(FM)			3	18	31	56	80	93	2.81		126		do		
	do	do	1918	12575	Q(FM)			3	22	40	68	88	97	3.18		130		do		
	do	do	1918	12583	Q(FM)			2	15	30	61	89	97	2.94		121		do		
	do	do	1918	12584	Q(FM)			5	28	45	73	92	98	3.41		123		do		
	do	do	1918	12585	Q(FM)			3	18	35	68	90	97	3.11		123		do		
	do	do	1918	12586	Q(FM)			2	13	25	56	88	98	2.82		114		do		
	do	do	1918	12587	Q(FM)			4	20	36	64	90	98	3.12		118		do		
	do	do	1918	12588	Q(FM)			2	15	30	61	89	98	2.95		106		do		
	do	do	1918	12596	Q(FM)			2	18	33	64	90	97	3.04		118		do		
	do	do	1918	12597	Q(FM)			2	15	31	65	90	97	3.00		117		do		
	do	do	1918	12598	Q(FM)			3	20	38	72	93	98	3.24		118		do		
	do	do	1918	12599	Q(FM)			1	9	21	50	85	97	2.63		104		do		
	do	do	1918	12600	Q(FM)			1	3	11	44	84	97	2.40		97		do		
	do	do	1918	12601	Q(FM)			2	15	30	61	88	97	2.93		114		do		
	do	do	1918	12602	Q(FM)			4	25	45	77	93	98	3.42		110		do		
	do	do	1918	12870	Q(FM)			5	16	27	56	84	96	2.84		129	112	do		
	do	do	1918	12873	Q(FM)			5	15	25	48	83	97	2.73		105	99	do		
	do	do	1918	12874	Q(FM)			6	16	27	52	84	97	2.82		101	95	do		
	do	do	1918	14248	Q(FM)			2	17	33	58	83	93	2.86		100	93	do		
	do	do	1918	14262	Q(QzCScM)			5	28	51	73	86	96	3.39		121	121	do		
Cecil	Bacon Hill	Prosp.	1921	19209	Q(M)			0	0	2	58	86	95	2.41		105	116	do		
Do	do	do	1921	19210	Q(M)			0	1	3	45	84	96	2.29		100	101	do		
Do	do	do	1921	19279	Quartz			0	1	4	58	90	98	2.51		96	112	do		
Do	do	Local	1921	19411	do			0	2	15	80	95	99	2.91		109	109	do		
Do	do	do	1921	19412	do			0	8	36	93	98	99	3.34		115	118	do		
Do	Charlestown	Prosp.	1914	7959				0	1	9	52	92	98	2.52		117	143	do		
Do	do	do	1914	7960				0	0	6	42	87	98	2.33		106	123	do		
Do	do	Comm.	1917	12507	Quartz			1	8	16	44	87	97	2.53		121		do		
Do	Elkton	Prosp.	1924	24824	do			3	25	47	61	78	90	3.04	Low	92	97	do		
Do	do	do	1924	24825	do			3	22	36	57	73	85	2.76	High	93	93	do		
Do	do	do	1924	24826	do			5	23	39	63	77	86	2.93	Low	110	98	do		
Do	do	do	1924	24827	do			4	22	32	47	64	81	2.50	do	118	106	do		
Do	do	do	1924	24828	do			4	22	37	65	86	94	3.08	do	121	111	do		
Do	do	do	1924	24829	do			4	25	39	62	77	84	2.91	do	127	106	do		
Do	do	do	1924	24830	do			6	30	49	72	85	91	3.33	do	110	95	do		
Do	do	Comm.	1930	33237	QFGnM			2	15	37	67	93	99	3.13	do	104	102	do		
Do	Hunter's Bridge (Octararo Creek).	Prosp.	1920	16159	Q(MFMa)			0	7	22	66	88	94	2.77	High	85	86	do		
Do	North East	Comm.	1919	13911	Q(M)			4	23	43	66	86	97	3.19		102		do		
Do	do	do	1919	14903	Q(CMF)			2	20	37	62	78	94	2.93		133	116	do		
Charles	Indian Head	Local	1944	66301	QQzC		0.8	12	29	42	57	84	95	3.19	Low	102	104	Comp.		
Do	do	do	1945	67669	QQzC	2.60	.7	8	26	36	49	77	93	2.89	do	130	116	do		
Do	Mason Springs	do	1943	60841	QQzC	2.63	.5	12	27	35	46	77	93	2.90	do	89	92	do		
Harford	Aberdeen	Comm.	1936	42953	Quartz			4	23	45	65	92	97	3.26		127	117	Tens.		
Do	Abingdon	do	1937	44568	do		.7	11	24	37	56	88	95	3.11	Low	155	140	Comp.		
Do	Havre de Grace	do	1931	34073	GGnQF			1	12	35	67	86	95	2.96	do	112	119	Tens.		
Howard	Simpsonville (Middle Patuxent River).	Local	1920	17457	QFM			10	32	55	86	95	98	3.76		95	81	do		
Montgomery.	Silver Spring	do	1939	46760	Quartz		.7	8	23	35	53	88	96	3.03	Low	108	104	Comp.		

Do	do	Comm	1940	48826	do		.9	9	18	26	48	86	95	2.82	do	110	107	do		
Prince Georges.	Beltsville	Prosp	1938	46001	do		.8	0	0	0	4	78	93	1.75	do	199	178	do		
Do	do	Local	1938	46258	do		.7	0	0	10	38	85	93	2.26	do	114	109	do		
Do	do	do	1938	46259	QFS		.3	14	45	67	81	96	98	4.01	do	108	112	do		
Do	do	do	1939	46465	QQz		.6	3	11	22	52	88	96	2.72	do	94	92	do		
Do	do	Prosp	1940	49765	QQz	2.60	.9	11	22	34	54	87	94	3.02	do	117	103	do		
Do	Beltsville (Paint Branch).	Local	1938	46220	QFM		.7	7	20	35	58	89	96	3.07	High	99	97	do		
Do	do	do	1938	46272			.3	15	26	39	62	91	97	3.30	Low	91	87	do		
Do	do	do	1938	46328			.7	0	16	32	54	86	94	2.82		95	102	do		
Do	Berwyn	do	1950	80043	Quartz		.9	0	0	1	24	92	97	2.14	Low	114		do		
Do	Bowie	Comm	1929	31304	QM			4	16	33	53	86	96	2.88	do	112	109	Tens		
Do	do	do	1929	32196	QM			2	17	33	51	86	96	2.85	do	124	109	do		
Do	do	do	1929	32197	QM			2	17	33	50	86	96	2.84	do	121	112	do		
Do	do	Prosp	1938	46261	QM		1.3	0	9	17	32	79	92	2.29		112	105	Comp		
Do	do	do	1938	46262	QM		.7	0	14	23	40	84	94	2.55		120	109	do		
Do	do	do	1938	46273			.8	17	32	41	57	85	93	3.25	Low	138	116	do		
Do	do	do	1939	46531	QC		.6	0	0	0	3	75	94	1.72	do	117	129	do		
Do	do	Comm	1939	46565	QScFM		.7	1	15	28	46	83	96	2.69	do	115	112	do		
Do	Branchville	Local	1926	28166	Quartz			8	13	23	57	87	95	2.83	do	85	96	Tens		
Do	do	Comm	1934	40222	QFM	2.64	.5	1	11	27	44	86	98	2.67	do	105	112	do		
Do	do	do	1937	43199	Quartz		.4	13	33	44	59	90	98	3.37	High	119	131	Comp		
Do	do	do	1940	49410	QQz		.4	3	34	50	60	79	97	3.23	Low	106	106	do		
Do	do	do	1945	68857	Quartz	2.60	.8	4	14	23	43	82	95	2.61	do	144	122	do		
Do	do	do	1945	69098	do	2.62	.6	0	0	1	11	66	96	1.74	do	112	117	do		
Do	do	do	1945	69259	QQz	2.59	.9	3	12	20	38	82	95	2.50	do	125	111	do		
Do	do	do	1945	69260	QS	2.61	.6	0	0	6	26	64	88	1.84	do	107	109	do		
Do	do	do	1946	72367	QQz	2.59	1.0	2	11	19	38	80	94	2.44	do	111	103	do		
Do	do	do	1949	77271	Quartz		.3	0	0	2	15	52	96	1.65	do	114		do	5.4	16–50
Do	Camp Springs	do	1943	62728	QQzC		.5	2	16	30	47	74	96	3.64	do	120	113	do		
Do	do	do	1944	63440	QQzC	2.59	.8	4	17	28	39	87	98	2.73	do	106	105	do		
Do	do	do	1944	63803	QQzC	2.58	1.8	9	25	36	46	81	97	2.94	do	110	106	do		
Do	do	do	1944	63805	QQzC	2.60	.7	4	16	25	31	80	97	2.53	do	102	107	do		
Do	do	do	1944	64675	QQzC	2.59	.9	8	25	37	55	83	96	3.04	do	126	108	do		
Do	do	do	1944	65635	QQzC		.6	2	15	23	43	84	97	2.64	do	113	106	do		
Do	do	do	1944	65884	QQzC		.7	5	22	31	48	83	97	2.86	do	109	92	do		
Do	do	do	1949	77584	Q(QzSCMa)	2.61	.6	2	13	22	41	82	88	2.48	do	112		do	1.4	4–50
Do	do	do	1949	78482	QQz(ScM)	2.61	1.3	3	20	35	53	82	94	2.87	High	108		do	2.8	4–50
Do	do	do	1949	79172	QQzC	2.58	1.1	1	17	37	62	86	94	2.97					3.4	4–50
Do	Cheverly	Local	1923	24168	Quartz			2	3	3	19	68	89	1.84	High	82	89	Tens		
Do	do	Prosp	1923	24178	do			0	1	2	24	62	70	1.59	do	76	90	do		
Do	do	do	1923	24216	do			0	1	2	20	74	90	1.87	do	89	91	do		
Do	Chillum	Local	1948	76042		2.59	.9	1	2	3	19	85	96	2.06	Low	92		Comp	1.0	16–50
Do	do	do	1948	76703			1.4	0	0	2	15	80	93	1.90	do	127	107	do	1.5	16–50
Do	Clinton	Comm	1943	63268	QQzC	2.59	.9	0	7	15	43	94	99	2.58	do	105	103	do		
Do	do	do	1946	71545	QQzC	2.62	.7	1	7	11	48	85	97	2.49	do	104	105	do		
Do	do	do	1946	71556	QQzC	2.62	.8	0	7	23	50	84	96	2.60	do	108	104	do		
Do	do	do	1946	72300	QQzC	2.58	.9	0	11	33	66	89	96	2.95	do	103	92	do		
Do	do	do	1947	74097	QQzSC		1.1	0	12	35	66	90	97	3.00	do	112	100	do	.4	4–50
Do	District Heights	Local	1947	72834	QQzC	2.60	.8	0	17	33	62	93	99	3.04		116	114	do		
Do	do	Comm	1949	77778	Quartz	2.60	.8	0	14	27	47	80	94	2.62	Low	132		do	.8	4–50
Do	do	do	1949	79279	QQzC	2.61	.7	0	9	26	51	86	95	2.67					.8	4–50
Do	Fox's Ferry	Local	1938	44867	Quartz			0	0	1	8	69	88	1.66	Low	100	109	Tens		
Do	Hillside	Comm	1943	63380	QQzC	2.60	.7	0	12	25	47	91	99	2.74	do	105	96	Comp		
Do	do	do	1944	64011	QQzC		.8	0	0	2	18	88	98	2.06	do	106	101	do		
Do	do	do	1944	64303	QC	2.60	.8	0	13	33	56	92	98	2.92	do	93	91	do		
Do	Hyattsville	Prosp	1924	26004	QM			4	19	31	57	81	92	2.84	High	97	100	Tens		
Do	Landover	Comm	1945	68671	Quartz	2.57	1.1									125	114	Comp		
Do	do	do	1949	77255	do		1.4	0	1	2	4	57	92	1.56	Low	133		do	1.5	30–50
Do	Lanham	Local	1949	77223			1.1	0	0	0	2	48	92	1.42	do	141	118	Tens	5.9	30–50
Do	Laurel	Comm	1938	46221	Quartz		.7	7	33	52	73	93	96	3.54	do	130	118	Comp		
Do	do	do	1938	46222	do		.7	9	25	39	59	91	96	3.19	do	131	122	do		
Do	do	do	1945	68434	do	2.58	1.0	0	6	17	38	87	97	2.45	do	131	124	do		
Do	do	do	1946	70565	do	2.60	1.3	0	0	3	27	73	91	1.94	do	116	97	do		
Do	do	do	1946	72259	QQz	2.62	.5	2	13	27	51	91	98	2.82	do	103	100	do		
Do	do	do	1950	81058	Quartz		.5	0	0	0	7	78	97	1.82		128		do		
Do	Piscataway (Piscataway Creek).	do	1933	34978	Q(C)			0	9	31	53	91	99	2.83	Low	117	126	Tens		
Do	do	do	1934	40183	QC	2.60	.7	0	8	23	42	82	97	2.52	do	133	134	Comp		
Do	Silver Hill	do	1942	56261	QQzC	2.57	1.2	6	18	33	54	85	95	2.91	do	98	88	do		
Do	do	do	1943	62425	QQzC	2.58	.9	4	21	35	50	82	95	2.87	do	117	109	do		
Do	do	do	1943	62530	QQzC		.8	8	25	39	56	84	96	3.08	do	130	121	do		
Do	do	do	1943	62839	Quartz		1.5	0	1	2	3	27	85	1.18	do	159	129	do		
Do	do	do	1943	62917	QQzC	2.59	.8	4	20	33	45	84	96	2.82	do	138	120	do		
Do	do	do	1943	63239	QQzC		.7	0	1	3	19	87	97	2.07	do	119	97	do		
Do	do	do	1944	63829	QQzC	2.59	1.0	4	15	21	31	72	94	2.37	do	136	124	do		
Do	do	do	1944	63951	QQzC		1.1	5	18	26	35	75	95	2.54	do	129	110	do		
Do	do	do	1944	64133	QQzC	2.57	1.2	1	4	8	12	62	90	1.77	do	151	123	do		
Do	do	do	1944	64169	QQzC	2.52	1.8	6	24	37	45	86	95	2.93	do	127	101	do		

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

MARYLAND—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Prince Georges.	Silver Hill	Comm.	1944	66832	QQzC	2.60	0.8	5	20	31	53	86	97	2.92	Low	132	103	Comp.		
Do	do	do	1945	67239	QQzC	2.61	.7	4	20	36	62	87	97	3.06	do	104	92	do		
Do	do	do	1945	67240	QQzC	2.61	.6	3	14	24	51	84	97	2.73	do	99	81	do		
Do	do	do	1945	67527	QQzC		.7	3	15	29	57	85	97	2.86	do	121	106	do		
Do	do	do	1945	67539	QQzC		.7	3	16	32	59	85	96	2.91	do	122	109	do		
Do	do	do	1945	67635	QQzC		.7	4	20	35	61	89	97	3.06	do	127	110	do		
Do	do	do	1945	67659	QQzC		.7	4	18	33	62	88	97	3.02	do	130	115	do		
Do	do	do	1945	68137		2.58	.9	1	15	30	56	87	98	2.87	do	126	124	do		
Do	do	do	1945	68381	QQzC	2.60	.8	5	20	29	49	84	97	2.84	do	118	110	do		
Do	do	do	1946	70357	Q(CS)		1.0	6	22	32	53	92	98	3.03	do	133	114	do		
Do	do	do	1946	71181	QC	2.61	.9	0	1	12	44	85	98	2.40	do	107	109	do		
Do	do	do	1946	71213	QQzC	2.61	1.0	2	10	21	47	82	96	2.58	do	110	104	do		
Do	do	do	1946	72118	QQzC	2.54	1.6	3	20	37	62	89	96	3.07	do	118	114	do	4.6	4–50
Do	do	do	1946	72195	QQzC	2.61	.6	6	17	25	46	77	97	2.68	do	109	109	do		
Do	do	do	1947	73259	do	2.58	.9	2	16	31	59	91	98	2.97	do	102	100	do		
Do	do	do	1948	75127	QCS	2.57	1.2	1	17	35	59	87	97	2.96	do	106	104	do	3.5	4–50
Do	do	do	1948	76272	Q(QzC)		1.0	0	8	26	55	89	98	2.75	do	119	108	do	1.7	4–50
Do	do	do	1949	79257	Q(SCQz)		.7	0	12	36	68	92	98	3.06	do	112		do	1.0	4–50
Do	Tuxedo	Prosp.	1923	24176	Quartz			4	5	6	7	27	69	1.18	do	90	92	Tens.		
Do	do	do	1923	24177	QM			2	9	27	70	86	91	2.85	High	85	93	do		
Queen Annes	Barclay	do	1920	17385	Q(MF)			0	1	3	21	60	88	1.73		109	98	do		
Do	Sandtown	do	1923	23838	Q(CF)			6	13	22	56	89	97	2.83	High	82	83	do		
Somerset	Manokin	Local	1923	24437	QF			2	12	28	57	84	98	2.81	Low	154	127	do		
Do	Princess Anne	Prosp.	1916	9934	Quartz			0	0	0	8	60	96	1.64		67	70	do		
Do	do	do	1916	10161	do			1	6	13	59	95	100	2.74		120	113	do		
Talbot	Easton	do	1916	10010	do			0	0	0	2	42	100	1.44		84	85	do		
Do	McDaniel	do	1917	11363	do			0	0	0	1	86	99	1.86		68	80	do		
Do	do	do	1917	11393	do			0	0	2	20	98	100	2.20		81	87	do		
Wicomico	Pittsville	Local	1925	26964	do			0	0	2	14	57	88	1.61	Low	74	77	do		
Do	Salisbury	do	1925	26904	do			0	0	2	16	64	92	1.74	do	73	71	do		
Do	do	do	1932	34653	do		1.2	0	0	2	9	53	90	1.54	do	89	88	do		
Worcester	Berlin	do	1919	14055	Q(F)			1	7	28	85	97	99	3.17		88	87	do		
Do	do	do	1919	14180	Q(F)			0	3	16	56	84	97	2.56		84	78	do		
Do	do	do	1919	14181	Q(F)			0	1	11	57	86	99	2.54		112	98	do		
Do	Snow Hill	do	1920	17384	Q(MF)			0	0	1	9	31	76	1.17		82	89	do		

MASSACHUSETTS

Berkshire	Ashley Falls	Comm.	1947	73521	QGQzSc			3	19	38	68	87	95	3.10	Low	102	103	Tens.	2.6	4–50
Do	Dalton	do	1939	46820	QGnScS		0.7	12	28	42	57	75	93	3.07	do	109	102	Comp.		
Do	Pittsfield	do	1920	17010	QSc			14	31	43	64	79	87	3.18		86	105	Tens.		
Bristol	Seekonk	do	1930	33026	SQSl			5	22	40	66	83	91	3.07	Low	131	124	do	[2] 2.6 [3] 14.5	4–50 4–50
Do	do	do	1948	75633	QScGnGSl	2.56	2.0	3	18	37	60	82	93	2.93	do	121	117	do	1.6	4–50
Essex	Rowley	Local	1922	21800	QSGGnSc			3	22	41	72	85	92	3.15	do	157	149	do		
Hampden	North Wilbraham	Comm.	1920	17009	QFMMa			1	8	20	52	78	92	2.51		83	75	do		
Do	do	do	1921	18929	QGFMa			1	8	18	59	89	96	2.71	High	82	77	do		
Do	do	do	1921	18952	QFGMaM			2	16	29	62	91	98	2.98		106	98	do		
Do	do	do	1921	18953	QFGMaM			6	17	29	53	84	97	2.86		103	95	do		
Do	do	do	1922	21745	QFM			1	9	22	56	80	94	2.62		104	105	do		
Do	do	do	1924	24540	QFMMa			5	12	31	68	89	96	3.01		107	98	do		
Do	do	do	1924	25926	QFGnG			3	12	26	68	90	96	2.95	Low	108	95	do		
Do	do	do	1924	25927	QFGnG			4	13	28	70	91	97	3.03	do	110	91	do		
Do	do	do	1924	25928	Gneiss [2]			6	21	35	55	70	82	2.69	do	121	110	do		
Do	do	do	1924	25929	QFGnG			4	13	27	71	92	98	3.05	do	109	107	do		
Do	do	do	1924	26376	QFMG			4	13	27	59	81	94	2.78	do	89	85	do		
Do	do	do	1924	26377	QFMG			6	21	39	72	91	97	3.26	do	96	95	do		
Do	do	do	1924	26378	QFMG			5	20	39	74	91	96	3.25	do	78	75	do		
Do	do	do	1924	26379	QFMG			4	17	36	71	90	96	3.14	do	92	91	do		
Do	do	do	1924	26380	QFMG			6	20	39	71	89	95	3.20	do	92	94	do		
Do	do	do	1924	26381	QFMG			4	17	35	71	91	97	3.15	do	86	84	do		
Do	do	do	1924	26382	QFMG			6	21	41	77	95	99	3.39	do	94	93	do		

Do	do	do	1924	26383	QFMG			4	16	35	74	94	99	3.22	do	98	90	do		
Do	do	do	1924	26384	QFMG			3	16	24	73	93	98	3.07	do	90	92	do		
Do	do	do	1927	29253	QFM			6	18	39	73	89	96	3.21	do	119	129	do		
Do	do	do	1929	31313	QFG			4	13	32	61	89	97	2.96	do	95	97	do		
Hampshire	Goshen	Local	1920	16871	QMMa			6	15	27	49	69	88	2.54		109	111	do		
Do	do	do	1920	16872	QMMa			8	19	37	62	73	83	2.82		109	111	do		
Do	do	do	1920	16873	QMMa			9	19	33	56	72	84	2.73		120	110	do		
Middlesex	Newton Center	Comm	1923	23648	QF			1	8	17	39	62	81	2.08	Low	92	92	do		
Do	Shirley	Local	1920	17900	QFM			7	18	37	80	91	95	3.28	do	99	87	do		
Do	do	do	1920	17901	QFM			9	19	38	76	88	93	3.23	do	91	90	do		
Plymouth	Scituate	Comm	1923	23126	QSC(FM)			1	9	26	75	91	98	3.00	do	105	99	do		
Do	do	do	1929	31303	Q(FSGSI)			6	16	31	54	83	97	2.87	do	127	114	do		
Suffolk	Boston	Local	1916	11083	QGQzGn			1	7	19	46	66	83	2.22		98	102	do		
Worcester	Fitchburg	do	1920	17001	QFM			1	9	23	53	75	87	2.48	High	68	63	do		
Do	Holden	do	1923	23649	QFM			0	4	12	38	74	95	2.23	Low	[3] 89	94	do		
Do	Lunenberg	Prosp	1919	15405	Quartz			1	7	17	40	54	63	1.82	High		50	do		
Do	do	Local	1920	16973	Q (FM)			1	10	27	68	88	97	2.91	do	62	51	do		
Do	South Barre	Prosp	1921	18675	QFGM			1	9	27	65	84	94	2.80	do	76	89	do		
Do	Southbridge	do	1920	15981	QFM			2	19	38	61	76	90	2.86	Low	117	117	do		

MICHIGAN

Baraga	Michigamme	Local	1946	72581	GDiQMaMSc	2.66	0.6	13	28	40	54	77	95	3.07	High	136	119	Comp		
Barry	Hastings	Comm	1930	33048	QCLS			3	19	37	54	79	95	2.87	Low	132	138	Tens		
Benzie	Honor	Local	1927	29328	LQS	2.64		2	18	33	65	92	97	3.07	do	110	93	do		
Berrien	Buchanan	do	1933	34955	QCLSGSh			5	22	36	63	90	98	3.14	do	141	129	do		
Branch	Athens	Comm	1930	33047	LQCS			4	18	37	56	84	95	2.94	do	136	133	do		
Charlevoix	Bayshore	Local	1921	19471	LDQC			5	36	51	81	89	93	3.55	do	115	97	do		
Do	Boyne City	do	1924	26041	QL			4	24	32	49	79	92	2.80	do	109	113	do		
Do	Charlevoix	do	1929	32287	LCQ			3	22	43	80	96	99	3.43	do	130	113	do		
Chippewa	Pickford	do	1929	32314	QSLCF			1	3	15	57	93	98	2.67	do	134	120	do		
Clare	Clare	do	1933	34909	LCS			5	30	47	70	90	98	3.40	do	162	161	do		
Clinton	Saint Johns	Comm	1929	31700	LSCQ			8	37	60	78	91	96	3.80	do	153	141	do		
Emmet	Levering	Local	1933	34914	Q(LC)			3	15	23	54	90	99	2.84	do	117	114	do		
Gogebic	Bessemer	Comm	1946	70917	QzGQSL	2.71	1.4	0	3	28	60	91	99	2.81	do	94	100	do	13.9	4–50
Houghton	Calumet	Local	1946	70193	QGDiFSM										High	125	108	do		
Do	Point Mills	Prosp	1923	22800	FQGRL			1	11	25	59	80	95	2.71		100	102	do		
Huron	Bay Port	Comm	1931	34507	Limestone [2]			2	18	41	64	80	92	2.97		143	133	do	[4] 24.0 [5] 4.0	3–50 3–50
Iron	Crystal Falls	Local	1931	34095	QSCF			0	3	17	46	91	99	2.56	Low	111	100	do		
Kalamazoo	Kalamazoo	Comm	1918	13408	QCGSL			11	40	68	93	99	100	4.11		167	166	do		
Do	do	do	1919	14634	QLCS			2	24	51	78	91	97	3.43		122	146	do		
Do	do	do	1919	14637	QGLC			3	30	60	88	94	96	3.71		109	122	do		
Do	do	do	1928	30787	QCL			0	8	32	72	91	98	3.01	Low	111	133	do		
Do	do	do	1928	30788	QCL			2	19	45	70	86	94	3.16	do	134	135	do		
Do	do	do	1929	31351	QCLSG			12	51	71	88	97	100	4.19	do	132	135	do		
Kent	Grand Rapids	do	1921	18662	QFGSLMMa			1	10	19	41	79	98	2.48	High	117	102	do		
Do	do	do	1928	30703	QCLSSI			12	37	54	70	86	97	3.56	Low	139	141	do	2.7	⅜″–100
Do	do	do	1928	30790	QCL			4	17	33	56	91	98	2.99	do	108	127	do		
Do	do	do	1929	31310	QCSLGSI			7	24	40	65	89	97	3.22	do	123	126	do		
Lapeer	Brown City	Local	1932	34720	LQCSGF			4	18	32	50	80	97	2.81	do	147	151	do		
Lenawee	Clinton	Prosp	1925	26688	QCL			5	14	29	67	87	96	2.98	do	133	112	do		
Do	Tecumseh	Comm	1921	20482	QCSL			6	17	33	62	90	97	3.05	do	139	131	do		
Do	do	do	1922	21709	QCLSFG			4	23	43	73	92	97	3.32	do	147	144	do		
Do	do	do	1923	24199	QCL			2	21	42	72	92	98	3.27	do	139	141	do		
Do	do	do	1928	30706	QCLSSI			4	15	29	47	77	97	2.69	do	127	123	do	6.2	4–100
Livingston	Green Oak	do	1919	14653	QCL			1	12	27	61	85	97	2.83		120	127	do		
Do	do	do	1928	31203	QCLS			2	15	35	66	90	98	3.06	Low	149	136	do		
Do	do	do	1929	31308	QCLS			0	4	20	58	90	99	2.71	do	120	130	do		
Manistee	Saile	Local	1925	26748	QLC			9	16	36	59	86	97	3.03	do	111	109	do		
Marquette	Champion	Comm	1919	14477	QFMaGQz			4	28	40	71	83	95	3.21		119	108	do		
Mecosta	Barryton	do	1940	52546	QGDoC	2.63	1.0	1	23	44	57	90	98	3.13	Low	100	108	Comp		
Monroe	Monroe	do	1931	34111	Limestone [2]			0	9	37	79	92	95	3.12		109	104	Tens	[4] 18.0	¼″–50
Do	do	do	1933	34845	do.[2]		2.6	0	4	41	71	90	94	3.00					8.6 [1] 21.9	4–50 4–50
Do	do	do	1935	40975	do.[2]			1	14	39	81	92	95	3.22		107	124	Tens	21.1	3–100
Do	do	do	1935	40976	do.[2]			1	13	37	81	91	94	3.17		106	117	do	20.9	3–100
Do	do	do	1935	42109	do.[2]														19.5	⅜″–100
Muskegon	Whitehall	do	1928	30789	QCL			6	8	17	57	73	98	2.59	Low	98	115	do		
Oakland	Oxford	do	1928	30606	QCLS			4	18	39	67	91	98	3.17	do	131	131	do		
Do	do	do	1928	30607	QCLS			2	17	36	61	89	98	3.03	do	141	150	do		
Do	do	do	1929	31309	QCLS			0	4	21	61	89	98	2.73	do	127	133	do		
Presque Isle	Rogers City	do	1936	42761	Limestone [2]			0	12	48	70	89	96	3.15					15.8	4–100
Schoolcraft	Port Inland	do	1931	34088	do.[2]			1	9	32	66	85	94	2.87		138	136	Tens	[4] 7.5	3–50
Do	do	do	1935	42124	do.[2]			3	20	44	76	88	94	3.25		158	141	do	5.6	4–100
Tuscola	Cass City	do	1925	26879	QCL			4	23	44	76	94	98	3.39	Low	149	119	do		
Washtenaw	Ann Arbor	Local	1919	14898	QSG			5	28	51	77	87	96	3.44		126	139	do		
Do	do	Comm	1920	16259	QLC			2	12	25	47	70	91	2.47		132	135	do		

[1] Magnesium sulfate test. [2] Crushed. [3] 150 cycles, freezing and thawing. [4] 10 cycles, sodium sulfate test. [5] 20 cycles, freezing and thawing.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

MINNESOTA

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.			Pct.	Pct.		Pct.	Sieve No.
Blue Earth	Mankato	Comm.	1922	21632	QLGSC			13	20	30	60	87	97	3.07	Low	120	121	Tens.		
Clay	Moorhead	do	1922	22351	LGDoC			3	23	41	72	88	94	3.21	do	151	114	do		
Do	do	do	1922	22352	QLF			0	0	10	50	81	92	2.33	do	97	92	do		
Grant	Thorsborg	do	1922	21254	QLFG			5	21	33	61	86	96	3.02	do	121	108	do		
Kandiyohi	New London	Local	1921	20304	QLFG			5	20	34	64	85	97	3.05	do	108	111	do		
Do	Willmar	Comm.	1922	22521	QLFG			5	21	42	75	92	98	3.33	do	159	150	do		
Lyon	Tracy	do	1921	18868	QLGSFMa			1	11	26	54	76	93	2.61	High	112	99	do		
Do	do	do	1921	18869	QLGF			1	12	25	54	77	91	2.60	do	111	108	do		
Do	do	do	1921	18882	QGRs			2	13	29	64	90	97	2.95	do	94	79	do		
Polk	Melvin	do	1921	20030	LDoG			10	64	79	89	94	97	4.33	Low	175	138	do		
Do	do	do	1921	20032				0	0	17	82	90	98	2.87	do	93	93	do		
Do	do	do	1921	20033				0	0	9	11	33	96	1.49	do	62	60	do		
Do	do	do	1921	20137	QDoGC			4	26	46	72	86	96	3.30	do	140	142	do		
Do	do	do	1924	24711	QDoLG			9	42	63	80	90	96	3.80	do	147	134	do		
Red Lake	Red Lake Falls	Local	1921	19060	QLG			3	22	41	65	84	93	3.08	do	129	123	do		
Do	do	do	1921	19064	QDoG			5	29	50	74	86	90	3.34	do	133	118	do		
Rock	Luverne	Comm.	1940	51292	QL(QzT)	2.62	0.8	0	3	21	55	88	98	2.65	do	102	123	Comp.		
Do	do	do	1941	51960	QQz(T)	2.61	1.1	1	6	24	54	87	98	2.70	do	95	117	do		
Saint Louis	Duluth	do	1920	16286	QFCMa			5	11	19	50	86	98	2.69		121	110	Tens.		
Swift	Appleton	do	1921	19609	GLQCS			3	21	41	77	94	97	3.33	Low	133	122	do		
Do	do	Local	1921	19989	QLDoCG			2	20	38	71	92	98	3.21	High	142	117	do		
Do	do	do	1921	20134	LQGF			1	18	37	72	89	97	3.14	Low	115	123	do		
Washington	Saint Paul Park	Comm.	1924	26040	QG			1	16	35	77	89	94	3.12	do	109	111	do		
Winona	Winona (Mississippi River).	Local	1920	17021	Q(CMa)			0	0	5	33	81	98	2.17	High	64	60	do		

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Adams	Natchez	Prosp.	1919	14726	QC			4	23	39	62	89	96	3.13		101	107	Tens.		
Do	do	do	1919	14729	QC			5	31	50	76	92	95	3.49		117	124	do		
Do	do	Comm.	1938	44983	QC		0.3	0	13	29	51	92	99	2.84		104	104	Comp.		
Do	Selma	Prosp.	1919	14727	QC			3	22	35	60	84	91	2.95		96	106	Tens.		
Do	Washington	Comm.	1937	44626	QC	2.60	.4	4	20	33	49	90	99	2.95	Low	125	114	Comp.		
Do	do	do	1938	44908	QCF		.6	3	11	18	32	87	99	2.50		124	121	do		
Amite	Stephenson	do	1935	38397	QC	2.62	.3	3	12	25	37	79	96	2.52		120	129	Tens.		
Do	do	do	1935	42438	QC	2.62	.4	2	10	23	40	82	98	2.55	Low	110	115	do	3.3	4–100
Do	do	do	1935	42462	QC		.3	2	13	29	46	85	98	2.73	do	122	119	Comp.		
Do	do	do	1935	42492	QC		.6	3	13	26	42	92	99	2.75	do	114	105	do		
Do	do	do	1935	42495	QC(F)		.6	3	15	28	41	85	97	2.69	do	102	102	do		
Do	do	do	1935	42497	QC		.4	2	13	27	44	90	98	2.74	do	107	98	do		
Do	do	do	1935	42572	QC		.5	2	10	24	41	87	98	2.62	do	111	113	do		
Do	do	do	1935	42573	QC		.5	3	11	24	41	85	97	2.61	do	113	115	do		
Do	do	do	1935	42574	QC		.5	3	13	24	37	85	98	2.60	do	113	115	do		
Do	do	do	1935	42595	QC		.4	2	11	22	35	83	97	2.50	do	106	103	do		
Do	do	do	1935	42609	QC		.4	3	12	24	39	83	97	2.58	do	110	105	do		
Claiborne	Carlisle	do	1937	44615	QC		.2	3	11	22	45	90	99	2.70	do	114	106	do		
Do	do	do	1938	46331	QC		.2	2	11	24	53	93	99	2.82	do	106	109	do		
Do	Saint Elmo	do	1937	44807	Q(CF)	2.61	.3	5	14	23	42	91	99	2.73	do	88	100	do		
Do	do	do	1938	44843	QCF	2.61	.3	3	9	19	42	93	100	2.66		110	102	do		
Do	do	do	1938	44918	Q(C)		.3	3	12	24	44	89	99	2.71		103	104	do		
Do	do	do	1938	44919	Q(C)		.3	2	6	13	33	89	100	2.43		104	98	do		
Do	do	do	1939	46555	QC	2.62	.3	4	11	23	55	91	99	2.83	Low	86	94	do		
Copiah	Crystal Springs	do	1935	40842	QC											98	88	do		
Do	do	do	1935	42037	QC		.5									88	87	do		
Do	do	do	1935	42094	QC		.6									111	103	do		
Do	Myles	do	1930	33226	QC	2.63		3	13	26	47	87	99	2.75	Low	126	112	Tens.		
Do	do	do	1936	43040	QC(F)		.3	3	10	20	44	87	99	2.63	do	110	112	Comp.		
Do	do	do	1940	49461	QC	2.64	.4	0	5	15	49	93	99	2.61	do	85	85	do		
Do	do	do	1940	50084	QC		.4									110	104	do		
Forrest	Hattiesburg	do	1919	14963	Q(CF)			0	3	14	52	83	98	2.50		100	111	Tens.		
Do	do	do	1919	15262	Q(F)			0	1	7	34	79	99	2.20		87	95	do		
Do	do	do	1922	22317	QC			0	5	17	53	86	97	2.58	Low	91	97	do		
Do	do	do	1923	23439	QC			2	12	25	61	92	99	2.91	do	141	137	do		
Do	do	do	1923	23531	Q(CF)			0	7	20	62	93	99	2.81	do	122	123	do		
Do	do	do	1923	23687	Q(C)			4	15	26	56	89	98	2.88	do	121	117	do		

Do	do	do	1924	24474	Q(CF)			0	4	14	62	95	100	2.75	do	123	119	do	
Do	do	do	1924	24539	Q (C)			6	22	37	67	93	99	3.24	do	144	126	do	
Do	do	do	1924	24638	Q(C)			3	13	26	60	92	99	2.93	do	116	110	do	
Do	do	do	1925	25118	Quartz			2	6	16	49	84	97	2.54	do	130	132	do	
Do	do	do	1926	28225	QC			3	15	24	54	95	99	2.90	do	109	109	do	
Do	do	do	1926	28226	QC			4	20	33	59	95	100	3.11	do	113	128	do	
Do	do	do	1927	29239	QC			0	0	9	50	82	96	2.37					.8 3-50
Do	do	do	1931	33297	QC			0	7	27	66	93	99	2.92	Low	143	114	Tens	
Do	do	do	1931	33298	QC			0	0	10	52	95	100	2.57	do	132	112	do	
Do	do	do	1939	46904	QC			7	19	29	49	90	99	2.93	do	115	115	do	
Do	do	do	1939	46905	QQzC			0	3	21	51	89	98	2.62	do	122	122	do	
Hancock	Logtown (Pearl River).	do	1928	30794	QC	2.65		1	8	18	34	85	100	2.46	do	108	118	do	
Do	do	do	1928	30795	QC	2.64		3	10	16	25	79	98	2.31	do	88	91	do	
Hinds	Institute	do	1938	44915	QC	2.62	.3	3	12	22	39	86	99	2.61		112	108	Comp	
Do	Jackson	do	1937	44524	QC		.3	2	7	15	35	81	98	2.38	Low	111	111	do	
Do	do	do	1939	46602	Quartz		.4	2	10	15	23	85	97	2.32	do	92	100	do	
Do	Myles	do	1929	31479	do			1	6	13	29	83	100	2.32	do	108	105	Tens	
Do	do	do	1929	31624				1	8	15	30	82	99	2.35	do	104	100	do	
Holmes	Lexington	do	1940	48948	QC		.6	3	14	26	47	87	99	2.76	do	91	91	Comp	
Do	do	do	1940	50683	QC	2.61	.5	3	7	17	38	86	98	2.49	do	111	107	do	
Do	do	do	1948	74666	QC	2.63	.3	0	1	11	46	91	100	2.49	do	94	91	do	1.3 8-50
Do	do	do	1948	75093	QC		.4	1	7	19	45	84	99	2.55	do	116	113	do	1.9 4-50
Do	do	do	1948	75978	QC	2.62	.5	2	11	21	38	81	98	2.51	do	123	121	do	3.3 4-50
Do	Tchula	do	1940	52352	QC	2.61	.4	3	13	21	39	81	99	2.56	do	94	87	do	
Do	do	do	1941	52720	QC	2.62	.3	1	3	7	24	76	98	2.09	do	101	105	do	
Do	do	do	1941	54918	QC	2.61	.5	5	15	24	42	84	100	2.70	do	90	93	do	
Itawamba	Fulton	Local	1922	22314	QC			10	25	29	36	68	93	2.61	do	129	101	Tens	
Lawrence	Wanilla	Comm	1938	46127	Quartz	2.64	.1	2	7	16	39	86	97	2.47		96	97	Comp	
Leake	Carthage	Local	1923	23791	Q(FM)			0	0	1	17	60	86	1.64	Low	95	86	Tens	
Leflore	Greenwood (Yazoo River).	Prosp	1916	11135	QC			0	0	2	31	87	99	2.19		94	94	do	
Lincoln	Brookhaven	Comm	1922	22336	QC			4	16	23	45	93	98	2.79	Low	128	133	do	
Do	do	do	1923	24154	QC			7	26	35	56	95	99	3.18	do	138	120	do	
Do	do	do	1924	24468	QC			1	3	6	27	89	99	2.25	do	110	114	do	
Do	do	do	1927	29235				7	20	31	61	96	99	3.14					.9 3-50
Do	do	do	1948	76031	Q(C)			0	1	4	24	89	98	2.16					3.3 8-50
Lowndes	Columbus	do	1922	22319	QC			10	26	35	52	82	94	2.99	Low	137	145	Tens	
Do	do	do	1922	22339	QC			2	12	20	42	91	98	2.75	do	136	142	do	
Do	do	do	1923	24151	QC			13	31	40	58	86	96	3.24	do	141	126	do	
Do	do	do	1924	24998	QC			0	5	15	48	87	98	2.53	do	126	120	do	
Do	do	do	1927	29240	Q(C)			0	3	11	50	88	99	2.51					.6 3-50
Do	do	do	1938	46319	QC	2.62	.4	2	11	23	44	93	99	2.72	Low	103	105	Comp	
Do	do	do	1941	52919	QC	2.61	.5	5	21	30	43	84	99	2.82	do	115	109	do	
Do	do	do	1948	74999	QC		.7	2	13	23	44	88	99	2.69	do	115	124	do	2.0 4-50
Do	do	do	1948	75905	QC	2.57	1.2	4	17	28	44	84	99	2.76		111	105	Tens	1.1 4-50
Do	do	do	1948	76029	QC	2.60	.8	1	9	17	37	91	99	2.54					2.5 4-50
Do	do	do	1948	76285	QC	2.60	.9	3	14	22	37	77	97	2.50	Low	105	110	Comp	.4 4-50
Marion	Condron	do	1924	26010	Q(C)			3	19	36	68	96	99	3.21	do	132	117	Tens	
Do	do	do	1924	26018	Q(C)			5	15	25	59	93	98	2.95	do	125	118	do	
Do	do	do	1924	26026	QC			5	15	23	48	95	99	2.85	do	106	109	do	
Monroe	Aberdeen	do	1948	75043	QC											113	116	do	
Do	do	do	1948	75211	QC		1.6	2	14	26	43	83	98	2.66	Low	109	115	do	2.6 4-50
Do	Amory (Tombigbee River).	do	1924	26078	Q(C)			1	7	11	24	62	95	2.00	do	81	81	do	
Do	do	do	1924	26079	QC			2	9	14	27	67	97	2.16	do	92	93	do	
Do	do	do	1924	26135	Q(C)			1	7	13	30	72	97	2.20	do	84	98	do	
Do	do	do	1924	26353	Q(C)			1	9	16	34	69	97	2.26	do	105	88	do	
Do	do	do	1940	51241	QC	2.59	.5	2	21	35	49	84	98	2.89	do	118	107	Comp	
Panola	Batesville	do	1921	18758	Q(FM)			0	0	0	1	6	69	.75	High	69	80	Tens	
Pike	Magnolia (Clear Creek).	Local	1922	20962	Q			1	12	21	42	84	98	2.58	Low	102	95	do	
Do	do	do	1922	21068	QC			1	7	16	41	81	95	2.41	do	107	115	do	
Tishomingo	Golden	Comm	1924	26012	Q(CM)			5	14	17	28	81	94	2.39	do	106	103	do	
Warren	Vicksburg (Mississippi River).	do	1920	17333	Q(FMa)			0	1	4	25	86	98	2.14		89	87	do	
Do	do	do	1937	44672	QCF		.3	2	8	14	32	88	99	2.43	Low	106	105	Comp	
Washington	Greenville (Mississippi River).	do	1916	10468	QC			1	9	23	66	95	98	2.92		135	127	Tens	
Do	do	do	1916	10469	QC			0	8	22	68	97	100	2.95		128	132	do	
Do	do	Local	1919	14177	Quartz			2	11	14	41	86	95	2.49		78	88	do	
Do	do	do	1919	14442	do			4	36	53	72	90	96	3.51		140	139	do	
Do	do	do	1919	14443	QC(Ma)			1	11	27	64	89	96	2.88		110	112	do	
Do	do	Comm	1932	34662	QCFS			2	11	24	50	95	99	2.81	High	122	118	do	
Yazoo	Yazoo City (Yazoo River).	Local	1923	23008	Q(F)			3	7	10	41	88	98	2.47	Low	105	93	do	
Do	do	do	1923	23010	QC			2	11	15	40	82	92	2.42	do	102	91	do	
Do	do	do	1923	23147	Q(Sh)			7	13	17	58	92	97	2.84	High	91	89	do	
Do	do	do	1923	23681	Q(C)	2.66		9	15	19	58	91	97	2.89	do	98	91	do	
Do	do	do	1923	24532				4	11	17	59	91	98	2.80	Low	112	101	do	

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

MISSOURI

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Buchanan	Saint Joseph (Missouri River)	Comm	1922	21881	Q(CLF)			1	4	12	43	88	98	2.46	Low	109	91	Tens.		
Do	do	do	1922	21882	Q(CLF)			1	2	7	36	80	96	2.22	High	116	97	do		
Do	do	do	1941	55519	QGFC	2.62	0.4	2	6	17	56	92	99	2.72	Low	91	112	Comp.		
Butler	Keeners	do	1926	28628	CQ			7	29	47	68	89	98	3.38	do	126	121	Tens.		
Do	do	do	1926	28668	CQ			12	40	59	80	93	98	3.82	do	178	154	do		
Cape Girardeau	Cape Girardeau	do	1950	81688	QFCGS	2.63	.3	0	1	9	48	97	100	2.55	High	98		Comp.	1.1	8–50
Franklin	Pacific (Meramec River).	do	1929	31306	QC			1	11	23	42	82	98	2.57	Low	117	103	Tens.		
Howell	Willow Spring	do	1949	77915	QC	2.55	1.3	3	15	25	37	64	97	2.41	High	99		Comp.		
Jasper	Joplin	Prosp	1917	11775	C(L)			0	0	23	85	94	98	3.00		89	107	Tens.		
Do	do	do	1922	21873	Chert			0	0	2	40	72	88	2.02	Low	82	95	do		
Do	Prosperity	Comm	1922	20924	do			4	25	50	80	91	95	3.45		126	123	do		
Do	Webb City	Prosp	1919	14321	do			0	0	11	50	76	95	2.32		81	90	do		
Do	do	Comm	1921	19749	do			0	0	1	38	70	87	1.96		87	104	do		
Madison	Fredericktown	Prosp	1950	80178	CQS	2.42	3.6	0	4	28	70	95	99	2.96	High	78		Comp.	5.1	8–50
Pemiscot	Caruthersville	Comm	1928	30664	QCF			0	2	23	84	99	99	3.07	do	105	90	Tens.		
Saint Francis	Leadwood	Local	1949	77323	QCS	2.52	1.8	0	9	27	50	88	97	2.71	Low	97		Comp.	3.8	4–50
	Saint Louis (Mississippi River).	Comm	1929	31307	QCF			1	5	17	51	89	96	2.59	High	118	109	Tens.		

MONTANA

Dawson	Glendive (Yellowstone River).	Prosp	1920	16125	Q(CGRL)			4	23	32	54	84	93	2.90		121	126	Tens.		
Deer Lodge	Anaconda	Local	1920	16007	QFM			11	29	39	73	88	96	3.36	Low	111	103	do		
Do	do	Prosp	1920	16604	Chert [2]			5	36	57	73	80	87	3.38		132	152	do		
Fergus	Lewistown	Comm	1920	16120	QLGS			4	26	45	63	78	95	3.11		96	88	do		
Gallatin	Bozeman	Prosp	1920	16121	Q(CGFMa)			2	20	41	69	88	95	3.15		123	116	do		
Do	Manhattan	do	1920	16540	Q(LMa)			1	6	9	18	58	90	1.82		93	78	do		
Do	do	do	1920	16602	QFMMa			1	7	24	69	82	90	2.73		104	120	do		
Do	(West Gallatin River).	do	1919	14590	QGR			5	23	32	45	64	81	2.50		91	100	do		
Jefferson	Whitehall	do	1920	16119	Q(GFMMa)			1	13	25	43	78	94	2.54		83	85	do		
Musselshell	Roundup (Musselshell River).	do	1920	16123	QSLC			3	21	31	50	74	92	2.71		125	133	do		
Park	Gardiner	Local	1947	74155	RSQDi	2.50	2.3	0	26	50	71	85	94	3.26		88	104	Comp.	8.1	4–50
Sheridan	Westby	Prosp	1921	20139	QL			2	15	34	78	91	95	3.15	Low	122	130	Tens.		
Silver Bow	Rocker	Local	1920	16124	Q(FGMMa)			3	27	54	81	93	98	3.56		112	123	do		
Do	do	do	1920	16603				2	21	43	71	84	94	3.15		118	106	do		
Stillwater	Columbus	Prosp	1920	16127	Q(SGMa)			1	7	19	45	75	96	2.43		110	122	do		
Yellowstone	Laurel (Yellowstone River).	do	1920	16126	Q(CSLGMa)			1	13	26	48	83	98	2.69		116	137	do		

NEBRASKA

Chase	Champion	Prosp	1920	15765	QG			7	43	63	78	89	95	3.75	Low	99	96	Tens.		
Cherry	Johnstown	Local	1950	81816	QFGC	2.61	0.4	20	47	74	87	96	99	4.23	do	136		Comp.	8.9	⅜″–50
Dodge	Fremont	Comm	1916	9906	QC			12	41	63	83	93	98	3.90		148	135	Tens.		
Do	do	do	1919	15163	QFG			7	57	82	94	97	99	4.36		146	136	do		
Douglas	Valley	do	1922	21775	QFG			13	41	64	90	96	99	4.03	Low	157		do		
Holt	Atkinson	do	1950	81817	QFGC	2.61	.4	19	42	67	82	93	99	4.02	do	142		Comp.	4.7	⅜″–50
Do	do	do	1950	82030	QFGC			18	42	72	86	94	98	4.10	do	153		do	5.5	⅜″–50
Scotts Bluff	Scotts Bluff (North Platte River).	Local	1920	16345	Q(FMa)			1	8	20	51	75	95	2.50		101	84	Tens.		

NEW HAMPSHIRE

Carroll	Conway	Local	1949	78738	QFMG		0.8	0	1	5	23	67	96	1.92	Low	104		Comp	1.9	16–50
Do	Glen	do	1946	72347	GQFMMaT	2.60	1.0	10	16	30	64	91	98	3.09	do	104	104	do	2.4	4–50
Do	Intervale	do	1946	72346	GFQ(TM)	2.60	.8	2	10	36	80	97	100	3.25	do	99	97	do	2.0	4–50
Do	Passaconaway	do	1946	72357		2.54	1.2	8	18	36	61	83	95	3.01	High	52	74	do	1.8	4–50
Coos	Gorham	Comm	1949	76885		2.61	1.0	6	23	47	73	89	96	3.34	Low	101	110	do	5.7	⅜″–50
Do	do	do	1949	76886	QMFG			2	4	6	16	53	89	1.70	High	120		do	3.8	16–50
Grafton	Littleton	do	1949	79484	QGnGB		.8	0	14	41	75	93	98	3.21	Low	94		do	6.4	4–50
Do	Passaconaway	Local	1942	72348	QGF	2.60	.8	0	1	3	40	88	93	2.30	do	102	101	do	2.0	16–50
Hillsboro	East Weare	do	1926	28493	QFM			0	3	24	66	88	96	2.77		85	72	Tens		
Merrimack	Concord	do	1922	21041	QFGM			8	28	52	85	97	99	3.69	Low	71	70	do		
Do	do	do	1924	24894	QFGM			13	25	47	85	97	99	3.66	do	94	83	do		
Do	do	do	1924	25939	QFM			11	23	41	72	91	98	2.33	do	81	72	do		
Do	do	do	1926	28641	QFM			11	21	42	80	96	100	3.48	do	69	70	do	2.0	16–50
Strafford	Milton	Comm	1926	28469	QFM			0	13	34	67	92	98	3.04		96	79	do		

NEW JERSEY

Bergen	Little Ferry	Comm	1929	31286	QF			0	2	14	46	83	97	2.42	Low	113	107	Tens		
Cape May	Ocean View	do	1923	23026	Quartz			3	19	35	58	82	97	2.94	do	110	101	do		
Do	do	do	1923	23027	do			3	18	35	58	82	97	2.93	do	125	105	do		
Do	do	do	1923	23038	do			4	19	34	57	76	96	2.86	do	125	103	do		
Do	do	do	1923	23029	do			2	17	32	53	81	97	2.82	do	118	99	do		
Cumberland.	Millville	do	1923	22738	Q(C)			3	11	23	65	91	98	2.91	High	47	49	do		
Do	do	do	1923	22739	Q(C)			2	8	17	50	87	98	2.62	Low	123	106	do		
Do	do	do	1923	23030	Quartz			1	13	25	55	84	97	2.75	High	111	103	do		
Mercer	Yardville	do	1924	24613	Q(C)			7	21	35	58	86	98	3.05	Low	119	97	do		
Middlesex	Chrome	Prosp	1919	14927	Copper slag [2]			1	12	54	92	97	98	3.54		123	156	do		
Do	Milltown	Comm	1924	24616	Quartz			1	16	55	89	98	99	3.58	Low	87	99	do		
Monmouth	Farmingdale	do	1924	24617	do			1	15	36	69	92	98	3.11	do	126	123	do		
Morris	Morris Plains	do	1933	40035	QSFSh			0	6	23	51	84	98	2.62	do	175	161	do		
Do	do	do	1944	66837	QGSh(Ma)		1.5	0	2	22	55	87	98	2.64		105	99	Comp		
Do	Succasunna	do	1919	14900	Q(MFMa)			0	1	6	24	60	94	1.85		97	88	Tens		
Do	Wharton	do	1922	21191	Bfs [2]			5	30	54	78	83	88	3.38		173	133	do		
Do	do	do	1922	21750	Bfs [2]			4	28	57	78	84	99	3.50		193	150	do		
Ocean	South Lakewood	do	1924	24614	Quartz			1	6	17	51	84	95	2.54	Low	124	115	do		
Passaic	Paterson	Prosp	1916	10997	do			6	11	16	35	76	97	2.41		86	88	do		
Do	do	do	1916	10998	do			10	21	37	65	84	98	3.15		102	117	do		
Do	do	do	1916	10999	QFC			7	13	22	42	58	82	2.24		81	93	do		
Sussex	Ogdensburg	do	1921	19906	L(M)			0	5	28	79	91	97	3.00	Low	132	138	do		

NEW MEXICO

Catron	Alma	Prosp	1925	26754				2	18	35	61	78	91	2.85	Low	106	103	Tens		
Do	do	do	1925	26755	Rhyolite			5	24	42	66	77	84	2.98	do	104	107	do		
Do	do	do	1925	26757	do			5	33	58	84	91	95	3.66	do	98	98	do		
Do	do	do	1925	26758	RQ			2	16	29	53	76	89	2.65	do	103	93	do		
Do	Reserve (San Francisco River).	do	1925	26753	RQ			1	10	19	32	55	85	2.02	do	90	94	do		
Do	Reserve (Starkweather Wash.).	do	1925	26750	Rhyolite			14	26	43	63	75	89	3.10	do	97	106	do		
Do	Reserve (S. U. Creek).	do	1925	26752	Quartz			4	29	47	67	79	89	3.15	High	119	104	do		
San Miguel	San Jose (Pecos River).	Comm	1940	50479	QQz		1.1	2	7	14	44	78	93	2.38	Low	125	96	Comp		
Santa Fe	(Bajo Canyon)	Prosp	1924	24729	QFG			1	5	21	68	87	95	2.77	do	93	97	Tens		
Do	(Los Alamos Creek).	do	1924	24728	Q(RTr)			1	2	12	63	87	96	2.61	do	79	96	do		
Do	do	do	1924	24730	QFGR			2	10	29	79	94	97	3.11	do	90	95	do		
Do	(Panjorita Canyon).	do	1924	24727	QR			1	18	46	86	93	96	3.40	do	86	104	do		
Do	San Ildefonso (Water Canyon).	do	1924	24725	QR			1	13	36	81	93	97	3.21	do	99	101	do		
Taos	Taos	do	1923	24424	Quartz			6	34	49	64	73	80	3.06		89	102	do		

[2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

NEW YORK

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			Test result		Method used	Test result	Size tested
																7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Albany	Albany	Comm.	1932	34618	SShSlQL			2	13	32	59	80	92	2.78	Low	141	146	Tens.	9.7	4–100
Do	do	do	1933	34804	SShSlQL		2.9	0	10	35	58	83	95	2.81	do	151	159	do	[1] 24.2	4–100
																			17.6	4–100
Do	do	do	1935	40133				0	9	29	55	80	95	2.68					[1] 49.6	4–100
Do	do	do	1936	42645	SShSlQL		2.2	4	21	45	67	87	95	3.19	Low	123	124	Comp.		
Do	South Bethlehem	do	1931	33991	Limestone [2]	2.71		0	14	55	75	88	94	3.26	do	159	167	Tens.	2.9	4–50
Allegany	Alfred	do	1925	26713	QSL			1	4	19	78	93	96	2.91	do	114	127	do		
Do	do	do	1925	27311	QCSL			3	7	21	68	86	95	2.80	do	139	119	do		
Do	do	do	1933	34805	QCSL		1.8	0	11	26	43	76	96	2.52	do	125	142	do	5.0	4–100
																			[1] 15.7	4–100
Broome	Deposit	Local	1923	23484	QS			4	15	29	57	78	91	2.74	do	105	113	do		
Cattaraugus	Allegany	Comm.	1925	27309	QSL			3	11	19	56	88	97	2.74	do	102	98	do		
Do	Franklinville	do	1929	32326	QSLC			3	27	53	74	92	97	3.46	do	173	157	do		
Do	do	do	1929	32327	QSLC			8	30	49	69	90	97	3.43	do	151	141	do	2.6	3–100
Do	do	do	1929	32354	QSLC			7	28	49	68	88	96	3.36	do	141	146	do		
Do	do	do	1929	33136	QSLC														4.2	3–100
Do	do	do	1929	33137	QSLC														3.8	3–100
Do	Machias	do	1923	23532	LQG			10	51	72	84	91	95	4.03	Low	157	165	Tens.		
Do	do	do	1925	26992	LCQ			15	40	56	78	90	95	3.74	do	152	147	do		
Do	do	do	1925	27317	QCSL			5	18	35	67	89	97	3.11	do	131	129	do		
Do	do	Prosp.	1929	32330	QCSL			2	19	33	50	83	94	2.81	do	134	138	do		
Do	Riverside Junction.	do	1932	34712	QSC		1.6	8	32	50	67	93	97	3.47		119	110	do		
Chautauqua	Bemus Point	Comm.	1930	33149	SLC														6.4	4–100
Do	Fredonia	do	1930	33150	SShLG														6.8	4–100
Columbia	New Lebanon	Local	1924	25100	QSlSc			9	27	44	73	91	96	3.40	Low	98	120	Tens.		
Do	Newton Hook	do	1924	24890	LQSh			6	28	50	79	90	94	3.47	do	148	159	do		
Do	do	do	1924	24891	QSL			13	32	51	81	95	98	3.70	do	161	158	do		
Delaware	Hancock	Comm.	1925	26995	Quartz			2	14	29	58	82	93	2.78	do	119	106	do		
Dutchess	Stoneco	do	1944	66821	Limestone [2]		1.0	0	4	41	66	83	95	2.89		125	107	Comp.		
Erie	Buffalo	do	1923	23479	Slag [2]			12	34	52	69	77	84	3.28		106	94	Tens.		
Do	Buffalo (Lake Erie).	do	1930	33156	SCLG														3.8	3–100
Do	do	do	1930	33938	SCLG														7.4	4–100
Do	Buffalo (Niagara River).	do	1923	23533	QCL			12	26	38	63	83	94	3.16	Low	145	157	Tens.		
Do	Clarence	do	1930	33140	SLGQ														4.6	3–100
Do	do	do	1930	33141	SLGQ														3.8	3–100
Do	do	do	1932	34619	LQSh			4	24	43	62	80	94	3.07		138	143	Tens.	6.7	4–100
																			[6] 8.6	4–100
Do	do	do	1932	34623	LSQShG			1	9	23	50	87	98	2.68	Low	138	132	do		
Do	Lancaster	do	1930	33142	SLGC														2.4	3–100
Do	do	do	1930	33143	SLGC														4.8	3–100
Do	Springville	do	1933	34809	SShSlLQC		2.2	2	13	34	55	89	98	2.91	Low	136	142	Tens.	7.8	4–100
																			[1] 15.0	4–100
Essex	Mineville	Prosp.	1923	23462	Granite [2]			1	9	26	63	79	90	2.68	do	121	109	do		
Do	Newcomb	do	1940	49249	QGFM		.4	0	0	0	5	59	97	1.61	do	115	110	Comp.		
Do	do	do	1940	49250	QGFM		.4	5	15	26	47	90	99	2.82	do	108	101	do		
Franklin	Tupper Lake	do	1922	21883	QFG			5	11	23	65	91	98	2.93	do	91	76	Tens.		
Genesee	Alexander	Comm.	1923	23131	SLQ			9	33	50	74	88	96	3.50	do	176	153	do		
Do	do	do	1923	23534	SLQ			3	19	33	56	80	94	2.85	do	126	133	do		
Do	do	do	1925	27315	QCL			8	17	25	45	77	93	2.65	do	133	123	do		
Do	do	do	1929	32353	SLQC			7	25	43	59	81	95	3.10	do	116	132	do		
Do	do	do	1930	33139	SLShC														8.2	4–100
Do	do	do	1932	34621	LQShS			5	26	45	63	85	96	3.20	Low	139	135	Tens.		
Greene	Catskill	Local	1923	23123	SQ			0	2	8	32	66	87	1.95	do	77	91	do		
Do	New Baltimore	do	1925	27568	QLS			7	15	26	52	75	88	2.63	do	115	122	do		
Herkimer	Utica	Comm.	1929	31404	SlShSL			3	21	46	74	89	95	3.28	do	127	113	do		
Livingston	Caledonia	do	1925	27310	LQ			4	21	40	74	91	96	3.26	do	137	137	do		
Madison	Cazenovia	Local	1923	23450	QLCS			9	28	49	75	88	95	3.44	do	144	144	do		
Do	Madison	Comm.	1926	28433	QLCS			2	17	37	70	87	96	3.09	do	127	132	do	9.0	4–50
Nassau	Garden City	do	1945	68634	QQzGM	2.62	.7	2	9	20	40	78	97	2.46	High	112	100	Comp.	1.7	4–50
Do	Hempstead Harbor.	do	1924	24974	Q(MF)			1	9	19	50	83	95	2.57	Low	109	107	Tens.		

Do	Oyster Bay	do	1944	66822	Quartz		.5	1	7	28	53	88	98	2.75		138	110	Comp		
Do	Port Washington	do	1936	42646	Q(GFSh)		.3	2	11	27	49	84	97	2.70	Low	140	130	do		
Do	do	do	1944	66941	QGM	2.63	.5	0	4	11	31	77	97	2.20	do	105	107	do	2.3	8–50
Do	Roslyn	do	1934	40156				1	14	26	49	83	97	2.70					{ 3.5	4–50
																			{ [1] 7.1	4–50
Do	do	do	1934	40166	Q(ScM)	2.64	.7	3	13	30	48	77	95	2.66	Low	109	111	Tens		
Oneida	Boonville	do	1923	23478	QFL			1	7	17	47	80	94	2.46	do	92	134	do		
Do	do	do	1923	23519	QFGL			5	13	26	59	82	95	2.80	do	111	117	do		
Do	do	Local	1923	23698	QFL			3	11	25	67	94	98	2.98	do	114	104	do		
Do	do	Comm	1925	27318	QFGL			9	21	40	75	93	98	3.36	do	121	104	do		
Do	do	do	1929	31402	QFL			7	14	29	57	89	99	2.95	do	113	112	do		
Do	do	do	1932	34620	LShQS			3	18	37	55	78	91	2.82	do	139	124	do		
Do	do	do	1933	34807	QFGLC			7	17	37	62	89	98	3.10	do	146	140	do	{ 3.7	4–50
																			{ [1] 7.0	4–50
Do	Forestport	do	1923	23518	QFG			3	9	21	55	84	97	2.69	do	75	79	do		
Do	do	do	1929	31403	QFL			6	29	45	61	85	97	3.23	do	104	100	do		
Onondaga	Syracuse	Local	1926	28382	QSL			5	15	27	55	83	96	2.81	do	117	118	do		
Orange	Goshen	do	1925	26318	QSL			1	10	31	67	84	93	2.86	do	132	148	do		
Orleans	Ridgeway	Comm	1930	33138	SGLQ														5.0	4–100
Oswego	Lacona	do	1927	29367	SSlQL			2	12	35	58	82	93	2.82	Low	104	130	Comp		
Do	do	do	1927	29368				1	14	29	51	84	95	2.54	do	108	109	do		
Otsego	Oneonta	do	1935	40134				3	28	59	80	96	99	3.65					{ 13.3	4–50
																			{ [1] 50.2	4–50
Do	Pittsfield	Prosp	1924	24550	Sandstone			3	7	24	79	94	96	3.03	Low	108	110	Tens		
Do	Springfield Center	Local	1921	20389	QL			3	21	39	74	87	93	3.17	do	161	159	do		
Queens	Long Island City	Comm	1925	27577	Q(MGnSc)			1	7	17	46	79	95	2.45		95	107	do		
Do	do	do	1925	27578	Q(FM)			0	3	11	45	78	95	2.32		98	94	do		
Richmond	Prince Bay	Prosp	1921	20034	Quartz			2	4	12	55	85	90	2.48		138	132	do		
Do	do	do	1921	20035	do			1	2	7	53	84	90	2.37		146	143	do		
Saint Lawrence.	Ogdensburg	Comm	1925	26994	QLF			1	7	24	62	82	92	2.68	Low	129	122	do		
Saratoga	Malta	Local	1927	29233	QSL			0	2	8	53	93	98	2.54	do	99	100	Comp		
Do	Mechanicville	Comm	1923	23461	LQ			6	29	50	75	88	94	3.42	do	164	131	Tens		
Do	do	do	1927	29564	SSlQL			8	22	44	74	87	93	3.28	do	129	144	Comp		
Steuben	Corning	do	1923	23451	QLCS			2	14	28	64	83	91	2.82	do	121	111	Tens		
Do	do	do	1925	27316	QCL			7	10	21	72	93	97	3.00	do	109	106	do		
Suffolk	Port Jefferson	do	1924	26032	Q(MF)			3	10	23	63	91	98	2.88	do	101	107	do		
Do	do	do	1924	26117	Q(MF)			2	15	29	61	89	98	2.94	do	116	109	do		
Do	do	do	1929	31305	Quartz			0	1	12	31	81	97	2.22	do	97	99	do		
Do	do	do	1933	34808	Q(ScMF)		.4	4	15	27	48	87	98	2.79	do	152	125	do	{ 3.2	4–100
																			{ [1] 3.4	4–100
Do	do	do	1940	51682	QQzFM	2.63	.3	7	16	25	48	85	97	2.78	do	115	99	Comp		
Tioga	Nichols	do	1925	27312	QCL			1	10	18	42	74	90	2.35	do	125	113	Tens		
Ulster	Marlboro	do	1925	26993	LShQ			5	30	55	78	88	94	3.50	do	174	155	do		
Wyoming	Attica	do	1929	32328	QLSC			3	17	25	36	74	93	2.48	do	116	114	do		
Do	do	do	1929	32329	SLQCSh			9	21	33	44	64	89	2.60	do	111	105	do	7.0	4–100
Do	do	do	1933	34806	SSlShQCL		2.1	9	21	38	53	76	93	2.90	do	138	156	do	{ 7.7	4–100
																			{ [1] 15.9	4–100

NORTH CAROLINA

Alamance	Burlington (Haw River).	Local	1918	12910	Quartz			1	14	40	84	96	98	3.33		85	89	Tens		
Do	do	do	1918	13171	do			1	6	19	56	84	96	2.62		92		do		
Do	Burlington (Hopedale Creek).	do	1920	16115	Q(MFMa)			2	6	22	63	88	96	2.77		111	100	do		
Anson	Lilesville	Comm	1926	28160	Q(FM)			5	17	42	86	95	98	3.43	Low	161	147	do		
Do	do	do	1926	28723	Quartz			3	13	31	69	86	94	2.96	do	145	130	do		
Do	do	do	1926	28724	do			3	18	40	78	93	97	3.29	do	121	118	do		
Do	do	do	1931	33915	do	2.64	0.2	2	16	37	70	92	98	3.15	do	132	119	do		
Do	do	do	1936	42982	do	2.64	.3	0	7	30	67	90	98	2.92	do	107	106	do		
Do	do	do	1936	42987	do	2.64	.4	0	4	19	60	91	98	2.72	do	109	102	Comp		
Do	do	do	1937	44249	do		.4	0	1	19	51	84	97	2.52	do	125	122	do		
Do	do	do	1938	44988	do		.4	1	8	30	69	92	97	2.97		137	138	do		
Do	do	do	1939	46471	do		.3	0	1	20	64	93	98	2.76	Low	117	111	do		
Do	do	do	1939	46588	do		.4	0	1	16	56	89	97	2.59	do	118	111	do		
Do	do	do	1939	46721	do		.3	0	1	19	60	91	98	2.69	do	113	108	do		
Do	do	do	1948	75452	do	2.62	.7	0	1	20	62	91	98	2.72	do	99	90	do	1.3	8–50
Beaufort	Washington (Tar River).	Local	1919	14336	do			0	3	15	49	82	99	2.48		86	86	Tens		
Brunswick	Ash	Prosp	1916	10225	do			0	0	21	70	88	96	2.75		127	115	do		
Buncombe	Asheville	Local	1937	43196	QGnMSh		.9	0	3	16	51	91	99	2.60	High	105	111	Comp	7.3	8–100
Do	do	Comm	1938	46320	QFMScSh		.8	0	4	22	54	92	98	2.70	do	88	92	do		
Do	do	do	1938	46362	QFMSh		.7	0	2	16	47	91	98	2.54	do	84	91	do		
Do	Asheville (French Broad River).	Prosp	1916	10967	QScGn			2	14	32	64	86	98	2.96		91		Tens		
Do	do	do	1916	10970	QM			0	1	2	18	69	96	1.86		50		do		
Do	do	Comm	1920	16117	Q(MFMa)			1	3	13	50	86	98	2.51		147	131	do		

[1] Magnesium sulfate test. [2] Crushed. [6] 60 cycles, freezing and thawing test.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

NORTH CAROLINA—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Buncombe	Asheville (Swannanoa River).	Prosp	1916	10969	QM			2	7	17	50	84	97	2.57		69		Tens		
Do	Biltmore	do	1940	49881	QFScM		1.3	0	3	16	52	89	99	2.59	High	76	77	Comp		
Do	do	do	1940	49882	QFScM		1.2	0	3	16	51	89	99	2.58	do	80	84	do		
Do	Black Mountain (Swannanoa River).	do	1916	10971	QGn			6	28	51	75	86	93	3.39		118		Tens		
Do	Candler	Comm	1940	49224	QFScM		1.3	0	1	6	29	76	98	2.10	Low	77	83	Comp		
Do	Enka	do	1939	46482	QScMSh		1.3	0	0	6	27	80	99	2.12	do	83	82	do		
Do	do	do	1939	46483	QScMSh		1.3	0	6	25	58	91	99	2.79	do	72	73	do		
Do	Grovemont	do	1935	42612	QGGnM		.5	0	0	6	59	86	97	2.48		103	105	do		
Do	Swannanoa	do	1933	40006	GQFM			0	8	30	48	72	89	2.47	Low	83	92	Tens		
Do	do	do	1933	40011	GQFM			1	11	34	55	81	96	2.78	do	124	113	do		
Do	do	do	1936	43047	GnGQMF		.7	0	0	25	52	79	95	2.51	High	108	94	Comp		
Do	do	do	1936	43048	GnGQF		.7	2	24	47	74	95	99	3.41	Low	91	96	do	4.7	4-100
Do	do	do	1937	43195	QGGnMFSh		.6	0	0	19	48	82	97	2.46	High	119	126	do	4.2	8-100
Do	do	do	1937	44286	QGnFM		.6	0	0	18	45	80	97	2.40	Low	98	100	do		
Do	do	do	1937	44287	GnQFM		.6	2	29	53	72	92	98	3.46	do	103	105	do		
Do	do	do	1937	44622	ScGnQM		.7	1	21	43	64	87	97	3.13	do	110	110	do		
Do	do	do	1937	44658	ScGnQM		.7	1	15	33	57	86	97	2.89	do	88	108	do		
Do	do	do	1937	44731	ScGnQM		.7	0	13	30	54	86	98	2.81	do	92	92	do		
Do	do	do	1937	44801	QFMGn		.7	0	0	19	47	82	98	2.46		98	103	do		
Do	do	do	1938	44978	QScM		.6	3	21	38	56	80	95	2.93		90	86	do		
Do	do	do	1938	46008	QGGnScM		.5	2	15	33	54	80	95	2.79		99	107	do		
Do	do	do	1938	46059	QMScF		.8	0	2	17	52	93	99	2.63	High	87	84	do		
Do	do	do	1938	46060	ScGnQMF		.5	2	14	33	53	77	94	2.73	Low	118	112	do		
Do	do	do	1938	46061	ScGnQMF		.5	3	20	37	54	78	94	2.86	do	116	116	do		
Do	do	do	1938	46062	ScGnQMF		.5	2	17	37	56	80	95	2.87	do	121	125	do		
Do	do	do	1938	46111	ScGnQMF		.6	0	13	38	62	87	97	2.97		113	112	do		
Do	do	do	1938	46112	ScGnQMF		.6	0	14	39	63	88	98	3.02		114	108	do		
Do	do	do	1938	46113	ScGnQMF		.6	0	15	39	61	85	97	2.97		115	105	do		
Do	do	do	1938	46114	ScGnQMF		.6	0	11	34	57	83	96	2.81		109	102	do		
Do	do	do	1938	46131	QFMSc		.7	0	3	19	52	92	98	2.64	High	82	82	do		
Do	do	do	1938	46132	QFMSc		.7	0	2	19	55	91	97	2.64	do	83	86	do		
Do	do	do	1938	46137	QFMSc		.6	3	26	48	66	86	96	3.24	Low	108	118	do		
Do	do	do	1938	46192	QGFMSc		.6	0	1	20	45	80	96	2.42	do	94	93	do		
Do	do	do	1938	46195	QGnScFM		.6	0	20	43	64	86	97	3.10	do	99	100	do		
Do	do	do	1938	46229	QGnScFM		.6	0	1	26	50	80	95	2.52	do	102	100	do		
Do	do	do	1938	46266	QGnScFM		.6	3	15	41	65	88	97	3.09	do	92	90	do		
Do	do	do	1939	46550	QFMGn		.7	2	20	46	69	87	97	3.21	do	101	113	do		
Do	do	do	1939	46589	ScQFM		.8	0	2	19	40	66	92	2.19	do	107	109	do		
Do	do	do	1939	46669	GnQFM	2.62	.6	1	18	41	63	83	96	3.02		99	102	do		
Do	do	do	1939	46763				0	15	38	62	84	96	2.95	Low	116	120	do		
Do	do	do	1939	46902	QGScM		.7	0	2	20	41	68	92	2.23	do	104	104	do		
Do	do	do	1939	46907	QGScM		.7	0	2	23	49	74	94	2.42	do	110	100	do		
Do	do	do	1940	49225	QFScM		.7	0	2	23	49	76	95	2.45	do	90	89	do		
Do	do	do	1940	49291	QFScM		.7	0	14	36	62	84	96	2.92	do	84	92	do		
Do	do	do	1940	49292	QFScM		.7	0	1	21	46	76	95	2.39	do	88	89	do		
Do	do	do	1940	49399	QFScM		.7	0	8	31	57	82	96	2.74	do	96	95	do		
Do	do	do	1940	49456	GnQFM		.8	0	10	36	64	86	97	2.93	do	88	92	do		
Do	do	do	1940	49457	GnQFM		.7	0	1	20	48	79	95	2.43	do	91	95	do		
Do	do	do	1940	51377	ScQM		.7	0	1	6	34	67	92	2.00	do	104	96	do		
Do	do	do	1940	51378	ScQM		.7	2	21	43	64	86	95	3.11	do	100	101	do		
Do	do	do	1940	52363	ScQM		1.2	1	17	41	65	83	95	3.02	do	106	102	do		
Do	do	do	1940	52364	ScQM		1.0	0	18	37	59	82	95	2.91	do	102	98	do		
Do	do	do	1940	52365	ScQzMQ		.9	0	13	34	58	80	95	2.80	do	103	100	do		
Do	do	do	1941	53039	GnScQM	2.72	1.5	0	9	34	65	86	97	2.91	do	81	82	do		
Do	do	do	1941	53174	GnScQQzM		1.1	0	10	33	64	87	97	2.91	do	95	93	do		
Do	do	do	1941	54534	QQzScM		1.0	0	0	1	25	59	89	1.74	High	103	86	do		
Do	do	do	1941	55331	QQzScM		1.2	0	0	13	43	73	94	2.23	Low	104	102	do		
Do	do	do	1941	55426	QScMF		1.2	0	7	24	52	78	95	2.56	do	91	93	do		
Do	do	do	1942	56468	QScMF		1.7	0	8	36	59	83	96	2.82	do	77	80	do		
Do	do	do	1942	57445	QGnMF	2.77	1.0	0	0	8	33	70	95	2.06	High	87	99	do		

Do	do	do	1949	76909			1.0	0	11	31	54	80	95	2.71	Low	116		do	2.4	4–50
Do	do	do	1949	77911	QScM			0	2	23	49	79	96	2.49	do	103		do	3.8	8–50
Do	do	do	1949	79077	QGM	2.74	.8	0	11	30	51	75	93	2.60	do	123		do	3.0	4–50
																			[7] 5.0	4–50
Do	do	do	1950	80281	QGM		.7	0	12	34	57	82	97	2.82	do	115	115	do	2.9	4–50
Do	do	do	1950	81442	QGMGn		1.4	0	12	33	55	80	94	2.74	do	93		do	5.0	4–50
Do	do	do	1950	81443	QGMGn		1.4	0	1	23	48	76	95	2.43	do	110		do		
Burke	Bridgewater	Local	1921	18878	Q(MF)			2	12	30	64	83	93	2.84	High	99	83	Tens		
Do	Icard (Taylors Creek).	Prosp	1918	12806	QScM			11	20	35	68	85	96	3.15		116		do		
Do	do	do	1918	12807	QScM			13	24	39	71	88	96	3.31		114		do		
Do	Linville Falls	do	1938	44977	Q(FSc)		.7	0	4	31	70	96	99	3.00		99	96	Comp		
Cabarrus	Concord (Buffalo Creek).	Local	1920	16116	Quartz			3	8	21	60	86	96	2.74		82	78	Tens		
Do	Harrisburg (Blackwater Creek).	do	1922	22216	QF			6	23	47	79	89	92	3.36	High	100	108	do		
Caldwell	Lenoir	Comm	1941	55147	QM		1.3	0	0	4	49	89	99	2.41	Low	72	70	Comp		
Do	do	do	1941	55148	QMF		1.0	0	7	32	77	93	97	3.06	High	88	83	do		
Caswell	Yanceyville	Prosp	1922	21050	QMF			0	3	13	58	91	98	2.63		73	86	Tens		
Craven	New Bern	Local	1921	18937	Quartz			0	2	7	28	69	95	2.01	Low	93	97	do		
Davidson	Newsom	do	1916	9952	Rhyolite [2]			7	28	45	66	80	89	3.15		144	145	do		
Duplin	Sloan	do	1917	12034	Q(FM)			5	9	15	47	90	98	2.64		81		do		
Do	do	do	1917	12527	QM			0	4	11	34	87	95	2.31		86		do		
Do	Warsaw	do	1921	18874	Quartz			0	0	3	16	32	77	1.28	High	87	94	do		
Durham	Durham	do	1921	18987	do			0	2	6	21	50	88	1.67	do	86	86	do		
Edgecombe	Rocky Mount	do	1922	22347	Q(F)			3	17	39	75	93	97	3.24	Low	93	81	do		
Do	do	do	1923	22765	Q(F)			4	22	46	79	94	97	3.42	High	86	81	do		
Forsyth	Lewisville	do	1923	23762	Q(FM)			3	16	35	65	84	95	2.98	Low	100	97	do		
Do	Winston-Salem	Prosp	1919	13873	Quartz			10	22	40	73	91	96	3.32		143		do		
Do	do	Comm	1920	17758	QFM			1	7	20	59	87	98	2.72		85	90	do		
Do	do	Local	1921	18885	QF(M)			14	46	72	85	95	98	4.10		105	93	do		
Do	do	Comm	1921	19662	QFM			0	5	17	57	90	98	2.67	Low	80	83	do		
Do	Winston-Salem (Salem Creek).	Local	1916	9648	Quartz			2	7	23	65	93	99	2.89		70	80	do		
Franklin	Centerville	Prosp	1921	18903	do			1	8	19	39	62	92	2.21	High	112	111	do		
Guilford	Greensboro	Local	1921	18883	QF			1	11	31	74	90	98	3.05	Low	119	104	do		
Do	Guilford	do	1922	21393	Q(F)			1	3	10	37	69	87	2.07	High	116	110	do		
Harnett	Bunnlevel	Comm	1936	42983	Q(M)	2.66	.4	0	8	29	62	89	97	2.85	Low	101	102	Comp		
Haywood	Balsam (Richland Creek).	Prosp	1921	18879	QScM			0	1	7	33	68	91	2.00	High	39	43	Tens		
Do	Waynesville	do	1917	11749	QM			0	0	1	17	59	89	1.66		25	42	do		
Do	do	Local	1947	73459	Gneiss [2]		.4	0	19	34	44	55	71	2.23					3.3	4–50
Do	do	do	1947	73460	do		.6	0	24	38	49	59	73	2.43					4.0	4–50
Do	do	do	1947	73461	do		.1	0	16	27	37	52	73	2.05					1.3	4–50
Do	do	do	1947	73462	do		.6	0	20	33	43	54	72	2.22					1.9	4–50
Henderson	Balfour	do	1918	13718	Q (MF)			0	2	7	27	62	95	1.93		56		Tens		
Do	do	do	1918	13719	Gneiss [2]			4	20	37	56	67	79	2.63		100		do		
Do	Balfour (French Broad River).	Prosp	1916	10968	Quartz			7	16	29	56	78	96	2.82		76		do		
Do	Balfour (Mud Creek).	Local	1919	13902	Q(FM)			2	7	15	49	88	98	2.59		100	84	do		
Do	Bat Cave	do	1918	12763	QM			1	14	32	63	79	90	2.79		107	112	do		
Do	Fletcher	do	1940	49223	QFG		.7	0	0	0	11	72	97	1.80	Low	73	77	Comp		
Lenoir	Kinston	do	1921	18986	Q(F)			1	11	29	60	82	97	2.80	High	109	93	Tens		
Do	do	Comm	1944	64456	Q(F)	2.63	.3	3	6	13	28	82	99	2.31	Low	101	102	Comp		
Do	do	do	1944	64574	QQz(F)	2.64	.2	2	5	11	42	84	99	2.43	do	89	92	do		
McDowell	Marion	do	1940	49504	QFMG		1.1	0	3	16	50	87	98	2.54	do	79	83	do		
Do	do	do	1940	50853	QScM	2.55	1.5	0	3	19	55	87	98	2.62	do					
Madison	Marshall	do	1939	46545			1.0	0	1	14	49	88	99	2.51	do	89	93	Comp		
Mecklenburg	Mount Holly (Catawba River).	Local	1925	27532	QC			7	18	38	85	97	99	3.44	do	103	104	Tens		
Mitchell	Spruce Pine (North Toe River).	do	1921	18828	QFMMa			0	3	25	90	98	99	3.15	High	62	64	do		
Montgomery	Biscoe	do	1921	19661	Quartz			0	0	2	51	83	95	2.31	Low	120	115	do		
Moore	Aberdeen	Comm	1935	42499	do		.6	0	0	1	17	69	92	1.79	do	139	125	Comp		
Do	do	do	1936	42981	do	2.63	.5	0	0	5	42	80	94	2.21	do	119	111	do		
Do	do	do	1937	44288	do		.5	0	0	4	33	74	93	2.04	do	137	121	do		
Do	do	do	1937	44483	do		.5	0	0	2	34	75	91	2.02	do	143	134	do		
Do	do	do	1938	44987	do		.5	0	0	2	34	74	92	2.02		145	138	do		
Do	do	do	1938	46076	do		.3	0	0	5	43	77	92	2.17		139	135	do		
Do	do	do	1939	46539	do		.5	0	0	2	23	68	93	1.86	Low	119	115	do		
Do	do	do	1941	55383	do		.7	0	0	1	43	76	91	2.11	do	111	113	do		
Do	Carthage	do	1921	18829	do			1	7	20	48	75	90	2.41	High	156	136	Tens		
Do	do	do	1921	19608	do			1	5	15	55	82	92	2.50	do	129	127	do		
Do	Talbird	do	1933	34814	do			0	0	1	14	65	94	1.74	Low	115	119	do		
Do	do	do	1934	40042	do			0	0	0	17	65	94	1.76	do	83	104	do		

[2] Crushed. [7] 50 cycles, freezing and thawing.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

NORTH CAROLINA—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			Test result		Method used	Test result	Size tested
																7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Northampton.	Garysburg	Comm.	1919	14195	Quartz			0	5	22	71	90	93	2.81		126	123	Tens.		
Do	do	do	1919	14904	Q(FM)			0	4	16	57	86	93	2.56		132	137	do		
Do	do	do	1920	16277	Q(FM)			3	11	23	56	84	92	2.69		162	159	do		
Do	do	do	1920	16894	Quartz			1	13	31	67	86	92	2.90	Low	207	183	do		
Do	do	do	1922	22262	Q(FM)			7	20	34	68	91	96	3.16	do	157	123	do		
Do	do	do	1923	24324	Q(FM)			7	19	32	67	90	95	3.10	Low	137	105	do		
Do	do	do	1936	42985	QC(F)	2.60	0.7	0	14	45	82	98	100	3.39	do	98	100	Comp.		
Pender	Burgaw	Local	1921	18873	Quartz			0	0	0	2	25	89	1.16	High	64	86	Tens.		
Person	Mill Creek	do	1922	22215	QFMMa			6	13	25	55	81	93	2.73	do	82	89	do		
Rockingham.	Madison (Dan River).	Comm.	1923	24241	Q(MF)			0	1	5	46	92	98	2.42	Low	77	75	do		
Rowan	Salisbury	do	1941	53706	QQz	2.62	.5	0	4	19	58	87	98	2.66	do	101	101	Comp.		
Do	do	do	1941	53938	QQz		.6	0	1	13	47	85	97	2.43	do	120	109	do		
Do	Salisbury (Kadkin River).	Prosp.	1921	18877	Q(MF)			0	0	2	11	43	79	1.35	High	51	60	Tens.		
Rutherford	Bostic	Local	1921	18824	QM			3	23	51	93	100	100	3.70	do	95	86	do		
Do	do	Comm.	1938	44940	Q(MMa)		.5	0	0	2	28	87	99	2.16	Low	101	85	Comp.		
Do	do	do	1938	46063	Q(GnFM)		.7	0	1	14	62	96	99	2.72	do	108	103	do		
Do	do	do	1938	46064	Q(GnFM)		.7	0	2	12	49	93	100	2.56		112	110	do		
Do	do	do	1938	46065	Q(FM)		.7	0	0	7	46	91	99	2.43		109	109	do		
Do	do	do	1938	46210	QGnScFM		.7	0	5	23	61	93	99	2.81	Low	82	73	do		
Do	do	do	1938	46211	QScFM		.7	0	3	24	69	97	100	2.93	do	83	81	do		
Do	Logan	Local	1926	28706	Q(MF)			0	1	15	57	87	97	2.57	do	79	71	Tens.		
Do	do	do	1938	28707	Q(MF)			1	7	20	59	84	97	2.68	High	85	80	do		
Sampson	Clinton	do	1921	18875	Quartz			0	2	7	28	65	95	1.97	do	94	98	do		
Do	do	do	1921	19660	do			3	10	27	67	87	92	2.86	do	114	117	do		
Stanly	Swift Island Ferry	Prosp.	1921	18414	Q(M)			0	0	0	1	37	96	1.34	do	46	59	do		
Stokes	Germanton (Town Fork Creek).	Local	1920	16511	QFM			1	4	13	43	75	95	2.31	Low	84	79	do		
Do	do	do	1921	18857	QFM			1	6	17	49	86	97	2.56	High	81	74	do		
Do	do	do	1921	18884	QFM			1	8	18	50	85	97	2.59	do	84	83	do		
Do	Walnut Cove	do	1921	19053	Q(MF)			0	1	6	31	77	96	2.11	do	72	73	do		
Surry	Elkin (Yadkin River).	Prosp.	1935	42491	QM		1.0	0	0	2	18	87	99	2.06	Low	99	101	Comp.		
Do	do	do	1936	42807	Q(MSc)		1.0	0	1	9	42	93	99	2.44	do	85	92	do		
Do	Mount Airy	do	1916	10514	Q(FM)			1	7	17	45	83	98	2.51		90		Tens.		
Swain	Oconalufty River	do	1933	34835	QScShM			0	1	7	42	89	97	2.36	High	71	79	do		
Wayne	Goldsboro	Local	1921	18827	Q(F)			1	6	17	53	90	99	2.66	do	99	92	do		
Do	do	do	1927	29652	Quartz			0	5	23	57	91	98	2.74	Low	108	99	do		
Do	do	Comm.	1936	42986	QCF	2.63	.4	0	4	18	56	93	99	2.70	do	99	102	Comp.		
Wilkes	Reddies River	Prosp.	1937	44532	QScM		1.0	1	3	13	48	91	98	2.54	High	99	88	do		
Wilson	Sims	Comm.	1921	20042	Granite [2]			9	21	36	65	81	93	3.05		126	114	Tens.		
Do	Wilson	Local	1921	18904	Quartz			0	1	6	30	49	66	1.52	High	105	106	do		

NORTH DAKOTA

Bottineau	Landa	Local	1921	20368	Quartz			4	30	57	88	93	94	3.66	Low	137	122	Tens.		
Do	Westhope	Prosp.	1923	23770	do			3	23	39	63	82	90	3.00	do	119	128	do		
Burke	Lignite	Local	1922	21383	QGL			19	66	85	95	97	98	4.60	High	155	145	do		
Do	do	do	1922	22353	QLF			3	23	45	80	94	97	3.42	do	152	138	do		
Burleigh	Bismarck	do	1920	16482	Quartz			4	28	45	68	80	94	3.19		133	136	do		
Divide	Crosby	do	1922	22355	QLF			1	10	26	66	86	93	2.82	Low	149	120	do		
Do	do	do	1922	22356	QLF			10	47	60	76	87	92	3.72	do	153	119	do		
Emmons	Linton	do	1922	21290	QLC			3	21	40	71	89	95	3.19	do	121	115	do		
Grand Forks.	Arvilla	do	1921	19519	QDo			6	32	45	62	80	95	3.20	High	123	111	do		
La Moure	La Moure	do	1922	22516	QLGF			6	32	45	69	92	97	3.41	Low	139	128	do		
Logan	Napoleon	do	1922	22515	QCGL			1	9	19	41	72	89	2.31	do	108	107	do		
McIntosh	Danzig	do	1922	21720	DoGCQ			4	27	45	73	88	96	3.33	do	186	133	do		
Do	do	do	1922	22269	QFLC			14	26	40	68	90	97	3.35	do	112	98	do		
McHenry	Velva	do	1923	23505	Quartz			17	29	44	72	89	96	3.47	do	135	125	do		

McLean	Garrison	Prosp	1921	19716	QDoG			2	21	42	74	91	96	3.26	High	118	114	do		
Do	Washburn	Local	1920	16225	QDoG			2	20	39	69	85	94	3.09		122	126	do		
Morton	Mandan	Comm	1921	20136	QLC			7	43	59	74	90	96	3.69	High	146	120	do		
Do	do	do	1921	20303	QFGSL			2	6	13	38	83	97	2.39	Low	84	86	do		
Do	do	do	1921	20433	QCDoL			1	13	27	59	88	98	2.86	High	105	112	do		
Do	do	do	1921	20496	QCL			3	11	23	55	87	97	2.76	do	98	101	do		
Do	Schmidt	do	1920	16291	QGC			5	26	40	68	94	99	3.32		112	106	do		
Do	do	do	1921	19676	QCSGL			3	22	42	73	94	98	3.32	High	125	115	do		
Do	do	do	1922	22417	QCSGL			4	23	39	60	91	97	3.14	Low	135	119	do		
Do	do	do	1922	22512	Q(MF)			3	21	37	60	91	98	3.10	do	149	132	do		
Mountrail	Belden	Prosp	1923	23644	QLG			1	15	37	72	90	95	3.10	High	132	134	do		
Do	do	do	1923	23645	QLF			1	9	22	52	77	87	2.48	do	99	103	do		
Do	White Earth	Local	1922	21741	QL			5	43	59	80	90	93	3.70	do	116	117	do		
Do	do	do	1922	21742	QLGF			0	6	23	74	93	96	2.92	do	114	126	do		
Pierce	Rugby	do	1922	21369	QDoG			3	23	39	68	89	95	3.17	Low	149	131	do		
Do	do	do	1922	21370	QLCF			2	7	20	65	93	99	2.86	do	136	128	do		
Ramsey	Churchs Ferry	do	1921	19988				3	19	31	60	85	91	2.89	do	112	104	do		
Do	Devils Lake	do	1921	19639	QDoGS			1	9	21	47	91	98	2.67	High	84	96	do		
Do	do	do	1921	19640	QDoGS			3	19	26	49	88	97	2.82	do	94	93	do		
Ransom	Lisbon	do	1920	16230	Q(LCFMa)			0	0	22	79	94	98	2.93		120	126	do		
Do	do	do	1920	16270	Q(LSMa)			0	0	23	74	90	94	2.81		100	95	do		
Do	do	do	1922	21717	QLF			1	13	41	88	95	97	3.35	Low	120	120	do		
Rolette	Dunseith	do	1922	21291	QDoC			3	19	34	57	75	83	2.71	do	118	131	do		
Sargent	Milnor	do	1922	21693	QLGF			3	17	30	64	91	96	3.01	do	119	119	do		
Ward	Carpio	do	1922	21715	LQF			1	8	26	85	97	98	3.15	do	116	110	do		
Do	Foxholm	do	1922	21344	QL			7	17	33	72	92	96	3.17	do	129	117	do		
Do	Minot	do	1922	21856	QLF			0	2	22	82	94	97	2.97	High	139	127	do		
Do	do	do	1923	23768	QCSL			7	14	28	66	86	95	2.96	Low	137	121	do		
Williams	Temple	do	1921	20827	QLCFG			1	9	18	44	71	90	2.33	do	100	107	do		
Do	Williston	do	1922	21753	QLGF			2	13	30	76	92	97	3.10	do	124	126	do		

OHIO

Adams	Sprigg Township	Local	1920	16724	QCLMa			17	34	51	72	89	93	3.56	Low	183	181	Tens		
Ashland	Hanover Township.	do	1918	13462	SDo			4	31	59	91	97	98	3.80		143	140	do		
Do	Perrysville	do	1927	29313				7	21	42	76	87	91	3.24		139	145	do	•	
Ashtabula	Ashtabula	Comm	1919	14508	Q(SQz)			1	5	11	21	36	91	1.65		92	94	do		
Do	Conneaut (Turkey Creek).	Local	1922	22230	QLCSF			2	18	43	88	96	97	3.44	Low	122	112	do		
Do	Kingsville	do	1919	14210	QS			1	16	36	64	83	97	2.97		118	112	do		
Auglaize	Douchouquet Township.	do	1922	21844	LCQ			4	31	57	87	95	97	3.71	Low	157	148	do		
Do	do	do	1922	22571	LQSC			2	20	39	70	87	95	3.13	do	160	155	do		
Do	do	do	1923	23542	LQ			2	21	45	82	92	96	3.38	do	158	156	do		
Do	Saint Johns	do	1920	16358	L(QCMa)			7	27	53	83	91	95	3.56		118	112	do		
Do	do	do	1920	17203	QLMa			1	16	39	69	86	93	3.04		165	145	do		
Do	do	do	1920	19447	LQ			11	36	55	78	85	91	3.56	Low	153	135	do		
Butler	Ross	do	1922	21256	LSGQFC			4	18	33	61	87	96	2.99	do	129	124	do		
Champaign	Mechanicsburg	Comm	1919	14960	SLCQ			1	11	29	71	87	94	2.93		135	141	do		
Do	do	do	1919	15015	QLC			1	16	40	75	90	95	3.17		140	141	do		
Do	do	do	1920	16415	LQ			2	25	55	86	98	99	3.65		155	166	do		
Do	do	do	1920	16769	QCL			2	17	40	78	90	94	3.21	Low	164	155	do		
Do	do	do	1920	17241	QLCMa			1	14	33	72	90	95	3.05		157	125	do		
Do	do	do	1920	17388	QLS			3	27	51	84	95	97	3.57		173	160	do		
Do	do	do	1921	19580	LCSQ			2	18	43	86	96	98	3.43	Low	116	106	do		
Do	do	do	1922	21607	LQCG			3	13	30	68	90	96	3.00	do	146		do		
Do	do	do	1922	21669	LQC			2	22	48	82	91	94	3.39	do	167	172	do		
Do	do	do	1922	21842	LQC			7	31	52	80	90	95	3.55	do	169	162	do		
Do	do	do	1923	24302	QCLS			1	7	26	81	94	97	3.06	do	138	121	do		
Do	do	do	1924	25907				6	27	53	89	97	99	3.71	do	133	119	do		
Do	Urbana	Local	1920	16768	QLC			3	21	38	68	90	94	3.14	do	183	152	do		
Do	do	Prosp	1921	19936	QLC			4	24	43	68	90	93	3.22	do	161	150	do		
Do	do	Comm	1922	22266	QCLSF			3	19	38	71	90	95	3.16	High	134	125	do		
Do	do	do	1923	23843	LQS			1	11	31	75	90	95	3.03	Low	124	142	do		
Do	do	do	1923	24269	LDoQC			0	3	16	73	93	97	2.82	do	119	120	do		
Do	do	do	1923	24401	LDoQC			0	4	20	68	91	97	2.80	do	136	132	do		
Do	do	do	1935	42074	LQShSCG			2	7	28	59	94	98	2.88					7.7	4–50
Clark	Bethel Township	Local	1921	20104	QLCG			5	20	37	71	92	97	3.22	Low	161	141	Tens		
Do	Harmony Township.	do	1929	32009	QLS			2	14	30	56	88	97	2.87	do	130	129	do		
Clermont	Goshen	Comm	1921	19137	QLSC			5	48	73	94	98	99	4.17	do	152	137	do		
Do	Loveland	do	1920	16343	QLSC			1	14	37	76	90	96	3.14		129	121	do		
Do	Miamiville	do	1924	26272	QLSC			5	22	46	84	97	99	3.53	Low	169	145	do		
Clinton	Adams Township	Local	1922	22508	LQC			11	36	54	77	89	95	3.62	do	144	164	do		
Do	do	do	1923	23638	LQS			6	32	53	80	92	97	3.60	do	144	150	do		
Do	Melvin	Comm	1946	70532	Dolomite[2]	2.78		0	3	25	50	80	86	2.44	do	134	128	Comp	3.0	16–50
Do	do	do	1946	71309	do.[2]	2.78	1.0	0	4	33	61	78	90	2.66	do	112	108	do	3.9	4–50

[2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

OHIO—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			Test result		Method used	Test result	Size tested
																7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Columbiana	East Liverpool	Comm.	1920	16525	Q(CLMa)			1	9	21	45	80	97	2.53		118	127	Tens.		
Do	Leetonia	do	1922	21244	Slag[2]			9	29	45	67	80	91	3.21		106	123	do		
Coshocton	Oxford Township (Tuscarawas River.)	Local	1922	21302	QLSC			4	27	48	77	93	98	3.47	Low	144	143	do		
Crawford	Spore	Comm.	1936	43025	Limestone[2]			0	12	45	69	83	91	3.00					11.3 52.1	4–100 4–100
Do	do	do	1937	44386	do.[2]														12.5	4–100
Cuyahoga	Bedford	do	1920	16247	QCS			14	29	41	54	70	90	2.98		109	120	Tens.		
Do	do	do	1920	16524	QCS			3	15	23	39	61	89	2.30		111	111	do		
Do	do	do	1920	16533	QCS			14	26	37	53	73	91	2.94	Low	122	128	do		
Do	do	do	1921	20802	QDoS			3	16	28	49	68	82	2.46	High	97	95	do		
Do	do	do	1921	20958	QS			8	21	32	53	74	90	2.78	do	82	90	do		
Do	Cleveland (Cuyahoga River).	do	1919	14617	QSQz			4	30	45	60	79	92	3.10		99	115	do		
Do	do	do	1919	14618	QSQz			1	5	10	23	55	87	1.81		78	88	do		
Darke	Fort Jefferson	do	1919	15181	LCQ			2	21	41	72	88	95	3.19		99	136	do		
Do	do	do	1919	15192	QCS			1	9	23	62	88	97	2.80		122	118	do		
Do	do	do	1919	16145	QLCMa			2	21	43	72	86	94	3.18		187	153	do		
Do	do	do	1919	16267	QLCMa			4	27	49	75	90	97	3.42		150	156	do		
Do	do	do	1920	16373	QLC			11	39	62	84	94	97	3.87		165	163	do		
Do	do	do	1920	16455	QLC			2	16	31	56	77	94	2.76		137	135	do		
Do	do	do	1920	17204	QLC			1	11	32	76	93	98	3.11	Low	172	139	do		
Do	do	do	1920	17206	QLC			1	6	23	69	89	98	2.86	do	130	135	do		
Do	do	do	1922	21843	QLC			5	24	40	64	85	95	3.13	do	163	168	do		
Do	do	do	1922	21864	QLC			1	11	25	59	86	95	2.77	do	140	147	do		
Do	do	do	1923	24031	QLCS			11	31	49	59	83	95	3.28	do	134	125	do		
Do	Greenville	do	1919	14755	QLGC			2	18	34	56	74	91	2.75		137	129	do		
Do	do	do	1921	17927	QLSC			5	35	61	86	95	98	3.80	Low	158	125	do		
Do	do	do	1922	22570	QLCF			6	21	42	76	88	93	3.26	do	184	175	do		
Do	do	do	1923	23427	QCLS			6	29	51	80	92	97	3.55	do	147	155	do		
Do	do	do	1923	23848	QCLS			11	40	58	84	95	97	3.85	do	148	160	do		
Delaware	Delaware (Maumee River).	Prosp.	1921	19381	QCLS			0	1	11	64	96	99	2.71	High	82	71	do		
Erie	Sandusky (Lake Erie).	Comm.	1918	13291	QLGC			1	12	34	64	72	90	2.73		100	121	do		
Do	do	do	1919	14930	QCSL			1	11	28	52	58	82	2.32		135	132	do		
Do	do	do	1919	14977	QSL			2	14	25	38	57	85	2.21		94	103	do		
Do	do	do	1920	16100	Q(Ma)			0	0	1	2	20	91	1.14		88	89	do		
Do	do	do	1920	16526	QSFC			0	5	12	28	59	92	1.96		101	105	do		
Do	do	do	1920	16531	QFSMa			1	8	17	35	65	97	2.23	Low	105	105	do		
Do	do	do	1920	16718	QLCMa			1	7	16	37	68	95	2.24	do	115	118	do		
Do	do	do	1920	16883	QLCMa			2	10	19	37	64	93	2.25	do	132	124	do		
Do	do	do	1920	16914	QLCMa			3	15	26	45	70	97	2.56	do	113	124	do		
Do	do	do	1921	19339	QCSLMa			2	12	26	57	81	96	2.74	do	113	109	do		
Do	do	do	1921	19445	QCLS			2	17	33	60	81	95	2.88	High	130	116	do		
Do	do	do	1921	19775	QLCMa			2	11	23	54	81	96	2.67	Low	113	122	do		
Do	do	do	1921	19792	QLC			1	8	15	33	63	91	2.11	do	102	107	do		
Do	do	do	1921	20048	QCFLMa			1	8	16	38	64	91	2.18	do	113	106	do		
Do	do	do	1921	20561	QCFLMa			1	5	9	30	65	95	2.05	do	86	94	do		
Do	do	do	1922	21130	QCLG			2	11	21	48	79	96	2.57	do	126	124	do		
Do	do	do	1922	22293	QCLG			3	18	35	61	83	96	2.96	do	158	120	do		
Do	do	do	1922	22605	QCLS			2	15	28	52	82	97	2.76	do	135	112	do		
Do	do	do	1923	23168	QCLS			6	23	35	55	81	96	2.96	do	143	119	do		
Do	do	do	1923	23171	QSL			6	29	45	68	86	95	3.29	do	145	142	do		
Do	do	do	1923	23736	QCL			1	8	17	33	76	96	2.31	do	113	107	do		
Do	do	do	1923	23737	QCL			1	10	21	41	78	97	2.48	do	116	110	do		
Do	do	do	1923	23738	QCL			1	11	22	42	77	97	2.50	do	112	117	do		
Do	do	do	1923	23752	QCL			4	22	37	56	77	95	2.91	do	126	129	do		
Do	do	do	1923	24231	QCL			4	23	39	61	86	97	3.10	do	132	135	do		
Fairfield	Berne Township	Local	1924	26081	QCLS			4	22	40	68	87	95	3.16	do	136	134	do		
Do	North Berne	do	1923	23793	QCLS			7	24	41	69	90	96	3.27	do	157	132	do		
Do	do	do	1923	23794	QCLS			7	26	43	69	90	97	3.32	do	161	134	do		

Franklin	Columbus	Comm	1921	19293	QCS			8	35	51	80	95	97	3.66	High	151	123	do			
Do	do	do	1922	21360	LQG			4	29	53	87	95	98	3.66	Low	154	138	do			
Do	do	do	1923	24226	LQCSFG			2	17	39	71	84	95	3.08	do	131	139	do			
Do	do	do	1923	24249	LQC			3	23	43	79	92	95	3.35	do	128	120	do			
Do	do	do	1928	30243				3	21	42	69	89	95	3.19	do	132	124	do			
Do	do	do	1928	30284	LSQCSI			2	18	40	65	85	94	3.04	do	136	128	do			
Do	do	do	1934	40132	SLSIShCQ			0	9	34	64	90	97	2.94					19.0	4–100	
Do	do	do	1935	42077	LShQSCG			0	6	27	60	91	97	2.81					8.8	4–100	
Do	Marble Cliff	do	1928	30638	Limestone [2]			5	10	22	54	76	91	2.58		129	130	Tens			
Do	do	do	1928	30639	do.[2]			1	7	25	59	81	93	2.66		120	111	do			
Do	do	do	1936	42675	do.[2]			0	3	27	55	75	91	2.51					17.0	4–100	
Do	do	do	1936	42676	do.[2]			0	2	25	54	75	91	2.47					13.1	4–100	
Do	do	do	1936	42677	do.[2]			0	3	26	54	75	92	2.50					14.5	4–100	
Do	do	do	1936	42678	do.[2]			0	16	45	70	86	95	3.12					9.6	4–100	
Do	do	do	1936	42679	do.[2]			0	15	43	68	83	94	3.03					10.5	4–100	
Do	do	do	1936	42680	do.[2]			0	19	49	73	87	95	3.23					8.0	4–100	
Do	do	do	1946	70533	do.[2]	2.55	2.3	0	4	33	64	82	92	2.75		140	106	Comp	7.7	8–50	
Gallia	Gallipolis	Local	1921	19325	QCMa			7	13	17	54	96	97	2.84	High	111	104	Tens			
Do	do	do	1923	23744	QCS			8	19	31	59	89	95	3.01	do	124	114	do			
Geauga	Auburn	do	1922	22229	QLCS			3	17	31	54	75	87	2.67	Low	139	147	do			
Do	do	do	1922	22641	QLCS			7	24	38	61	80	91	3.01	do	145	124	do			
Hamilton	Cleves	Comm	1920	16429	QL(FMa)			2	15	31	58	83	96	2.85	do	134	155	do			
Do	do	do	1923	23526	LQCS			3	21	37	69	91	97	3.18	do	161	187	do			
Do	Harrison	Prosp	1920	16439	DoQ			5	42	64	78	88	96	3.73	do	194	158	do			
Do	do	do	1920	17311	QLCMa			7	20	35	63	86	95	3.06	High	166	117	do			
Do	Miami	Comm	1919	15204	Q(CL)			2	21	41	72	89	96	3.21		136	136	do			
Do	Newtown	do	1946	70530	QLCG	2.67	1.7	0	1	6	33	76	93	2.09	Low	100	94	Comp	1.8	16–50	
Do	do	do	1946	71306	QLCSG	2.66	1.5	0	11	30	59	86	97	2.83	do	108	106	do	2.8	4–50	
Do	Remington	do	1922	21785	QLCG			4	24	45	78	92	96	3.39	do	161	145	Tens			
Do	do	do	1922	22486	QLCG			4	28	50	79	94	97	3.52	do	166	179	do			
Do	do	do	1922	22487	QLCG			3	24	49	86	96	98	3.56	do	188	162	do			
Do	Valley Junction	do	1922	21784	QLCG			3	22	46	78	90	95	3.34	do	164	155	do			
Do	White Water Park	Prosp	1920	16435	QLC			14	35	49	70	89	96	3.53	do	167	148	do			
Do	do	Comm	1921	19622	QCLG			2	16	33	65	86	94	2.96	do	110	111	do			
Hocking	Logan (Hocking River).	Local	1922	22396	QCLS			3	19	40	80	95	97	3.34	do	123	110	do			
Do	do	do	1923	23705	QCLS			6	29	42	86	97	98	3.58	do	119	121	do			
Holmes	Kill Buck	Comm	1919	14780	QCLS			3	24	45	74	90	95	3.31		183	149	do			
Do	do	do	1919	14920	QCLS			2	21	43	70	86	94	3.16		141	130	do			
Do	do	do	1920	16884	QCLS			2	21	41	67	85	94	3.10		182	155	do			
Do	do	do	1921	19413	QSL			3	23	42	74	89	94	3.25		137	123	do			
Do	do	do	1921	19922	QCLS			4	24	45	75	91	97	3.36	High	142	128	do			
Do	do	do	1921	19923	QCLS			5	29	49	75	89	95	3.42	do	138	112	do			
Do	do	do	1921	20039	QCLS			4	23	42	71	88	95	3.23	do	154	156	do			
Do	do	do	1921	20146	QCLS			5	26	45	71	87	94	3.28	do	149	158	do			
Do	do	do	1921	20465	QCLS			5	35	53	76	89	94	3.52	do	141	122	do			
Do	do	do	1922	21264	QCLS			8	34	53	79	92	95	3.61	do	157	151	do			
Do	do	do	1922	21358	QCLS			5	29	50	81	94	97	3.56	do	145	151	do			
Do	do	do	1922	22326	QCLS			2	19	40	72	91	96	3.20	do	143	138	do			
Do	do	do	1923	23784	QCLS			2	18	37	64	89	98	3.08	do	134	134	do			
Do	do	do	1923	24141	QCLS			8	25	41	65	88	97	3.24	do	133	129	do			
Do	do	do	1923	24142	QCLS			2	17	36	69	87	95	3.06	Low	138	133	do			
Do	do	do	1925	26612	QCLS			3	15	33	67	89	96	3.03	High	112	127	do			
Jefferson	Steubenville	do	1921	20344	QCLS			1	8	19	45	85	98	2.56	Low	93	95	do			
Do	Wells Township	do	1922	22398	QCLS			1	8	15	41	87	97	2.49	High	112	101	do			
Lake	Madison	Prosp	1919	14619	Q(QzS)			3	19	31	47	70	97	2.67		112	126	do			
Do	do	do	1919	15060	Q(CS)			4	25	42	58	74	96	2.99		112	107	do			
Do	do	Local	1923	24382	Q(LS)			1	5	8	12	33	94	1.53	Low	70	81	do			
Do	Painesville	Local	1919	14620	Q(SQz)			12	29	47	70	88	95	3.41		131	163	do			
Do	do	do	1923	24114	QSL			10	26	45	74	91	96	3.42	Low	129	122	do			
Do	Perry	Prosp	1920	16534				1	17	45	81	93	97	3.34		159	146	do			
Do	Willoughby	Comm	1923	23503	QSC			10	25	43	71	87	93	3.29	Low	131	128	do			
Licking	Newton Township (Licking River).	Local	1921	19280	QCLS			3	18	32	62	90	97	3.02	High	128	110	do			
Do	Washington Township (Licking River).	do	1922	21392	QSL			1	10	25	70	92	95	2.93	Low	131	128	do			
Logan	Richland	do	1919	15267	QSL			4	30	55	78	88	92	3.47		107	115	do			
Lucas	Silica	Comm	1933	34826	Limestone [2]		1.9	1	10	45	69	87	96	3.08					5.9 [1] 16.0	4–100 4–100	
Do	Toledo	Local	1920	16889	QLMa			1	6	16	48	84	96	2.51	High	121	112	Tens			
Do	do	Comm	1923	24198	QCL			5	25	45	75	87	92	3.29	Low	129	99	do			
Do	Toledo (Lake Erie).	do	1921	19328	QLCS			2	14	25	48	74	93	2.56	do	110	91	do			
Do	do	do	1921	19776	QGCLMa			6	17	30	55	75	93	2.76	High	96	91	do			
Do	do	do	1921	20082	QLCS			5	18	35	70	87	95	3.10	do	132	116	do			
Do	do	do	1922	21122	QLCS			11	30	47	79	92	96	3.55	Low	148	128	do			
Do	do	do	1922	22294	QLCS			5	15	24	45	70	92	2.51	do	113	90	do			

[1] Magnesium sulfate test. [2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

OHIO—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.			Pct.	Pct.		Pct.	Sieve No.
Lucas	Toledo (Maumee River).	Comm.	1918	13576	Q(SC)			1	10	19	39	74	94	2.37		80	88	Tens.		
Do	do	do	1919	15049	Q(LC)			2	12	21	36	62	92	2.25		80	76	do		
Madison	Deercreek Township.	Prosp.	1923	24257	QLC			2	27	45	72	88	93	3.27	Low	136	143	do		
Do	West Jefferson	Comm.	1935	42110	LShQSC			1	10	58	82	93	97	3.41					5.0	4–100
Mahoning	Youngstown	do	1920	16051	SQL			9	22	36	58	77	90	2.92		131	132	Tens.		
Do	do	do	1922	21769	Granul. slag	2.14		8	32	58	70	83	88	3.39		54	55	do		
Marion	Marion	do	1921	19563	LQ			1	12	33	74	91	96	3.07	Low	131	125	do		
Do	do	do	1921	19584	QCLS			5	23	41	67	84	91	2.71	do	138	115	do		
Do	do	do	1921	20006				3	9	18	51	81	94	2.56	do	122	106	do		
Do	do	do	1921	20074	LQF			11	23	41	70	87	96	3.28	do	148	131	do		
Do	do	do	1921	20468	QCSLG			1	11	23	56	76	92	2.59	do	121	111	do		
Do	do	do	1922	21670	LQC			10	25	43	72	86	94	3.30	do	163	155	do		
Do	do	do	1922	22547	LQF			8	24	36	53	72	87	2.80	do	131	122	do		
Do	do	do	1922	22549	LQSC			8	24	40	65	81	91	3.09	do	160	156	do		
Do	do	do	1923	24205	QCL			2	14	29	57	83	95	2.80	do	125	145	do		
Do	do	do	1923	24413	LDoQ			3	16	27	45	67	90	2.48	do	134	117	do		
Miami	Pleasant Hill	do	1919	14773	QCL			0	3	7	42	70	89	2.11		143	135	do		
Do	do	do	1919	15193	QCL			0	5	15	46	76	94	2.36		106	112	do		
Do	do	do	1921	19761	QCL			7	31	57	84	92	95	3.66	Low	140	145	do		
Montgomery.	Butler Township	Local	1925	26939	LQFS			9	21	35	74	94	98	3.31	do	137	132	do		
Do	Dayton	Comm.	1919	14754	QCL			1	10	21	46	70	93	2.41		134	129	do		
Do	do	do	1920	16375	QCL			10	32	51	71	87	96	3.47		158	149	do		
Do	do	do	1919	17190	QCL			3	23	41	66	90	96	3.19		185	156	do		
Do	do	Local	1921	19759	QCL			7	27	50	84	94	97	3.59		178	148	do		
Do	do	Comm.	1921	20107	QCL			2	12	23	53	84	95	2.69		137	125	do		
Do	do	Local	1923	24277	QCL			4	25	43	71	92	97	3.32	Low	120	121	do		
Do	do	Comm.	1924	26324	QL			3	14	30	63	90	98	2.98	do	108	113	do		
Do	do	do	1925	26820	QCL			3	16	34	62	87	97	2.99	High	144	126	do		
Do	Germantown	do	1919	15209	QCL			3	20	44	76	88	94	3.25		129	132	do		
Do	do	do	1919	16379	QCL			3	28	53	81	93	96	3.54		158	159	do		
Do	do	do	1921	19760	QCL			3	20	41	73	91	96	3.24	Low	138	175	do		
Do	do	do	1921	20131	LQCFG			3	18	35	64	88	96	3.04	do	145	149	do		
Do	Liberty	do	1920	16458	LDoQ			4	35	62	83	90	95	3.69	do	156	137	do		
Morgan	Morgan Township.	Local	1920	16920	QCLMa			3	18	36	59	84	94	2.94	do	170	147	do		
Morrow	Shauck	do	1923	23781	QSL			4	23	43	74	88	94	3.26	do	119	128	do		
Muskingum.	Dresden	Comm.	1921	19371	QCLSG			3	22	40	78	95	97	3.35	High	139	137	do		
Do	do	do	1921	19372	QCLS			3	18	31	64	90	96	3.02	do	138	122	do		
Do	do	do	1921	19794	QCLS			2	17	35	68	90	97	3.09	do	136	122	do		
Do	do	do	1921	19795	QCLS			2	15	30	60	88	96	2.91	do	113	116	do		
Do	do	do	1922	22217	QCLSGF			7	33	50	69	85	93	3.37	do	144	145	do		
Do	do	do	1922	22496	QCLSGF			4	24	41	70	93	97	3.29	do	158	153	do		
Do	do	do	1923	23639	QSL			1	18	35	67	90	96	3.07	Low	130	127	do		
Do	do	do	1924	26267	QCSL			4	22	41	70	92	98	3.27	do	133	136	do		
Do	Ellis (Muskingum River).	do	1918	13187	QC			0	1	9	42	82	96	2.30		117	140	do		
Do	Gilbert (Muskingum River).	do	1922	21617	QLSGC			7	16	24	47	84	94	2.72	High	151	143	do		
Pickaway	Derby	Local	1922	22290	QDo			6	35	53	76	88	92	3.50	Low	171	156	do		
Do	Jackson Township	do	1922	22291	QDo			7	41	61	84	92	94	3.79	do	146	143	do		
Pike	Sargents	Comm.	1920	16023	QCL			6	22	39	68	92	98	3.25		145	139	do		
Do	do	do	1920	17209	QCL			8	27	47	73	92	95	3.42	Low	184	158	do		
Do	do	do	1921	19291	QLSG			5	23	41	79	95	97	3.40	do	142	133	do		
Portage	Aurora	Local	1922	22228	QLSF			4	14	25	48	78	94	2.63	do	110	121	do		
Do	Earlville	do	1921	19473	QSC			2	18	34	58	86	97	2.95	do	120	109	do		
Do	do	do	1921	19525	QSC			1	7	15	38	75	96	2.32	do	102	102	do		
Do	do	do	1923	24113	QSL			7	15	28	66	90	96	3.02	do	124	129	do		
Preble	Camden	Comm.	1923	24107	LQF			3	24	43	68	86	96	3.20	do	135	135	do		
Do	Somers Township	Local	1921	20127	LQ			5	21	38	65	84	95	3.08	do	146	153	do		

Ross	Chillicothe	Comm.	1920	16664	QCL			1	10	28	67	93	98	2.97	do	132	120	do		
Do	do	do	1921	19947	QCL			1	11	27	68	93	96	2.96	do	131	122	do		
Do	do	do	1921	20564	QSLGC			1	12	29	69	93	97	3.01	High	115	119	do		
Do	do	do	1923	23803	QCLS			3	27	45	72	94	99	3.40	Low	132	130	do		
Do	Franklin Township.	Local	1922	22472	QCL			3	20	33	59	89	95	2.99	do	148	133	do		
Do	do	do	1923	23718	QCSL			1	9	22	57	90	97	2.76	do	126	129	do		
Do	Harrison Township (Scioto River).	do	1921	19946	QCL			3	20	33	78	93	95	3.22	do	133	131	do		
Sandusky	Fremont	Comm.	1919	14935	QCSL			1	10	20	39	64	94	2.28		124	124	do		
Do	do	do	1923	23761	QCSL			2	10	20	43	77	93	2.45	Low	91	82	do		
Do	do	do	1927	28682	QCSL			1	9	26	67	87	94	2.84	High	84	90	do		
Do	do	do	1936	42629				2	15	42	76	96	100	3.31					15.0	3/8"–50
Do	do	do	1936	42630				3	17	45	82	98	100	3.45					16.2	3/8"–50
Do	do	do	1936	42631				3	14	36	67	90	98	3.08					15.0	3/8"–100
Scioto	Portsmouth	do	1921	19292	QCLS			0	6	17	55	91	98	2.67	High	102	98	Tens		
Do	do	do	1921	19324	QCLS			0	2	5	38	93	98	2.36	Low	90	88	do		
Do	do	do	1921	19621	QCLS			2	13	22	43	83	99	2.62	High	79	83	do		
Do	do	do	1921	19713	QCLS			3	14	21	40	86	98	2.62	do	99	103	do		
Do	do	do	1922	22672	QCLS			0	4	13	45	85	98	2.45	Low	102	91	do		
Do	do	do	1923	23616	QCLS			2	15	27	56	94	98	2.92	High	112	110	do		
Do	do	do	1923	24148	QCFS			1	9	15	35	85	98	2.43	Low	96	99	do		
Shelby	Sidney	do	1935	40966	LQSSh			0	0	13	67	88	95	2.63	do				12.1	8–50
Do	do	do	1935	40967	LQSSh			0	0	19	72	91	97	2.79	do				9.8	8–50
Do	do	do	1935	42117	LQShC			5	14	39	68	90	95	3.11					8.5	4–100
Stark	Massillon	do	1922	21359	QLSFC			3	18	40	80	95	97	3.33	Low	153	138	Tens		
Do	do	do	1922	22211	QLSFC			5	25	45	74	91	97	3.37	do	156	155	do		
Do	do	do	1922	22212	QLSFC			5	30	51	77	89	96	3.48	do	163	148	do		
Do	do	do	1922	22324	QCSL			3	17	32	54	78	94	2.78	do	120	124	do		
Do	do	do	1922	22586	QCSL			7	33	53	77	89	95	3.54	do	160	162	do		
Do	do	do	1922	22666	QCSL			6	32	52	77	90	95	3.52	do	187	159	do		
Do	do	do	1923	23170	QCSL			4	23	36	54	81	97	2.95	do	130	120	do		
Do	do	do	1923	23495	QS			8	25	43	69	86	95	3.26	do	143	161	do		
Do	do	do	1923	23654	QSL			5	25	46	73	90	96	3.35	do	152	136	do		
Do	do	do	1923	23659	LSQC			4	22	41	74	92	98	3.31	do	152	144	do		
Do	do	do	1923	23690	LSQC			5	25	46	73	89	95	3.33	do	145	140	do		
Do	do	do	1923	23725	LSQC			4	22	41	71	89	95	3.22	do	153	136	do		
Do	do	do	1923	23866	LSQC			5	21	40	74	90	97	3.27	do	151	140	do		
Do	do	do	1923	24204	LSQC			4	17	35	69	88	96	3.09	do	173	127	do		
Do	do	do	1923	24273	LSQC			4	20	34	60	84	94	2.96	do	121	116	do		
Do	do	do	1924	26325	LSQC			4	15	39	77	92	98	3.25	do	109	100	do		
Do	do	do	1925	26960	LSQC			7	27	50	81	93	97	3.55	do	147	152	do		
Do	Osnaburg Township (Black Run Creek).	Local	1920	17058	SShQ			11	30	42	57	81	93	3.14	High	104	99	do		
Summit	Akron	Comm.	1921	18944	QSGF			4	25	42	65	90	98	3.24		142	124	do		
Do	do	do	1921	19564	QCSLF			2	14	27	45	80	98	2.66	High	105	95	do		
Do	do	do	1921	19962	QSL			3	14	24	47	82	96	2.66	do	101	100	do		
Do	do	do	1921	20036				1	9	19	47	80	95	2.51	Low	143	145	do		
Do	do	do	1922	21238	QSL			1	9	19	40	79	96	2.44	do	111	106	do		
Do	do	do	1922	21671	QSL			1	12	23	49	87	98	2.70	do	136	132	do		
Do	do	do	1922	22325	SQCL			1	14	29	56	88	98	2.86	do	119	124	do		
Do	do	do	1923	23418	QCSL			3	18	31	53	86	98	2.89	do	119	112	do		
Do	do	do	1923	24262	QCSL			3	24	48	79	92	97	3.43	do	174	139	do		
Do	do	do	1923	24289	QCSL			1	14	29	55	87	97	2.83	do	143	95	do		
Do	do	do	1925	26611	QCSL			1	15	35	66	89	96	3.01	do	127	110	do		
Do	do	do	1929	31331	QCSL			2	11	29	54	88	98	2.82	do	117	117	do		
Tuscarawas	Dover	Local	1923	23660				5	33	55	79	94	98	3.64	do	164	150	do		
Do	Port Washington	do	1921	20155	QSCL			6	29	49	77	91	96	3.48	High	124	112	do		
Union	Richwood	do	1922	22548	QSCL			2	19	44	81	93	96	3.35	Low	138	143	do		
Washington	Grandview	Comm.	1946	70531	LQSC	2.61	3.4	0	2	18	50	76	90	2.36	do	131	111	Comp.	9.0	8–50
Do	do	do	1946	71310	LQSC	2.60	2.6	0	26	49	67	82	93	3.17	do	129	127	do	10.0	4–50
Do	Marietta (Ohio River).	do	1920	16359	QSLFMa			1	8	21	55	90	99	2.74		160	147	Tens		
Do	do	do	1920	16920	QCSMa			1	9	21	50	87	98	2.66	High	136	123	do		
Do	do	do	1921	20412	QCSMa			4	15	21	37	83	96	2.56	do	98	84	do		
Do	do	do	1922	22495	QSC			3	26	38	65	93	98	3.23	Low	149	157	do		
Do	do	do	1922	22497	QSCGF			4	21	32	59	96	100	3.12	High	141	150	do		
Do	do	do	1923	23709	QSC			4	23	35	63	93	99	3.17	do	120	123	do		
Do	do	do	1923	23714	QCSL			7	23	37	59	82	95	3.03	do	147	128	do		
Do	do	do	1923	24263	QCSL			5	23	37	58	80	94	2.97	Low	154	125	do		
Wayne	Chester Township.	Local	1919	14779	QSL			3	23	41	61	75	88	2.91		163	147	do		
Williams	Montpelier	do	1930	33023	LShSlQC			4	16	37	62	84	96	2.99	Low	153	144	do		

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

OKLAHOMA

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			Test result 7-day	Test result 28-day	Method used	Test result	Size tested
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Bryan	Armstrong	Local	1919	14989	Limestone [2]			1	12	30	64	81	89	2.77		136	132	Tens.		
Do	Armstrong (Blue River).	do	1919	14836	Q(FML)			6	19	35	86	96	98	3.40		115	122	do		
Canadian	Concho	Comm.	1924	24981	Q(F)			3	7	15	45	81	94	2.45	Low	86	77	do		
Do	do	do	1924	25384	Q(C)			1	7	16	39	73	92	2.28	do	99	84	do		
Do	do	do	1924	26284	Q(CF)			5	9	23	63	86	96	2.82	do	111	91	do		
Do	El Reno	Local	1920	16058	Quartz			7	12	20	51	77	90	2.57		110	121	do		
Comanche	Cache	Prosp.	1935	42041	GRQ	2.42	3.7	2	25	59	79	95	97	2.57	High	87	87	Comp.		
Do	do	do	1935	42042	GRQ	2.43	3.5	0	5	22	53	91	93	2.64	do	86	97	do		
Do	Fort Sill (Medicine Creek).	Local	1919	14928	Rhyolite			1	7	23	61	88	97	2.77		121	114	Tens.		
Do	Indiahoma	Comm.	1927	29658	QF			1	12	35	64	89	96	2.97	Low	116	97	do		
Do	do	do	1929	31685	QFG			1	9	24	67	91	98	2.90	do	113	114	do		
Do	Lawton	Local	1920	17337	QF			2	15	31	60	85	93	2.86	do	141	121	do		
Do	Richards	Comm.	1920	15950	Limestone [2]			5	12	36	70	80	86	2.89		210	196	do		
Garfield	Enid	Local	1920	15764	QS			0	0	6	28	80	98	2.12	Low	89	82	do		
Hughes	Wetumka	Prosp.	1923	22748	QC			5	28	40	55	78	87	2.93	High	67	57	do		
Johnston	Bromide	Local	1920	17127	QF			4	17	36	63	84	98	3.02	Low	175	130	do		
Do	Fillmore	do	1920	16200	QF(CMa)			1	9	29	66	82	94	2.81		121	126	do		
Do	do	do	1921	19591	QF			1	10	22	39	54	91	2.17	Low	114	92	do		
Do	do	do	1921	19592	QF			2	15	35	64	76	94	2.86	do	88	72	do		
Do	Ravia (Mill Creek).	do	1924	26065	QFG			4	32	59	85	94	96	3.70	High	114	105	do		
Do	Tishomingo	Comm.	1924	25242	Q(MF)			1	14	39	73	82	91	3.00	Low	114	105	do		
Do	do	Local	1924	25243	Q(MFL)			3	29	58	84	93	97	3.64	do	116	120	do		
Kay	Blackwell	do	1920	16201	QF			6	10	18	47	88	98	2.67		105	110	do		
Do	Kaw	Comm.	1929	31571	QCF	2.64		1	8	21	42	88	99	2.59	Low	105	104	do		
Do	Ponca City	do	1927	29200	QCF			1	19	44	81	98	99	3.42	do	114	96	do		
Do	Ponca City (Arkansas River).	Local	1920	15511	QF(MMa)			1	8	17	40	76	96	2.38	do	103	101	do		
Kingfisher	Dover	Comm.	1925	26817	Q(C)			0	3	13	44	73	93	2.26	do	120	107	do		
Do	do	do	1927	29560	Q(ShSL)			0	6	20	51	87	97	2.61	do	104	89	do		
Do	do	do	1927	29684	QFLS			1	6	19	50	82	96	2.54	do	106	104	do		
Do	do	do	1929	31678	Q(FS)			0	5	14	39	81	96	2.35	do	108	107	do		
Do	do	do	1929	32058	QCFSL			0	2	17	47	83	96	2.45	do	127	119	do		
Le Flore	Peno (Arkansas River).	Local	1920	16762	QF			0	5	16	50	78	96	2.45	do	110	112	do		
Major	Ames	Comm.	1929	31656	Q(FSL)	2.64		1	7	22	51	85	96	2.62	do	129	110	do		
Do	do	do	1929	31684	Q(FSL)	2.63		1	6	20	47	80	94	2.48	do	112	114	do		
Murray	Crusher	do	1919	14769	Limestone [2]			6	33	54	72	79	85	3.29		176	149	do		
Do	do	do	1921	19246	do.[2]			4	27	51	77	84	88	3.31		197	160	do		
Do	Davis	Local	1924	24956	QF			3	13	31	64	88	98	2.97	Low	128	115	do		
Do	Dougherty	Comm.	1929	31573	QCSL	2.67		1	9	31	60	82	96	2.79	do	124	130	do		
Muskogee	Fort Gibson (Arkansas River).	do	1924	25354	CQ			3	11	22	59	92	99	2.86	do	114	102	do		
Do	do	do	1929	31533	QF	2.63		2	7	18	45	91	100	2.63	do	127	106	do		
Do	Muskogee (Arkansas River).	Local	1919	15124	Q(FMa)			1	7	17	40	72	98	2.35		89	93	do		
Do	do	Comm.	1920	15467				3	20	36	62	88	98	3.07		118	108	do		
Do	do	Local	1920	16726	Q(CMa)			0	4	12	35	83	98	2.32	Low	112	110	do		
Do	do	Comm.	1924	24851	QC			1	9	21	54	91	98	2.74	do	102	94	do		
Do	do	Local	1949	78875	QF	2.63	.2	1	7	25	48	79	98	2.58		114	111	Comp.		
Do	Wybark	do	1920	16369	Quartz			0	2	6	20	64	99	1.91	Low	84	78	Tens.		
Noble	Redrock (Black Bear Creek).	Prosp.	1920	16054	QS			11	37	48	71	91	96	3.54		117	106	do		
Oklahoma	Oklahoma City	Local	1920	16084	Q(FMa)			0	0	12	62	89	96	2.59		123	127	do		
Do	do	Comm.	1927	29683	Quartz			0	3	17	48	76	89	2.33	Low	108	104	do		
Do	do	do	1929	31677	Q(FC)			0	3	19	53	86	96	2.57	do	110	110	do		
Do	Oklahoma City (North Canadian River).	Local	1919	15185	Q(L)			0	3	7	26	68	95	1.99		86	82	do		
Do	Wadsock	do	1919	15951	Q(FL)			2	5	16	60	86	96	2.65	Low	106	95	do		
Osage	Osage	Comm.	1929	31532	QF	2.64		0	4	19	50	91	100	2.64	do	114	102	do		

Ottawa	Miami	Local	1919	15053	Chert [2]			0	11	73	99	99	100	3.82		110	105	do		
Do	do	do	1919	15054	do.[2]			0	5	41	87	92	96	3.21		132	131	do		
Do	do	do	1919	15055	do.[2]			0	6	48	89	95	98	3.36		161	173	do		
Do	do	do	1919	15057	do.[2]			11	47	73	93	97	99	4.10		120	138	do		
Do	do	do	1919	15119	do.[2]			0	0	6	36	62	82	1.86		86	115	do		
Do	do	do	1919	15120	do.[2]			6	49	78	94	97	98	4.22		136	153	do		
Do	do	do	1919	15122	do.[2]			2	17	41	66	80	89	2.95		170	165	do		
Do	do	do	1920	16324	do.[2]			15	40	64	84	90	95	3.88		156	128	do		
Pawnee	Cleveland	Comm	1927	29682	QF			3	14	32	65	96	99	3.09	Low	104	101	do		
Do	Ralston	do	1929	32024	QF	2.63		1	9	24	52	84	99	2.69	do	103	107	do		
Pontotoc	Center (Day Creek).	Local	1947	72666	QF		1.6								do	95	95	Comp		
Pottawatomie.	Harjo	Comm	1919	15301	QC			2	7	10	24	58	92	1.93		107	107	Tens		
Do	do	do	1928	30297	QC			4	18	31	43	77	95	2.68	Low	135	119	do		
Do	do	do	1928	30668	QC			5	15	26	37	75	96	2.54	do	120	104	do		
Do	Shawnee	Prosp	1927	29561	Q(LFSh)			2	6	20	50	86	97	2.61	do	109	88	do		
Do	do	do	1927	29696	Quartz			3	8	21	52	84	94	2.62	do	119	99	do		
Pushmataha.	Antlers (Kiamichi River).	Local	1920	15953	QC			3	19	29	38	76	99	2.64		105	106	do		
Sequoyah	Redland	Comm	1926	28188	QC			5	15	35	83	97	99	3.34	Low	100	99	do		
Tulsa	Tulsa	Local	1919	14913	Q(F)			1	13	29	63	86	98	2.90		116	105	do		
Do	do	Comm	1929	32010	QFC			1	7	25	57	92	100	2.82	Low	118	107	do		
Do	do	do	1929	32028	QFC			0	3	15	42	83	98	2.41	do	116	106	do		
Do	Tulsa (Arkansas River).	Local	1920	16167	Q(Ma)			0	0	1	4	28	90	1.23		82	87	do		
Do	do	Comm	1924	26094	Q(C)			1	7	21	66	92	98	2.85	Low	92	97	do		
Do	do	do	1929	31655				1	4	17	53	84	99	2.58	do	108	108	do		
Woods	Freedom	Prosp	1919	15399	Q(FCL)			0	2	12	42	70	88	2.14		100	99	do		

OREGON

Benton	Corvallis (Willamette River).	Local	1921	19072	QCMa			7	31	42	61	85	96	3.22	Low	100	89	Tens		
Jackson	Prospect	Prosp	1917	11211	QRH			0	0	4	13	49	91	1.57		73	69	do		
Do	do	do	1917	11212	QRH			0	0	3	19	59	92	1.73		66	58	do		
Linn	Harrisburg (Willamette River).	Comm	1944	66702	RF(BGQ)	2.51	2.9	9	29	41	58	86	98	3.21	Low	87	101	Comp	6.5	3⅜"–50
Multnomah	Portland	do	1935	40808	QSSh	2.68		0	6	45	78	94	97	3.20	do	94	102	Tens		
Umatilla	Umatilla	do	1944	66646	BRF(GQL)	2.67	2.2	5	14	21	50	90	98	2.78	do	104	109	Comp	5.2	4–50
Yamhill	Dayton (Willamette River).	do	1921	19417	QR			2	17	27	52	84	95	2.77	do	93	87	Tens		

PENNSYLVANIA

Allegheny	Duquesne	Comm	1936	42967	Bfs [2]			3	26	46	75	95	100	3.45					4.7 [1] 8.2	3⅜"–100 3⅜"–100
Do	Pittsburgh (Allegheny River).	do	1924	24637	Q(FCL)			1	11	19	40	89	98	2.58	Low	95	99	Tens		
Do	Pittsburgh (Ohio River).	do	1918	13413	QCS			5	30	46	61	86	98	3.26		114	129	do		
Armstrong	Kittanning	do	1949	79462	QQzL			0	4	20	35	75	95	2.29	Low	99		Comp	4.2	4–50
Berks	Birdsboro	Prosp	1921	19114	Diabase [2]			1	14	45	84	90	94	3.28		138	136	Tens		
Do	do	do	1921	19514	do.[2]			2	22	45	77	91	97	3.34		95	96	do		
Do	do	do	1922	22284	do.[2]			3	23	44	71	84	93	3.18		148	161	do		
Blair	Tyrone	do	1918	13149	Quartz			0	0	20	57	77	90	2.44		161	155	do		
Bucks	Morrisville (Delaware River).	Comm	1924	24615	QCS			3	19	35	69	96	99	3.21		108	118	do		
Do	do	do	1926	28176	QCS			9	21	32	62	86	95	3.05		123	120	do		
Do	do	do	1929	31345	QCSSl			1	8	18	43	91	99	2.60	Low	124	133	do		
Do	do	do	1944	66823	QQzS		1.6	2	15	33	54	86	98	2.88		106	95	Comp		
Cambria	Johnstown	Local	1918	12914	Sandstone [2]			13	27	37	47	60	81	2.65		106		Tens		
Clearfield	Winburne	do	1932	34600	Quartz			10	23	34	46	70	90	2.73	High	125	132	do		
Clinton	Lock Haven	Prosp	1922	21294	do			0	1	3	20	61	92	1.77	Low	74	101	do		
Columbia	Limeridge	Local	1921	18679	QCSMa			9	25	40	70	95	100	3.39	High	148	130	do		
Dauphin	High Spire	Comm	1939	46570	SShQ	2.55	1.2	2	20	37	52	87	95	2.93	Low	115	114	Comp		
Elk	Daguscahonda	do	1922	21771	QS			2	10	20	59	85	95	2.71	do	125	131	Tens		
Erie	Fairview	do	1918	13028	S(QL)			5	39	71	94	97	98	4.04		156	150	do		
Do	do	do	1918	13401	QSCGL			5	40	68	89	95	97	3.94		132	137	do		
Do	do	do	1919	14699	SL(QC)			1	15	40	70	76	94	2.96		116	135	do		
Do	do	do	1930	33147	SLG														7.6	4–100
Do	North East	do	1919	14507	QSL			2	15	33	59	80	98	2.87		133	127	Tens		
Do	do	do	1930	33148	SLCSh														6.6	4–100

[1] Magnesium sulfate test. [2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

PENNSYLVANIA—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Fayette	Point Marion (Cheat River).	Comm.	1922	21151	QS			1	5	15	46	79	94	2.40	High	98	109	Tens.		
Lackawanna.	Carbondale	do	1949	78297	Quartz			0	0	0	5	58	98	1.61	Low	109		Comp.	1.1	30–50
Lawrence	New Castle	do	1918	13638	do			3	9	16	30	56	89	2.03		100	114	Tens.		
Lycoming	Montoursville	do	1921	18491	QSC			0	0	0	1	12	88	1.01	Low	53	78	do		
Do	do	do	1921	18492	QSC			1	6	12	32	77	95	2.23	High	95	116	do		
Do	Williamsport (Williamsport River).	Local	1920	17189	Q(M)			0	0	0	3	54	99	1.56		61	56	do		
Mercer	West Middlesex	do	1939	46564	SLSh			3	24	44	64	89	99	3.23					18.2	4–100
Mifflin	Lewistown	Comm.	1950	81971	Quartz			0	0	0	7	69	98	1.74		128		Comp.		
Montgomery.	Pottstown	do	1922	21164	Bfs [2]			10	42	63	81	88	91	3.75		55	94	Tens.		
Northampton.	Glendon	do	1919	15318	Bfs [2]			1	9	23	48	62	74	2.17		108	134	do		
Do	Palmer Township	Prosp.	1924	25162	Quartz			0	0	14	51	70	81	2.16	Low	77	92	do		
Northumberland.	Mount Carmel	do	1916	10428	do			4	25	44	68	83	90	3.14		140	153	do		

RHODE ISLAND

Providence	Berkeley	Local	1930	33027	QFG			1	7	21	55	86	96	2.66	Low	91	94	Tens.	4.8 / [6] 4.4	4–50 / 4–50
Do	Smithfield	Prosp.	1940	49302	GSyGnQDi		0.7	5	18	41	70	90	97	3.21	do	94	96	Comp.		
Do	Woonsocket	Comm.	1942	57953	Peridotite [2]	3.22	.2	6	32	55	69	77	85	3.24		123	123	do		
Washington.	Charlestown	Prosp.	1940	49305	GQFSyDi		.6	7	23	46	72	91	97	3.36	Low	93	95	do		
Do	Davisville	Comm.	1930	33028	QFG			4	16	36	66	89	95	3.06	do	127	133	Tens.	4.3 / [6] 10.7	4–50 / 4–50
Do	Kingston	Prosp.	1940	49301	GScGnQDi		1.0	0	16	45	76	89	95	3.21	do	91	84	Comp.		
Do	do	do	1940	49303	GScGnQDi		.6	5	18	38	65	85	96	3.07	do	102	101	do		
Do	do	do	1940	49304	GScGnQDi		.8	4	19	45	71	87	96	3.22	do	94	95	do		
Do	Westerly	Local	1924	26264	QFMG			1	14	30	57	76	89	2.67	do	72	74	Tens.		

SOUTH CAROLINA

Abbeville	Abbeville (Little River).	Prosp.	1922	21797	Q(F)			0	1	16	70	96	98	2.81	Low	105	78	Tens.		
Do	do	do	1922	21798	Q(FM)			0	4	31	90	97	98	3.20	do	108	95	do		
Aiken	Aiken	Local	1921	19232	Q(F)			0	13	40	79	90	95	3.17	High	142	116	do		
Do	Ellenton	Prosp.	1939	46788	Quartz			0	1	6	21	49	81	1.58	Low	105	108	do		
Do	do	do	1940	48891	do		0.1	0	1	6	20	47	78	1.52	do	80	80	do		
Do	Kathwood	Comm.	1936	42898	Q(FM)			0	1	20	46	91	98	2.56	High	90	98	do		
Do	do	do	1936	42964	Quartz			1	11	36	57	90	98	2.93	Low	109	107	do		
Do	do	do	1936	42965	do			1	8	30	54	93	99	2.83	do	108	102	do		
Allendale	Allendale	Local	1942	55948	do	2.64	.2	0	0	3	28	67	94	1.92	High	97	98	Comp.		
Anderson	Anderson	do	1921	17899	Q(MMa)			0	9	32	79	93	97	3.10	do	101	99	Tens.		
Do	do	do	1923	24484	QFM			0	2	15	57	90	98	2.62	Low	88	86	do		
Do	Pelzer (Saluda River).	Comm.	1916	10132	QFM			0	4	15	50	87	99	2.55		80	79	do		
Do	do	do	1918	12998	QFM			0	10	38	86	98	100	3.32		98	96	do		
Do	do	do	1920	16132	QFM			2	5	15	56	88	98	2.64		106	98	do		
Do	do	do	1920	17479	QFM			0	14	39	84	97	98	3.32	High	99	95	do		
Do	do	do	1921	19677	QFM			1	7	20	84	99	100	3.11	do	95	93	do		
Do	do	do	1922	22661	QFM			0	3	25	93	99	100	3.20	Low	96	93	do		
Bamberg	Bamberg	Prosp.	1940	48892	Quartz		.1	0	2	18	47	97	97	2.61	do	86	88	do		

Do	Bamberg (Edisto River).	Local	1939	46787	do			0	1	4	30	82	98	2.15	High	91		do		
Barnwell	Blackville	do	1918	12899	do			0	1	16	56	93	100	2.66		86		do		
Do	do	do	1920	16795	do			0	0	2	41	90	96	2.29	Low	91	100	do		
Do	do	do	1920	16796	do			0	0	26	88	98	100	3.22	do	104	118	do		
Do	do	do	1920	16998	do			0	0	23	81	98	100	3.02	do	100	105	do		
Do	do	do	1922	22278	do			0	0	11	61	84	95	2.51	do	131	122	do		
Do	do	do	1942	55949	do	2.61	.6	0	0	6	51	97	100	2.54	do	75	80	Comp		
Berkeley	Saint Stephen	do	1942	55952	do	2.63	.2	0	0	0	22	79	94	1.95	do	113	111	do		
Do	Saint Stephen (Santee River).	do	1921	19720	do			0	0	5	69	99	100	2.83	do	87	82	Tens		
Calhoun	Saint Matthews	Prosp	1920	15774	do			0	1	7	35	61	90	1.94	do	108	107	do		
Do	do	do	1920	17661	do			1	4	8	26	53	84	1.76	High	97	93	do		
Do	do	do	1920	17662	do			0	0	9	53	86	97	2.45	do	126	113	do		
Do	do	do	1920	17663	Q(F)			0	0	9	44	74	91	2.18	do	113	105	do		
Charleston	Charleston	Comm	1938	44995	QSSh			0	1	24	48	75	91	2.39	Low	95	95	do		
Do	Pon Pon (Edisto River).	do	1920	16302	Quartz			0	1	7	38	82	99	2.27		78	91	do		
Do	do	do	1920	16303	do			0	1	24	84	97	98	3.04		80	82	do		
Do	do	do	1920	16489	do			0	1	13	61	95	99	2.69	High	91	85	do		
Do	do	do	1921	18683	do			0	3	15	50	78	96	2.42	do	87	89	do		
Do	do	do	1921	18706	do			0	3	16	66	95	100	2.80	do	96	96	do		
Do	do	do	1921	19021	do			0	5	21	71	94	100	2.91	do	93	86	do		
Do	do	do	1922	21048	Q(M)			0	2	13	59	87	97	2.58	Low	98	86	do		
Do	do	do	1922	21110	Q(FM)			0	4	15	50	83	96	2.48	do	88	93	do		
Do	do	do	1922	21163	Quartz			0	0	9	47	80	97	2.33	do	92	92	do		
Do	do	do	1922	21181	do			0	1	11	44	74	94	2.24	High	71	82	do		
Do	do	do	1927	29379	do			0	0	7	32	76	98	2.13	Low	75	77	do		
Do	do	do	1927	29525	do			0	1	10	39	78	97	2.25	do	100	106	do		
Do	do	do	1929	31682	do			0	0	13	47	82	98	2.40	High	77	85	do		
Do	do	do	1929	31683	do			0	1	11	40	79	98	2.29	Low	81	85	do		
Do	do	do	1929	32317	do			0	0	13	46	83	99	2.41	do	83	89	do		
Do	do	do	1929	32364	do			0	6	24	61	88	98	2.77	do	110	99	do		
Do	do	do	1932	34654	do		.2	0	2	12	45	67	98	2.24		101	101	Comp		
Cherokee	Blacksburg	Prosp	1923	23036	QFM			0	3	10	41	78	95	2.27	Low	78	82	Tens		
Do	do	do	1923	23037	QFM			0	1	7	38	84	96	2.26	do	76	71	do		
Do	Gaffney	do	1921	19719	QFM			2	4	13	66	93	98	2.76	do	88	71	do		
Do	do	do	1923	23441	Quartz			4	27	34	43	58	77	2.43	High	74	83	do		
Do	Gaffney (Little Thicketty Creek).	Local	1920	15491	Q(MFMa)			0	6	17	52	84	96	2.55	Low	83	82	do		
Do	Thicketty (Thicketty Creek).	do	1921	20939	Q(MMa)			1	2	7	34	72	97	2.13	High	64	75	do		
Chesterfield	Cheraw	Comm	1918	12911	Quartz			3	8	20	57	87	97	2.72		121		do		
Do	do	do	1920	16160	do			11	24	39	72	88	94	3.26		154	135	do		
Do	do	do	1920	17149	do			1	8	22	57	80	94	2.62	Low	178	144	do		
Do	do	do	1923	22708	do			7	24	45	76	87	94	3.35	High	131	109	do		
Do	do	do	1931	33912	do	2.65	.3	0	9	31	73	95	98	3.06	Low	127	113	do		
Do	McBee	do	1931	33914	Q(M)	2.66	.4	0	0	10	48	86	97	2.41	do	111	108	do		
Colleton	Jacksonboro (Edisto River).	do	1922	21223	Quartz			0	0	13	62	90	99	2.64	High	93	91	do		
Do	do	do	1923	23750	do			0	1	9	48	92	100	2.50	Low	83	86	do		
Do	do	do	1923	24485	Q(C)			0	4	22	80	97	98	3.01	do	84	86	do		
Do	Smoaks	Local	1942	55951	Quartz	2.61	.7	0	1	7	39	76	97	2.21	High	58	68	Comp		
Darlington	Lamar	Comm	1921	20359	do			0	0	5	56	96	99	2.56		86	86	Tens		
Do	do	do	1921	20488	do			0	1	4	45	91	98	2.39	High	78	78	do		
Do	do	do	1921	20931	do			0	0	8	60	95	99	2.62	Low	102	114	do		
Dillon	Dillon	Local	1925	26972	Q(MF)			3	9	22	62	89	97	2.82	do	126	128	do		
Edgefield	Edgefield	do	1922	21121	Quartz			10	25	51	82	90	93	3.51	High	146	118	do		
Do	Trenton	Comm	1920	15478	Granite [2]			2	17	38	64	76	86	2.83		117	116	do		
Do	do	do	1921	20184	do			2	20	41	70	81	89	3.03		124	124	do		
Florence	Florence	Local	1920	15889	Quartz			0	0	7	40	72	94	2.13	Low	111	108	do		
Do	do	do	1920	15893	do			0	0	9	44	72	92	2.17	High	104	104	do		
Georgetown	Bull Island	Prosp	1922	22424	do			0	0	12	68	88	98	2.66	do	0	70	do		
Do	Sandy Island	do	1922	22425	do			0	0	1	9	56	94	1.60	do	67	69	do		
Do	do	Local	1922	22676	do			0	0	0	9	57	94	1.60	do	43	36	do		
Greenville	Greenville (Saluda River).	do	1942	55946	Q(FM)	2.58	1.0	2	6	24	73	97	100	3.02	Low	85	87	Comp		
Do	Marietta (Saluda River).	Comm	1916	10133	Q(FM)			1	9	27	75	97	100	3.09		80	74	Tens		
Do	do	do	1920	17482	Q(FM)			0	2	11	53	89	98	2.53		85	84	do		
Do	do	do	1921	18262	Q(FMMa)			2	10	29	75	94	98	3.08	High	77	78	do		
Do	do	do	1921	20526	Q(FM)			0	5	21	66	94	99	2.85		78	77	do		
Do	do	do	1923	24415	Q(FM)			0	2	14	54	85	99	2.54	Low	73	72	do		
Do	Taylors (Enoree River).	Local	1942	55945	Q(FM)	2.56	1.4	0	1	16	61	92	97	2.67	do	78	77	Comp		
Do	Travelers Rest	Comm	1922	22359	Granite [2]			1	3	9	35	59	77	1.84		89	88	Tens		
Do	do	do	1924	26137	do [2]			0	7	25	72	91	97	2.92		88	116	do		

[2] Crushed. [6] 60 cycles, freezing and thawing.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

SOUTH CAROLINA—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			Test result		Method used	Test result	Size tested
																7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Greenwood	Greenwood	Local	1921	18834	Q(F)			0	3	11	49	87	97	2.47	High	99	92	Tens		
Do	Hodges	Prosp	1923	22741	Q(F)			1	3	14	67	92	98	2.75	Low	91	86	do		
Do	South Greenwood	Local	1921	18835	Q(F)			1	2	7	31	70	96	2.07	High	85	79	do		
Horry	Conway	Prosp	1920	15449	Q(F)			0	4	20	72	82	89	2.67		113	126	do		
Do	do	do	1920	16485	Q(M)			0	0	0	2	4	61	.67	Low	74	70	do		
Do	Cool Springs	do	1920	16425	Quartz			0	0	0	4	13	69	.86		86	85	do		
Do	Toddville (Waccamaw River).	do	1922	21760	do			0	3	8	27	51	95	1.84	High	98	88	do		
Kershaw	Camden	do	1921	20836	do			4	23	61	99	99	100	3.86	do	123	122	do		
Do	do	do	1921	20837	do			2	7	27	81	87	91	2.95	do	130	146	do		
Do	do	Comm	1928	30199	QFM			0	1	5	29	92	99	2.26	Low	86	78	do		
Lancaster	Taxahaw	Local	1923	22760	QF			11	44	71	95	98	99	4.18	do	129	98	do		
Do	Tradesville (Lynches River).	Prosp	1922	21123	QF			8	29	59	96	99	100	3.71	High	110	89	do		
Do	do	do	1922	21125	QF			5	34	70	98	99	100	4.06	Low	102	70	do		
Do	do	do	1922	21616	QF			4	28	61	95	98	99	3.85	High	113	108	do		
Laurens	Clinton	Local	1920	17566	QFMMa			1	9	23	69	94	99	2.95	Low	90	87	do		
Lexington	Cayce	Comm	1919	14503	Granite [2]			4	32	58	77	82	86	3.39		148	166	do		
Do	Dixiana	do	1920	15402	Quartz			0	0	16	71	80	89	2.56		144	129	do		
Do	do	do	1920	15403	Q(M)			0	0	3	45	75	92	2.15		100	101	do		
Do	do	do	1920	15404	Q(M)			0	0	0	11	55	91	1.57		101	110	do		
Do	do	do	1920	16819	Q(M)			0	0	8	55	78	91	2.32	Low	154	145	do		
Do	do	do	1920	16874	Q(M)			0	0	5	54	79	92	2.30	do	141	128	do		
Do	do	do	1920	16875	Q(M)			0	0	5	44	78	94	2.21	do	120	118	do		
Do	do	do	1922	21897	Quartz			0	0	1	41	79	94	2.15	do	105	111	do		
Do	do	do	1922	21898	do			0	0	1	24	70	93	1.88	do	90	100	do		
Do	do	do	1922	22242	Q(MF)			0	0	10	59	83	95	2.47	do	113	115	do		
Do	do	do	1922	22443	Q(MF)			0	0	6	44	76	93	2.19	do	100	122	do		
Do	do	do	1922	22509	Q(MF)			0	0	2	41	79	94	2.16	do	92	106	do		
Do	do	do	1922	22673	Q(MF)			0	0	6	58	82	93	2.39	do	118	101	do		
Do	do	do	1923	23074	Q(MF)			0	1	5	22	66	95	1.89	do	66	71	do		
Do	do	do	1923	23080	Q(M)			0	0	2	38	73	94	2.07	do	75	72	do		
Do	do	do	1923	23460	Q(FM)			0	0	3	36	75	96	2.10	do	98	97	do		
Do	do	do	1923	23606	Q(M)			0	0	2	37	78	96	2.13	do	105	102	do		
Do	do	do	1924	24970	Q(M)			0	0	4	40	74	94	2.12	do	89	105	do		
Do	do	do	1924	26069	Quartz			0	0	0	28	68	92	1.88	do	88	101	do		
Do	do	do	1926	28705	do			0	0	8	57	78	90	2.33	do	119	113	do		
Do	do	do	1927	29320	do			0	0	2	30	72	92	1.96	do	80	109	do		
Do	do	do	1929	32315	Q(M)			0	0	3	26	70	94	1.93	do	97	98	do		
Do	do	do	1929	32316	Q(M)			0	0	4	30	76	97	2.07	do	97	96	do		
Do	do	do	1930	33909	Q(M)	2.66	0.2	0	0	1	14	68	94	1.77	do	85	92	do		
Do	do	do	1930	33910	Q(M)	2.66	.3	0	0	6	39	77	93	2.15	do	111	104	do		
Do	do	do	1930	33911	Q(M)	2.66	.2	0	0	0	6	54	94	1.54	do	68	81	do		
Do	do	do	1931	34502	Q(M)			0	0	2	20	68	90	1.80	do	85	91	do		
Do	do	do	1936	42984	Q(M)	2.64	.4	0	0	3	32	75	95	2.05	do	111	106	Comp		
Do	do	do	1939	46495	Q(M)		.5	0	0	1	32	72	95	2.00	do	119	110	do		
Do	do	do	1939	46601	Quartz		.4	0	1	19	61	90	98	2.69	do	101	102	do		
Do	do	do	1940	49397	do		.4	0	0	4	42	77	94	2.17	do	132	110	do		
Do	do	do	1940	49398	Q(M)		.4	0	0	0	9	75	95	1.79	do	117	106	do		
Do	do	do	1941	53355	Q(M)		.6	0	0	1	35	76	95	2.07	do	119	111	do		
Do	do	do	1942	55953	Quartz	2.61	.6	0	0	1	28	75	96	2.00	do	122	115	do		
Do	do	do	1942	56469	Q(MF)		.6	0	0	0	15	65	92	1.72	do	111	100	do		
Do	Gilbert	do	1924	25426	QM			0	0	4	37	70	92	2.03	do	93	94	do		
Do	Lexington	Prosp	1920	16793	Quartz			0	0	7	62	96	98	2.63	do	97	99	Tens		
Do	do	do	1920	16794	do			0	0	1	32	70	93	1.96	do	91	105	do		
Do	Styx	Local	1920	15871	do			0	0	3	52	88	99	2.42	do	111	112	do		
Do	do	do	1920	15872	do			0	0	3	34	72	98	2.07	do	110	107	do		
Do	do	do	1920	15873	do			0	0	1	38	90	99	2.28	do	110	117	do		
Do	do	do	1920	15874	do			0	0	1	30	67	93	1.91	do	102	107	do		
Do	do	do	1920	15875	do			0	0	2	38	76	96	2.12	do	108	111	do		
Do	do	do	1920	15876	do			0	0	0	6	41	90	1.37	do	88	83	do		
Do	Summit	do	1921	20942	do			0	0	6	45	71	89	2.11	do	98	111	do		
Do	do	do	1921	20943	do			0	0	3	36	69	89	1.97	do	84	102	do		
Do	do	do	1921	20944	do			0	0	1	15	56	86	1.58	do	69	83	do		

Do	do	Comm	1923	22746	do			0	0	10	69	91	98	2.68	do	109	106	do		
Do	do	do	1923	22747	do			0	0	4	56	92	98	2.50	do	102	97	do		
Do	do	do	1924	24941	do			0	0	3	52	92	98	2.45	do	110	105	do		
McCormick	McCormick	Prosp	1919	14299	Q(M)			0	0	0	3	21	62	.86		64	77	do		
Do	do	do	1919	14300	Quartz			0	2	17	67	82	93	2.61		104	106	do		
Do	do	Local	1920	15422	Gneiss [2]			3	18	32	52	64	75	2.44		97	106	do		
Do	McCormick (Hard Labor Creek).	Prosp	1920	15423	Q(F)			1	7	35	78	88	94	3.03		110	111	do		
Do	do	do	1920	16022	Q(MFMa)			0	0	5	36	78	96	2.15		86	86	do		
Newberry	Newberry	do	1921	20941	QF			14	19	29	59	84	97	3.02		0	0	do		
																[3] 83		do		
Oconee	Richland	do	1921	18770	Q(M)			0	1	9	52	89	99	2.50	Low	76	78	do		
Orangeburg	Orangeburg	do	1922	21306	Quartz			1	5	14	62	86	97	2.65	High	115	112	do		
Do	do	do	1922	22433	Q(F)			0	1	5	40	69	86	2.01	Low	110	111	do		
Do	do	do	1922	22444	Q(F)			0	3	10	45	73	93	2.24	High	95	102	do		
Do	do	Local	1922	22589	Quartz			1	10	23	53	71	85	2.43	Low	123	106	do		
Do	do	do	1923	23081	do			0	1	11	57	86	96	2.51	High	88	95	do		
Do	do	do	1923	23082	Q(M)			0	1	3	18	63	90	1.75	do	67	85	do		
Do	do	do	1923	24248	Quartz			0	0	13	71	84	89	2.57	Low	135	130	do		
Do	do	do	1942	55950	do	2.63	.3	0	0	6	34	79	96	2.15	do	106	105	Comp		
Pickens	Easley (Georges Creek).	do	1942	55947	Q(FM)	2.58	1.1	0	2	13	56	91	98	2.60	do	76	80	do		
Do	Liberty	Comm	1921	20183	Granite [2]			11	65	80	92	96	98	4.42		155	136	Tens		
Do	Pickens (Wolf Creek).	Prosp	1919	15279	Q(MF)			0	0	7	52	88	96	2.43		79	83	do		
Richland	Columbia	Prosp	1917	11374	Quartz			1	14	27	66	94	98	3.00		144	148	do		
Do	do	Local	1918	12897	do			8	23	48	87	97	99	3.62		131		do		
Do	do	do	1918	12898	do			5	13	36	82	97	99	3.32		138		do		
Do	do	do	1918	12900	do			1	8	25	67	92	99	2.92		118		do		
Do	do	Comm	1920	16820	Granite [2]			18	30	42	60	73	95	3.18		133	128	do		
Do	do	Local	1921	19678	Quartz			0	0	15	73	91	96	2.75	Low	120	122	do		
Do	do	Prosp	1922	21056	do			0	0	2	5	29	70	1.06	do	79	91	do		
Do	Eastover	do	1921	19479	do			0	6	35	85	95	97	3.18	do	126	123	do		
Do	Pontiac	Local	1922	22527	do			0	0	4	60	84	93	2.41	do	119	112	do		
Do	Wateree	Comm	1921	18988	Q(F)			0	1	10	51	89	99	2.50	do	118	109	do		
Do	do	do	1921	19476	Q(F)			1	15	34	80	94	97	3.21	do	143	132	do		
Do	do	do	1922	21615	Q(F)			1	11	31	84	97	99	3.23	do	145	123	do		
Do	do	do	1922	22251	Q(F)			8	18	29	70	93	96	3.14	do	110	106	do		
Do	do	do	1922	22588	Quartz			2	9	25	75	94	96	3.01	do	143	145	do		
Do	do	do	1923	23432	do			4	17	29	64	91	96	3.01	do	143	123	do		
Do	do	do	1924	25913	Q(MF)			1	7	23	73	94	97	2.95	do	109	113	do		
Do	do	do	1924	26295	Q(MF)			0	5	18	57	91	98	2.69	do	125	121	do		
Do	do	do	1929	32318	Quartz			1	8	21	50	92	98	2.70	do	121	114	do		
Do	do	do	1930	33913	Q(F)	2.66	.3	2	10	25	53	92	97	2.79	do	109	103	do		
Spartanburg	Duncan (South Tiger River).	Local	1942	55944	Q(M)	2.56	1.4	0	1	9	44	87	98	2.39	do	77	80	Comp		
Do	Spartanburg (Chinquepin Branch).	Prosp	1919	14497	Quartz			1	9	19	44	68	89	2.30		110	98	Tens		
Do	Spartanburg (Fair Forest Creek).	Local	1918	13019	Q(FM)			2	6	12	37	73	95	2.25		82	87	do		
Do	Spartanburg (Lawson Fork Creek).	do	1918	13017				0	2	4	14	31	81	1.32		69	69	do		
Do	Spartanburg (Pacolet River).	do	1942	55954	Q(M)	2.59	.9	0	0	1	26	81	96	2.04	Low	96	101	Comp		
Do	do	do	1942	55955	Q(FM)	2.57	1.1	0	1	22	71	94	99	2.87	do	90	98	do		
Do	do	do	1942	55957	Q(FM)	2.57	1.0	0	0	1	20	83	98	2.02	do	88	93	do		
Do	do	do	1942	55981	Q(FM)	2.60	.7	0	0	3	15	60	97	1.75	do	101	108	do		
Sumter	Sumter	Prosp	1920	16370	Q(F)			0	7	17	49	93	99	2.65		128	131	Tens		
Do	Wedgefield	Local	1920	15870	Quartz			0	0	14	85	94	96	2.89	Low	103	105	do		
Union	Delta (Padgets Creek).	do	1922	22590	Q(M)			1	7	23	69	92	98	2.90	do	78	85	do		
Do	Delta (Tiger River).	do	1922	22591	Q(M)			1	6	18	56	84	96	2.61	do	72	80	do		
Do	Delta (Tinker Creek).	do	1922	22694	QFMG			1	13	29	62	81	93	2.79	do	93		do		
Do	Lockhart (Broad River).	do	1919	15154	Q(FM)			2	16	36	62	85	98	2.99		102	108	do		
Do	do	do	1922	22240	Q(FM)			2	7	22	66	89	97	2.83	Low	80	74	do		
Do	Neal Shoals (Broad River).	Prosp	1922	21220	Q(FM)			6	14	25	54	87	96	2.82	High	90	88	do		
York	Carhartt	Local	1918	13031	Q(FM)			0	0	9	65	87	97	2.58		106	96	do		
Do	Fort Mill (Catawba River).	Prosp	1922	22665				0	0	1	14	80	97	1.92	Low	60	54	do		

[2] Crushed. [3] Tests made on washed sand.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

SOUTH DAKOTA

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Brown	Aberdeen	Local	1922	21155	QLSh			2	17	31	57	73	79	2.59	High	87	94	Tens.		
Codington	Lake Kampeska	do	1922	21716	QLF			0	1	5	38	81	97	2.22	Low	111	102	do		
Do	do	do	1922	21719	QLF			7	60	77	90	97	98	4.29	do	165	156	do		
Do	Watertown	Comm.	1921	19196	LQGFC			12	31	53	85	94	98	3.73	do	139	134	do		
Day	Webster	Prosp.	1920	16759	QLF			3	23	37	57	75	90	2.85	do	143	138	do		
Do	do	do	1920	16760	QLF			1	11	29	59	79	87	2.66	High	109	121	do		
Fall River	Oral	Comm.	1947	73118	QFSGSh	2.60	1.2	2	14	38	68	86	97	3.05	Low	96	94	Comp.		
Lake	Madison	do	1922	21764	QLCGF			2	22	47	84	94	96	3.45	do	134	128	Tens.		
Minnehaha	Sioux Falls	Prosp.	1930	32472	Quartz			1	16	40	70	92	97	3.16	do	136	117	do		
Potter	Forest City	Local	1927	28764	QCFL			2	5	14	88	98	99	3.06	do	121	92	do		
Walworth	Mobridge	do	1923	24479	QSCM			1	4	16	68	87	93	2.69	do	141	116	do		

TENNESSEE

Carter	Elizabethton	Comm.	1933	34837	QS	2.57	1.4	0	6	25	53	82	96	2.62	Low	113	122	Tens.		
Do	Siam (Watauga River).	do	1924	26002	Q(FM)			2	7	21	75	94	98	2.97	do	93	91	do		
Do	do	do	1926	28640	Q(SSh)			5	8	16	54	87	96	2.66	do	90	92	do		
Do	do	do	1931	33996	QS			2	9	19	41	78	95	2.44	do	102	101	do		
Do	do	do	1933	34819	SQCF	2.65	1.8	3	13	26	44	76	95	2.57	do	97	110	do		
Do	do	do	1933	34838	QS	2.57	1.5	5	19	34	52	82	97	2.89	do	100	122	do		
Davidson	Mimms	do	1938	46121	Limestone [2]			0	6	48	72	86	93	3.05		154	154	do		
Do	Nashville	do	1936	42918	QC		3.7	0	0	6	22	71	93	1.92	High	86	102	Comp.		
Do	do	do	1939	46596	QQzCS											89	91	Tens.		
Do	do	do	1939	46672	QQzCS			0	12	30	46	82	97	2.67		56	64	Comp.		
Do	do	do	1940	50200	QCQz		1.2	2	15	33	52	82	99	2.83	Low	95	94	do		
Do	do	do	1940	50280	QCQz		1.4	0	2	16	33	73	98	2.22	High	92	90	do		
Do	do	do	1941	53226	QCQz		1.6	0	6	15	30	76	98	2.25	Low	82	92	do		
Do	do	do	1941	53422	QCF		1.6	0	6	21	42	76	99	2.44	do	114	116	do		
Do	do	do	1944	66839	CQ	2.52	2.0	3	18	29	41	76	98	2.65	High	103	98	do	5.9	4–50
Do	Nashville (Cumberland River).	do	1923	23455	QCS			3	15	24	40	80	98	2.60	do	77	85	Tens.		
Do	do	do	1933	34815	QCS	2.49	2.9	1	10	28	43	86	99	2.67	do	113	112	do		
Do	do	do	1933	34816	QCS	2.50	2.7	0	10	29	44	85	99	2.67	do	110	129	do		
Do	do	do	1935	40832	CQ		1.2	0	6	19	32	84	98	2.39	Low	128	129	Comp.		
Franklin	Estill Springs	do	1923	23513	Q(C)			1	8	12	25	55	89	1.90	do	92	103	Tens.		
Do	do	do	1923	24180	Quartz			2	10	17	29	60	86	2.04	do	115	89	do		
Do	do	do	1923	24181	do			1	9	15	29	59	86	1.99	do	107	86	do		
Do	do	do	1924	26256	Q(C)			3	15	25	42	78	96	2.59	do	87	103	do		
Do	do	do	1930	32487	Q(C)			1	13	27	45	85	98	2.69	do	109	114	do		
Greene	Greenville (Nolichucky River).	Local	1919	14784	QMH			0	0	0	2	28	82	1.12	do	68	82	do		
Hamilton	Chattanooga	Comm.	1924	25003	QCSMF			8	27	43	69	91	98	3.36	do	115	125	do		
Do	do	do	1928	30178	QCM(ShS)	2.72		1	8	20	39	77	98	2.43	do	104	100	do		
Do	do	do	1929	31400	QC(M)			2	14	28	45	83	97	2.69	do	119	118	do		
Do	do	do	1929	31407	QCSL			3	13	23	36	75	94	2.44	do	119	119	do		
Do	do	do	1933	38294	QCS	2.62	.9	1	11	27	51	92	99	2.81	do	102	114	Comp.		
Do	do	do	1934	40775	QCS		1.0	1	9	26	48	87	97	2.68	do	131	131	do		
Do	do	do	1934	40797	QCS		.7	3	16	33	57	91	98	2.98	do	131	132	do		
Do	do	do	1935	42253	QCS		.8	2	16	32	55	90	97	2.92	do	111	112	do	5.0	4–100
Do	do	do	1938	46324	QCS		.8	1	12	30	54	88	97	2.82	do	96	100	do		
Do	do	do	1947	73015	QCS	2.59	1.4								do	91	100	do		
Do	Chattanooga (Tennessee River).	do	1918	12705	QC			4	30	41	63	84	98	3.20		120	138	Tens.		
Do	do	do	1918	12741	QC			2	19	33	61	85	97	2.97		114		do		
Do	do	do	1918	13634	QC			16	29	45	72	87	96	3.45		125	130	do		
Do	do	do	1924	24905	QCMS			5	23	39	66	91	98	3.22	Low	110	109	do		
Do	Signal Mountain	Local	1935	42258	Quartz		1.1	0	3	9	19	66	91	1.88	High	132	111	Comp.		
Hardin	Pittsburg Landing	do	1936	42695	QC	2.58	1.1	1	14	34	49	93	100	2.91	Low	120	128	do		
Haywood	Brownsville	do	1924	25921	Q(F)			0	1	7	47	85	98	2.38	do	92	92	Tens.		

Jefferson	Dandridge	do	1935	40804	SShQ		.8	0	7	27	63	97	99	2.89	do	122	123	Comp.		
Do	Dandridge (French Broad River).	Comm.	1930	33045	QCSShM	2.69		2	9	20	46	87	98	2.62	do	106	93	Tens.		
Do	Strawberry Plains	do	1928	30751	Limestone [2]			0	0	16	50	74	83	2.23		178	167	do	9.1	8–100
Do	do	do	1933	34818	do.[2]	2.70	1.0	0	1	15	63	85	95	2.59		131	156	do		
Knox	Knoxville	do	1935	40830	QCSh		.8	3	13	45	64	87	97	3.09	Low	130	123	Comp.		
Do	do	do	1935	42043	QCSSh		1.2	8	19	44	62	88	97	3.18	do	100	111	do		
Do	do	do	1935	42044	QCShSlM		1.5	0	0	7	26	88	95	2.16	do	85	76	do		
Do	do	do	1939	46597	QQzShMC											90	99	Tens.		
Do	do	do	1939	46740	QShM		1.2	0	0	1	4	82	98	1.85	Low	86	91	Comp.		
Do	do	do	1939	46741	QSLM		.6	3	18	31	43	77	92	2.64	do	115	114	do		
Do	do	do	1939	46927			1.4	2	18	35	49	83	95	2.82	do	115	110	do		
Do	do	do	1940	49323	QQzGSh		.6	0	15	36	60	86	97	2.94	do	114	115	do		
Do	do	do	1940	49324	QFShM		1.0	0	0	0	5	85	98	1.88	do	93	91	do		
Do	do	do	1940	49835	QCScM		.8	0	8	26	49	84	95	2.62	do	113	106	do		
Do	do	do	1947	73608	QSC	2.61	1.3	2	15	29	52	84	96	2.78	do	96	102	do		
Do	do	do	1947	73609	QScM	2.57	1.8	0	0	1	15	93	99	2.08	High	87	98	do		
Do	do	do	1947	74327	QSCScM	2.61	1.2	2	15	33	55	83	95	2.83	Low	106	99	do		
Do	do	Local	1949	77855	QM		1.7	0	0	1	12	90	99	2.02	High	83		do	2.7	16–50
Do	do	Comm.	1949	77938	QSc			0	0	0	2	49	96	1.47	do	86		do		
Do	do	do	1949	77939	QSSc		1.6	1	13	26	49	84	97	2.70	Low	107		do	6.3	4–50
Do	do	do	1949	78326	QScM		1.7	0	0	0	3	42	91	1.36	High	84		do		
Do	do	do	1949	78327	QScML		1.6	0	0	1	7	71	97	1.76	do	83		do		
Do	do	do	1950	81377	QSCScL		1.4	1	13	33	59	84	95	2.85	Low	114		do	4.0	4–50
Do	do	do	1950	82401	QSCGL		1.3	2	14	30	47	81	96	2.70	do	126		do	3.6	4–50
Do	Knoxville (French Broad River).	do	1937	4427	CQS		3.0	4	17	21	65	99	100	3.06	do	92	102	do		
Do	do	do	1937	44273	QSCSh		1.4	0	0	4	43	96	100	2.43	do	88	90	do		
Do	do	do	1937	44328	QCSShM		1.2	2	10	28	71	99	100	3.10	do	73	75	do		
Do	do	do	1937	44329	do		1.4	0	0	2	36	95	99	2.32	do	97	95	do		
Do	do	do	1937	44332	QSShM		1.4	0	0	1	25	96	99	2.21	do	96	101	do		
Do	Knoxville (Tennessee River).	do	1923	24417	QMCF			2	9	20	47	82	96	2.56	do	87	101	Tens.		
Do	do	do	1925	26961	QCSLM			6	17	28	52	85	96	2.84	do	106	121	do		
Do	do	do	1933	34817	QSGnSlSc	2.62	1.8	0	8	22	41	83	96	2.50	do	108	126	do		
Do	Mascot	do	1920	16114	Limestone [2]			0	0	1	12	52	94	1.59		95	111	do		
Do	do	do	1921	18663	do.[2]			0	0	1	13	45	86	1.45	do	84	96	do		
Do	do	do	1921	18726	do.[2]			0	0	1	22	62	91	1.76		87	106	do		
Do	do	do	1921	19217	do.[2]			0	0	4	47	78	93	2.22		119	116	do		
Do	do	do	1928	30750	do.[2]			0	2	17	55	81	93	2.48		136	149	do		
Do	do	do	1933	34996	do.[2]			0	0	0	6	41	75	1.22		92	107	do		
Do	do	do	1933	34997	do.[2]			0	2	30	58	81	94	2.65		127	135	do		
McMinn	Sanford	Local	1921	19971	QCS			5	18	38	76	97	99	3.33	High	107	103	do		
Do	do	do	1921	19972	QCSSl			1	10	27	67	94	97	2.96	do	96	84	do		
Do	do	do	1921	19973	QCS			8	15	27	63	91	97	3.01	do	98	92	do		
Monroe	McGhee	Comm.	1933	40005	QSScShM			0	6	22	53	93	100	2.74	Low	84	103	do		
Overton	Monroe	Prosp.	1921	19911	SCQ			6	25	44	68	82	95	3.20	High	103	100	do		
Polk	Copperhill	Comm.	1919	15212	Smelter slag [2]			0	2	23	83	95	98	3.01		98	122	do		
Do	do	do	1922	21135	do.[2]			1	11	34	83	94	97	3.20		96	132	do		
Do	do	do	1922	22696	do.[2]			0	2	23	77	92	97	2.91		97	123	do		
Sevier	Boyds Creek	Prosp.	1950	82217	QM		1.4	0	0	0	20	68	90	1.78	High	111		Comp.	3.4	16–50
Do	do	do	1950	82218	QGScM		1.6	0	0	0	3	71	95	1.69	Low	111		do	4.0	30–50
Do	Hodges Ferry	Local	1949	77583	Q(M)		1.6	0	0	5	63	99	100	2.67	High	121		do	4.3	8–50
Do	do	Prosp.	1950	82216	QGGnM		1.6	0	0	0	1	19	74	.94	do	126		do	2.1	30–50
Do	Kikers Ferry	Local	1934	40154	QFCSSlM			4	12	30	69	95	99	3.09	Low	91	90	Tens.		
Do	do	do	1934	40205	QCFGSlM	2.63	1.0	1	9	15	47	88	99	2.59	do	94	94	do		
Do	do	do	1934	40796	QSShM		1.3	0	2	13	53	96	99	2.63	do	121	111	Comp.		
Do	Pigeon Forge	do	1933	34986	Quartz			0	1	4	27	71	91	1.94	do	110	115	Tens.		
Do	do	do	1935	42045	do		1.2	0	0	2	20	68	89	1.79	do	131	136	Comp.		
Do	do	do	1938	46046	do		.4	0	0	0	9	56	89	1.54		140	135	do		
Do	do	Comm.	1939	46739	do		.9	0	0	2	32	76	94	2.04	Low	101	98	do		
Do	do	do	1940	49293	do		1.0	0	0	1	34	77	95	2.07	do	87	91	do		
Do	do	do	1940	49757	do		1.2	0	0	2	28	70	94	1.94	do	110	105	do		
Do	Pine Mountain	Local	1950	82215	do		.9	0	0	0	11	60	94	1.65	do	117		do	1.8	30–50
Do	Sevierville (Little Pigeon River).	do	1933	34998	Q(SM)			0	0	0	16	88	98	2.02	do	74	70	Tens.		
Do	do	do	1933	34999	Q(CSM)			0	0	1	24	88	97	2.10	High	73	79	do		
Shelby	Memphis (Mississippi River).	Comm.	1919	14404	QC			11	34	55	81	96	100	3.77		121	131	do		
Do	do	do	1928	30064	QCF			0	5	17	51	94	99	2.66	High	118	100	do		
Do	do	do	1928	30224	QC(SF)			1	7	24	66	97	100	2.95	do	130	101	do		
Do	do	do	1928	31205	QCF			0	5	17	51	94	98	2.65	do	114	105	do		
Do	Memphis (Wolf River).	do	1920	17476	Quartz			0	1	9	36	68	94	2.08	do	110	101	do		
Do	do	do	1921	19992	Q(F)			0	1	7	44	86	98	2.36	Low	102	99	do		
Do	do	do	1924	25048	Quartz			0	1	9	50	86	97	2.43	do	91	104	do		
Do	do	do	1924	25483	Q(C)			0	1	9	51	88	99	2.48	do	112	113	do		
Do	do	do	1924	25915	Quartz			0	2	8	39	80	95	2.24	do	96	96	do		
Do	do	do	1925	26702	do			0	1	10	53	86	96	2.46	do	115	113	do		

[2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

TENNESSEE—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Shelby	Memphis (Wolf River).	Comm.	1925	26714	Q(FM)			0	1	8	37	81	96	2.23	Low	85	87	Tens.		
Do	do	do	1925	26968	Q(C)			0	3	12	56	87	95	2.53	do	105	112	do		
Do	do	do	1925	28032	Q(C)			0	3	14	62	89	97	2.65	do	103	104	do		
Do	do	do	1925	28045	Quartz			0	1	7	43	78	94	2.23	do	80	88	do		
Do	do	do	1927	29331	Q(C)	2.65		0	2	13	60	88	97	2.60	do	103	106	do		
Do	do	do	1928	30665	Quartz			0	1	11	44	88	97	2.41	do	127	114	do		
Do	do	do	1928	30670	do			0	0	3	20	74	98	1.95	do	88	90	do		
Do	do	do	1929	31405	do			0	2	15	50	89	98	2.54	do	124	110	do		
Sullivan	Emmett (Holston River).	Prosp.	1921	18100	Q(C)			0	0	1	29	71	89	1.90		101		do		
Do	do	do	1921	19219	QSC			0	2	9	50	80	92	2.33	High	94	89	do		
Washington	Johnson City (Nolichucky River).	Local	1919	14385	Q(MScMa)			0	2	14	75	95	99	2.85	Low	101	88	do		
Do	do	Prosp.	1921	20341	Q(FM)			1	9	25	77	97	99	3.08	do	112	96	do		
Wayne	Butler Creek	Local	1940	49458	Chert		4.5	0	34	56	75	82	84	3.31	High	88	88	Comp.		
Do	Clifton	Comm.	1948	74668	CQ	2.57	1.8	0	7	20	42	89	99	2.57	Low	84	84	do	1.4	4–50
Do	do	do	1948	74770	CQ		1.5	0	8	19	37	88	99	2.51	do	101	104	do		
Do	Cypress Inn	Prosp.	1940	49748	CQ	2.23	5.5	2	28	49	62	82	96	3.19	High	82	82	do		
Do	do	Local	1940	49830	CQ	2.36	4.0	3	30	53	73	94	100	3.53	Low	89	90	do		

TEXAS

Atascosa	Atascosa River	Comm.	1921	17910	Quartz			0	0	6	32	74	95	2.07	High	92	86	Tens.		
Do	Leming	Local	1921	18690	do			0	0	3	17	49	89	1.58	Low	93	84	do		
Do	Tarbutton	do	1921	18820	do			0	0	3	18	47	83	1.51	do	97	99	do		
Bexar	San Antonio	do	1920	17467	do			0	1	5	23	55	88	1.72	do	90	103	do		
Bosque	Meridian	do	1920	17382	QCL			5	19	29	51	83	95	2.82	do	145	131	do		
Bowie	Redwater	do	1921	19919	Q(C)			2	14	24	41	57	87	2.25	do	87	91	do		
Do	Texarkana	Comm.	1920	16782	Quartz			1	6	15	39	64	77	2.02	High	107	108	do		
Do	do	do	1924	25279	QC			1	8	16	35	63	82	2.35	Low	106	94	do		
Do	do	do	1924	25431	QC			8	23	35	62	90	96	3.14	do	126	115	do		
Do	do	do	1924	26076	QC			3	19	33	66	90	96	3.07	do	113	110	do		
Do	do	do	1924	26346	QC			2	14	26	59	92	98	2.91	do	111	103	do		
Do	do	do	1925	27581	QC			8	19	31	66	91	97	3.12	do	106	94	do		
Do	do	do	1926	28076	QC			6	23	39	70	92	98	3.28	do	117	109	do		
Brewster	Toronto	Local	1924	25138	FQMSyT			12	26	44	77	91	95	3.45	do	108	109	do		
Do	do	do	1925	28001	QCLG			9	20	34	61	85	95	3.04	High	91	91	do		
Brown	Blanket	do	1920	16634	Q(CFMa)			10	18	27	52	81	96	2.84	Low	99	105	do		
Burnet	Briggs	do	1922	20985	Limestone			6	27	48	73	87	92	3.33	do	134	125	do		
Callahan	Putnam	do	1924	25245	QCLS			4	31	52	79	89	92	3.47	do	128	120	do		
Cameron	Harlingen (Rio Colorado).	Prosp.	1924	24534	Q(CFL)			0	0	0	1	56	94	1.51	High	81	89	do		
Coke	Bronte	Comm.	1928	30169	QCSL	2.64		5	23	39	55	82	97	3.01	Low	129	117	do		
Do	do	do	1929	31380	QCL	2.67		9	25	42	57	81	94	3.08	do	128	118	do		
Do	do	do	1929	31525	QC	2.65		7	16	24	33	64	91	2.35	do	112	102	do		
Do	do	do	1929	31610	QCL	2.65		6	19	39	56	78	93	2.91	do	137	112	do		
Colorado	Alleyton	do	1929	31374	QCF	2.65		1	15	40	71	94	100	3.21	do	136	122	do		
Do	do	do	1929	31425	QCF	2.62		2	16	38	70	93	99	3.18	do	126	117	do		
Do	Columbus	do	1921	18637	QCSGF			2	17	32	66	90	99	3.06	do	113	112	do		
Do	do	do	1921	20490	QCF			4	18	39	78	94	98	3.31	do	116	116	do		
Do	do	do	1924	25487	QC			3	16	39	82	94	98	3.32	do	122	119	do		
Do	do	do	1925	26895	QC			5	23	46	82	93	97	3.46	do	105	82	do		
Do	do	do	1926	28322	QC			6	23	41	75	94	98	3.37	do	110	100	do		
Do	do	do	1926	28565	QC			7	23	42	73	87	96	3.28	do	141	128	do		
Do	do	do	1926	28663	QC			4	24	46	80	93	99	3.46	do	135	114	do		
Do	do	do	1926	28734	QC			3	16	37	79	93	98	3.26	do	115	118	do		
Do	do	do	1927	28793	QC			3	21	41	76	93	98	3.32	do	115	109	do		
Do	do	do	1927	29207	QCF			2	14	29	60	85	96	2.86	do	137	111	do		
Do	do	do	1927	29215	QCF			4	22	41	67	86	96	3.16	do	130	116	do		
Do	do	do	1927	29217	QCF			5	25	43	77	95	99	3.44	do	117	111	do		
Do	do	do	1927	29464	Q(F)			3	18	37	63	94	99	3.14	do	107	121	do		
Do	do	do	1927	29495	QCF			4	20	36	60	93	99	3.12	do	107	106	do		

Do	do	do	1927	29613	QC			3	14	27	51	93	99	2.87	do	107	108	do		
Do	do	do	1927	29641	QCF			3	16	32	59	91	97	2.98	do	145	137	do		
Do	do	do	1927	29646	QCF			6	25	44	68	93	98	3.34	do	128	127	do		
Do	do	do	1927	29663	QCF			2	16	32	60	92	98	3.00	do	110	101	do		
Do	do	do	1928	30027	QCF			2	18	37	63	95	100	3.15	do	121	112	do		
Do	do	do	1928	30032	QCF			2	13	30	58	89	98	2.90	do	136	114	do		
Do	do	do	1928	30109	QCF			1	9	26	60	89	98	2.83	do	114	117	do		
Do	do	do	1928	30160	QCF			5	28	53	79	96	100	3.61	do	147	130	do		
Do	do	do	1928	30192	QCF	2.67		6	27	44	65	93	100	3.35	do	116	105	do		
Do	do	do	1928	30203	QCF			2	17	39	67	94	99	3.18	do	135	123	do		
Do	do	do	1928	30218	QCF			5	26	49	72	93	99	3.44	do	140	108	do		
Do	do	do	1928	30609	QCF			3	17	34	56	89	98	2.97	do	136	121	do		
Do	do	do	1928	30612	QCF			3	22	38	58	93	100	3.14	do	131	114	do		
Do	do	do	1928	30705	QCF			4	18	40	71	94	99	3.26	do	133	135	do		
Do	do	do	1928	30715	QCF			3	18	36	61	90	98	3.06	do	145	121	do		
Do	do	do	1928	30753	QCF			1	10	30	63	92	99	2.95	do	108	128	do		
Do	do	do	1929	31314	QCF			2	18	39	68	93	100	3.20	do	132	125	do		
Do	do	do	1929	31443	QCF			1	15	38	63	85	97	2.99	do	138	123	do		
Do	do	do	1929	31570	QCF	2.65		2	17	39	67	94	99	3.18	do	125	111	do		
Do	do	do	1929	31638	QCFL	2.66		3	22	43	72	93	98	3.31	do	140	108	do		
Do	do	do	1929	31697	QCF	2.65		2	17	42	72	93	98	3.24	do	128	117	do		
Do	do	do	1942	58246	QCF	2.61	0.4	2	11	23	39	84	99	2.58	do	96	91	Comp	3.4	⅜″–50
Do	do	do	1943	62467	QCF	2.62	.3	8	22	31	41	85	99	2.86	do	109	101	do	2.9	⅜″–100
Do	Eagle Lake	do	1930	32433	QCF	2.61	.3	1	12	30	61	91	99	2.94	do	139	129	Tens		
Do	do	do	1930	33166	QCF	2.64	.4	2	18	43	75	94	99	3.31	do	120	130	do		
Do	do	do	1930	33180	QCF	2.64	.3	4	21	48	77	95	100	3.45	do	115	127	do		
Do	Glidden	do	1924	26098	QC			8	29	51	83	97	99	3.67	do	117	104	do		
Do	do	do	1924	26108	QCFG			5	27	49	82	96	99	3.58	do	123	109	do		
Do	do	do	1924	26109	QC			4	22	43	81	95	98	3.43	do	112	102	do		
Do	do	do	1927	29452	QC			2	21	41	71	95	99	3.29	do	123	115	do		
Do	do	do	1929	31375	QFC	2.66		2	11	30	62	92	99	2.96	do	142	110	do		
Comal	Luxello	do	1927	29279	LCQ			5	24	45	73	89	97	3.33	do	156	136	do		
Do	New Braunfels	Local	1925	27321	Limestone [2]			10	32	51	70	77	82	3.22		185	159	do		
Comanche	De Leon	do	1921	20830	QC			3	23	39	58	81	92	2.96	Low	112	98	do		
Cottle	Paducah	do	1929	31288	Q(C)			3	28	47	64	83	91	3.16	do	111	109	do		
Do	do	do	1929	31289	Q(LC)			2	24	38	52	67	83	2.66	do	110	108	do		
Do	do	do	1929	31634	Q(LC)	2.64		0	4	16	54	87	93	2.54	do	132	115	do		
Do	do	do	1929	32014	QCL	2.64		1	8	19	42	78	90	2.38	do	114	117	do		
Do	do	do	1929	32268	QCSL			4	17	27	46	78	92	2.64	do	122	110	do		
Do	do	do	1929	32324	QCSL			3	14	25	49	80	93	2.64	do	120	118	do		
Do	do	do	1929	32341	QC	2.66		9	34	50	67	82	93	3.35	do	108	104	do		
Do	do	do	1929	32350	Q(CL)	2.62		8	14	19	32	68	93	2.34	do	97	96	do		
Culberson	Kent	Prosp	1922	21097	LCGQF			4	8	20	74	95	97	2.98	do	100	88	do		
Do	do	do	1922	21098	LCGQF			3	13	30	59	74	79	2.58	High	105	94	do		
Dallas	Carrollton	Local	1920	17050	QL			1	7	14	34	71	93	2.20	Low	132	129	do		
Do	do	Comm	1929	31312	QCLS			1	6	17	35	89	99	2.47	do	100	100	do		
Do	do	do	1929	31584	QCLS			2	10	22	39	80	98	2.51	do	129	128	do		
Do	Dallas	Local	1920	16986	QCLMa			4	25	39	58	85	95	3.06	do	139	144	do		
Do	do	do	1921	18725	QCL			3	22	32	44	72	92	2.65	do	130	130	do		
Do	do	do	1921	18990	QL			3	23	35	53	74	91	2.69	do	156	135	do		
Do	do	Comm	1921	19756	QL			3	21	37	59	90	97	3.07	do	136	121	do		
Do	do	do	1921	19757	QL			3	21	34	53	88	95	2.94	do	140	109	do		
Do	do	do	1921	19758	QL			3	18	28	49	88	98	2.84	do	131	118	do		
Do	do	Local	1922	21144	QL			3	19	31	46	79	96	2.64	do	145	117	do		
Do	do	Comm	1924	26007	QCL			0	5	15	52	89	97	2.58	do	136	107	do		
Do	do	do	1925	26823	QCL			9	21	35	59	87	98	3.09	do	127	118	do		
Do	do	do	1925	28019	QCL			6	22	43	80	95	99	3.45	do	154	150	do		
Do	do	Local	1929	31647	QCL	2.67		0	5	20	48	89	98	2.60	do	126	123	do		
Do	do	Comm	1929	32099	QCL	2.65		1	12	27	47	85	96	2.68	do	138	130	do		
Do	Eagle Ford	do	1922	21096	QC			3	20	33	53	83	92	2.84	do	130	119	do		
Do	Grand Prairie	do	1925	26607	QCLS			5	16	27	49	83	95	2.75	do	121	119	do		
Do	do	do	1925	26803	QCL			9	22	36	61	87	98	3.13	do	141	123	do		
Do	do	do	1925	27327	Q(CL)			1	6	15	39	83	97	2.41	do	125	113	do		
Do	do	do	1927	29358	QC			1	11	25	43	80	97	2.57	do	132	143	do		
Do	do	do	1928	30792	QCL			1	10	22	46	88	98	2.65	do	132	118	do		
Do	do	do	1929	31326	QC			6	20	39	57	86	98	3.06	do	143	121	do		
Do	do	do	1929	31581	QCLS	2.67		3	12	27	48	84	98	2.72	do	123	141	do		
Do	do	do	1929	31582	QCLS	2.68		2	14	28	45	82	98	2.69	do	117	139	do		
Do	do	do	1929	31692	QCLS	2.67		6	25	42	61	90	98	3.22	do	135	145	do		
Do	do	do	1929	32201	QCL	2.67		4	19	39	59	86	97	3.04	do	141	135	do		
Do	Gribble	do	1924	25351	QCL			9	26	38	52	81	97	2.93	do	109	117	do		
Do	do	do	1924	26020	QL			10	25	36	51	81	96	2.99	do	121	117	do		
Do	do	do	1925	26875	QCL			15	35	48	63	85	97	3.43	do	145	120	do		
Do	do	do	1928	30166	QCL			3	20	41	61	87	98	3.10	do	158	126	do		
Dickens	Spur	Prosp	1920	17404	QC			17	24	30	48	75	94	2.88	do	117	99	do		
Eastland	Eastland	Local	1922	21160	QC			4	25	39	56	75	87	2.86	do	140	120	do		
Do	Tiffin	Prosp	1922	20899	Limestone [2]			15	30	50	72	75	77	3.19		116	106	do		
Ellis	Alsdorf	Local	1929	31498	QCL	2.64		1	9	24	51	88	98	2.71	Low	126	113	do		

[2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

TEXAS—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			Test result		Method used	Test result	Size tested
																7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
El Paso	El Paso	Prosp.	1925	26646	LQC			6	23	41	65	78	91	3.04	Low	122	116	Tens.		
Do.	do.	do.	1927	28780	Granite			2	19	40	68	82	93	3.04	do.	119	122	do.		
Do.	Tornillo	Local	1929	31601	QCRGL	2.66		5	14	22	35	75	95	2.46	do.	98	107	do.		
Do.	White	do.	1927	28781	Q(CLS)			4	13	21	43	76	94	2.51	do.	109	105	do.		
Do.	Ysleta	do.	1927	28782	QC			2	7	19	51	80	96	2.55	do.	100	76	do.		
Do.	do.	do.	1927	29526	QFC			6	10	19	46	86	98	2.65	do.	87	86	do.		
Erath	Bluff Dale	do.	1920	17460	QL			4	40	59	78	87	92	3.60	do.	154	138	do.		
Fannin	Anthony	do.	1921	19457	Quartz			4	24	41	67	88	97	3.21	do.	114	92	do.		
Fayette	La Grange (Colorado River).	do.	1924	26073	QCL			5	25	49	83	94	98	3.54	do.	130	116	do.		
Do.	do.	do.	1924	26603	Q(FC)			5	16	36	75	91	98	3.21	do.	126	105	do.		
Do.	West Point	Comm.	1928	30697	QCL			4	28	52	77	92	98	3.51	do.	169	148	do.		
Do.	do.	do.	1928	30709	QCFL			6	32	53	75	91	97	3.54	do.	138	124	do.		
Do.	do.	do.	1928	30717	QCF			5	23	45	74	93	98	3.38	do.	127	109	do.		
Do.	do.	do.	1929	31471	QCFL	2.64		0	0	11	49	89	97	2.46	do.	104	97	do.		
Fisher	Rotan	Local	1920	17299	QCL			3	23	47	74	84	88	3.19	do.	147	150	do.		
Floyd	Quitaque	Comm.	1929	31399	QC(LSh)	2.61		2	18	40	58	75	95	2.88	do.	110	115	do.		
Do.	do.	do.	1929	31408	QCL	2.64		1	13	31	47	70	96	2.58	do.	114	127	do.		
Do.	do.	do.	1929	31409	QCL	2.62		6	36	54	66	80	97	3.39	do.	141	121	do.		
Do.	do.	do.	1929	31616	QCL	2.62		3	25	43	59	78	96	3.04	do.	147	136	do.		
Do.	do.	do.	1929	31622	QCL	2.62		1	15	34	51	76	96	2.73	do.	140	127	do.		
Do.	do.	do.	1929	32019	QCL	2.62		2	18	36	50	67	94	2.67	do.	129	122	do.		
Do.	do.	do.	1929	32375	QCL	2.65		3	27	44	55	74	93	2.96	do.	109	104	do.		
Foard	Crowell	Prosp.	1929	31598	QCL	2.64		2	15	29	49	84	93	2.72	do.	124	133	do.		
Do.	Thalia	Local	1929	32349	QC	2.63		6	14	24	42	85	98	2.69	do.	108	109	do.		
Goliad	Berclair	Prosp.	1929	31456	Q(LC)	2.62		2	3	8	34	90	99	2.36	do.	95		do.		
Grayson	Ambrose	Local	1920	17091	QC			3	23	44	63	74	87	2.94	do.	92	95	do.		
Do.	Denison	Comm.	1925	26777	QC			3	10	21	54	82	97	2.67	do.	106	125	do.		
Hardeman	Chillicothe	do.	1924	25206	Q(CS)			8	20	32	62	88	96	3.06	do.	132	119	do.		
Do.	do.	do.	1925	26978	QCL			13	28	39	62	86	96	3.24	do.	126	115	do.		
Do.	do.	do.	1926	28410	QCL			15	31	42	62	87	96	3.33	do.	104	110	do.		
Do.	do.	do.	1927	29359	QC			6	17	30	46	80	91	2.70	do.	132	128	do.		
Do.	do.	do.	1927	29401	QCL			8	21	34	54	88	97	3.02	do.	130	127	do.		
Do.	do.	do.	1928	30671	QCL			11	25	39	56	88	97	3.16	do.	122	141	do.		
Do.	do.	do.	1929	31441	QCFL			13	22	33	49	86	98	3.01	do.	120	113	do.		
Do.	do.	do.	1929	31467	QCL			6	19	33	50	82	95	2.85	do.	134	129	do.		
Do.	do.	do.	1929	31486	QCFL			2	14	24	40	84	98	2.62	do.	120	121	do.		
Do.	do.	do.	1929	31488	QCL			3	21	38	56	88	97	3.03	do.	125	131	do.		
Do.	do.	do.	1929	32203	QCL			6	21	37	53	79	96	2.92	do.	134	129	do.		
Harris	Houston	Local	1920	17155	QCF(Ma)			1	14	27	55	78	90	2.65	do.	148	132	do.		
Do.	do.	do.	1920	17441	Q(LC)			1	2	8	35	84	98	2.28	do.	80	72	do.		
Do.	do.	do.	1942	58007	QQzC	2.63	0.2	1	3	6	18	69	99	1.96	do.	103	101	Comp	1.0	16–50
Do.	Lynchburg (San Jacinto River).	Comm.	1925	26896	Q(C)			0	1	8	42	90	100	2.41	do.	92	91	Tens.		
Haskell	Sagerton	do.	1925	26876	QCL			1	18	39	69	86	95	3.08	do.	126	123	do.		
Do.	do.	do.	1925	26930	QCL			13	27	37	56	86	96	3.15	do.	119	108	do.		
Do.	do.	do.	1927	29398	QCL			3	13	22	34	76	95	2.43	do.	124	114	do.		
Do.	do.	do.	1928	30165	QCL			9	22	34	48	73	93	2.79	do.	124	118	do.		
Do.	do.	do.	1928	30708	QCL			4	18	31	43	75	93	3.04	do.	113	122	do.		
Do.	do.	do.	1929	30755	QCL			4	12	22	35	67	89	2.29	do.	98	106	do.		
Do.	do.	do.	1929	31600	QCL	2.65		7	20	37	52	80	95	2.91	do.	132	137	do.		
Do.	do.	do.	1929	32142	QCL	2.65		1	8	20	37	67	87	2.20	do.	127	119	do.		
Hemphill	Canadian	Local	1921	19702	Q(C)			0	7	20	54	82	95	2.58	do.	104	108	do.		
Hidalgo	Sam Fordyce	Comm.	1930	33164	Quartz	2.62	.8	4	42	59	66	73	92	3.36	do.	122	124	do.		
Do.	do.	do.	1930	33179	do.	2.62	.9	4	42	61	70	77	93	3.47	do.	132	133	do.		
Hood	Granbury	Local	1920	16662	QCL			16	35	47	64	88	96	3.46		132	110	do.		
Houston	Crockett	Prosp.	1921	20988	QC			14	37	55	75	91	96	3.68	Low	134	111	do.		
Hudspeth	Acala	Local	1929	31362	QCLF			2	9	17	28	63	89	2.08	do.	104	90	do.		
Do.	do.	do.	1929	31476	QCLS			6	14	23	34	64	89	2.30	do.	97	100	do.		
Do.	Finlay	do.	1921	20535	LQzC			3	25	47	80	94	98	3.47	do.	115	140	do.		
Do.	Fort Hancock	do.	1928	31260	Q(FL)			8	18	34	53	83	96	2.92	do.	121	107	do.		
Do.	McNary	do.	1929	31361	QCFL	2.63		0	1	11	35	80	96	2.23	do.	111	98	do.		
Do.	do.	do.	1929	31475	QCLS	2.63		0	5	15	36	79	97	2.32	do.	103	96	do.		
Jack	Jacksboro	Comm.	1924	25494	Limestone [2]			5	29	47	66	74	80	3.01		131	136	do.		
Do.	do.	Local	1925	26685	do. [2]			4	28	51	75	82	87	3.27		164	136	do.		

Jefferson	Beaumont (Neches River).	do	1920	17288	Quartz			0	0	1	15	61	98	1.75	Low	76	81	do		
Do	do	do	1923	24483	QC			0	0	4	50	88	99	2.41	do	95	86	do		
Jim Wells	Alice (Wade Creek).	Prosp	1923	24433	Q(L)			0	1	2	18	71	96	1.88	do	82	76	do		
Jones	Hamlin	Comm	1929	31696	QCL	2.67		7	29	45	59	81	94	3.15	do	127	149	do		
Do	do	do	1929	32072	QCL	2.66		4	32	51	67	86	97	3.37	do	169	144	do		
Do	do	do	1929	32325	QCLS			9	27	41	55	86	96	3.14	do	125	121	do		
Do	Luecders (Brazos River).	Local	1925	27536	QL			3	23	40	61	86	95	3.08	do	129	105	do		
Do	do	do	1925	27537	QCL			3	14	29	59	88	96	2.89	do	131	109	do		
Kaufman	Bois D'Arc	Comm	1930	33167	QCLS	2.74	.1	7	22	45	69	96	99	3.38	do	128	139	do		
Do	Kaufman	do	1939	48356	QQzCS	2.61	1.0	0	12	26	46	88	99	2.71	do	107	95	Comp		
Do	Terrell	Local	1925	26912	QCL			10	24	37	64	90	96	3.21	do	127	115	Tens		
Do	do	do	1925	26926	QCL			7	19	31	61	90	96	3.04	do	117	108	do		
Kerr	Center Point (Guadalupe River).	do	1924	25080	L(Q)			2	20	41	74	85	89	3.11	do	135	111	do		
Do	Hunt	do	1928	30177	L(Q)	2.64		1	19	47	80	92	94	3.33	do	120	107	do		
Do	Kerrville (Johnson Creek).	do	1928	30264	L(Q)			7	28	59	85	94	96	3.69	do	121	127	do		
Do	Kerrville	do	1928	30265	L(Q)			6	15	39	84	96	98	3.38	do	115	90	do		
Kimble	Junction (Llano River).	do	1921	17887	L(Q)			6	33	60	83	91	93	3.66	High	147	127	do		
Liberty	Romayor	Comm	1924	26113	QC			3	17	29	46	90	99	2.84	Low	112	109	do		
Do	do	do	1924	26263	Q(C)			3	13	23	43	87	97	2.66	do	93	94	do		
Do	do	do	1924	26323	QC			3	16	25	44	87	97	2.72	do	136	139	do		
Do	do	do	1924	26621	QC			4	17	28	51	91	98	2.89	do	124	104	do		
Do	do	do	1925	26696	QC			4	15	23	42	88	96	2.68	do	100	91	do		
Do	do	do	1926	28632	QC			2	11	22	49	90	98	2.72	do	109	99	do		
Do	do	do	1927	29396	QC			1	13	27	45	93	99	2.78	do	123	104	do		
Do	do	do	1928	30046	QC			3	15	31	52	91	99	2.91	do	125	104	do		
Do	do	do	1928	30661	QCF			2	9	19	39	84	98	2.51	do	127	103	do		
Do	do	do	1929	31546	QC			1	7	14	28	81	99	2.30	do	111	99	do		
Do	do	do	1929	31675	QC	2.64		1	7	17	41	87	98	2.51	do	101	114	do		
Do	do	Local	1942	60539	Q(C)	2.56	1.0	0	0	0	0	1	14	.15	do	95	112	Comp		
Do	Romayor (Trinity River).	Comm	1924	24482	QC			2	15	24	47	91	99	2.78	do	124	114	Tens		
Do	do	do	1924	25041	QC			5	19	29	53	93	98	2.97	do	110	104	do		
McCullough	Camp San Saba (San Saba River).	do	1921	19689	QF			7	29	51	81	91	96	3.55	do	99	95	do		
McLennan	Waco	do	1920	16767	QCL			2	15	28	51	82	94	2.72	do	128	122	do		
Do	do	do	1920	16990	QCL			1	12	23	45	80	93	2.54	do	102	103	do		
Do	do	do	1920	16992	QCL			1	10	19	41	79	94	2.44	do	111	101	do		
Do	do	do	1920	17306	QCL			3	18	31	51	80	93	2.76	do	128	120	do		
Do	do	do	1921	19230	QC			6	36	50	67	86	94	3.39	do	143	119	do		
Do	do	do	1921	20349	QCL			1	8	15	36	79	92	2.31	do	94	91	do		
Do	do	do	1921	20396	QCL			5	24	40	66	92	98	3.25	do	117	115	do		
Do	do	do	1924	25099	QCL			2	16	30	56	87	98	2.89	do	127	119	do		
Do	do	do	1924	26016	QCL			15	45	58	73	91	97	3.79	do	134	128	do		
Do	do	do	1924	26022	QCL			2	19	35	62	88	97	3.03	do	113	127	do		
Do	do	do	1924	26059	QCL			7	24	42	73	92	98	3.36	do	135	140	do		
Do	do	do	1924	26360	QC			12	28	44	64	84	95	3.27	do	121	116	do		
Do	do	do	1925	26709	QCL			1	8	22	64	86	95	2.76	do	105	102	do		
Do	do	do	1925	26796	QCL			15	38	54	75	93	98	3.73	do	125	116	do		
Do	do	do	1925	28026	QCL			1	14	27	52	84	97	2.75	do	116	115	do		
Do	do	do	1926	28630	QCL			1	6	20	53	81	93	2.54	do	123	111	do		
Do	do	do	1927	29391	QCL			1	14	29	49	81	94	2.68	do	151	125	do		
Do	do	do	1929	31613	QCL	2.63		3	18	36	55	82	95	2.89	do	122	117	do		
Do	do	do	1929	31654	QCL	2.64		1	10	27	56	89	98	2.81	do	124	122	do		
Do	do	do	1929	31674	QCLS	2.68		1	8	20	42	91	99	2.61	do	118	122	do		
Do	do	do	1929	32101	QCL	2.66		7	20	36	53	87	98	3.01	do	135	135	do		
Mitchell	Colorado City	do	1925	28605	QCL			0	5	16	45	73	91	2.30	do	109	97	do		
Do	do	do	1927	29531	QCL			1	9	18	32	76	96	2.32	do	105	115	do		
Do	do	do	1929	31360	QCLF	2.67		8	22	36	48	78	96	2.88	do	137	128	do		
Do	do	do	1929	31477	QCLS	2.66		7	18	28	41	76	97	2.67	do	118	108	do		
Motley	Matador	Local	1929	31459	QCF	2.64		1	9	26	53	92	99	2.80	do	120		do		
Do	do	do	1929	31460	QCL	2.63		1	8	20	45	88	98	2.60	do	116		do		
Do	do	do	1930	32489				3	13	23	41	87	99	2.66	do	97	100	do		
Nolan	Sweetwater	Comm	1928	30145	QCL			8	27	43	58	85	98	3.19	do	137	126	do		
Do	do	do	1929	31378	QCL	2.67		15	36	55	69	88	96	3.59	do	149	123	do		
Do	do	do	1929	31527	QCL	2.65		3	22	40	56	81	95	2.97	do	145	127	do		
Do	do	do	1929	31611	QCLS	2.65		10	39	58	72	87	97	3.63	do	175	143	do		
Do	do	do	1929	32096	QCLS	2.64		4	19	36	56	81	95	2.91	do	135	132	do		
Do	Sweetwater (Sweetwater Creek).	Local	1925	27541	QCL			10	35	49	64	82	92	3.32	do	121	116	do		
Neuces	Corpus Christi	Prosp	1923	24432	Shells			10	19	30	57	79	97	2.92	do	111	88	do		

Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

TEXAS—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			Test result		Method used	Test result	Size tested
																7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Oldham	Klox Spur	Comm	1929	31491	QCSL	2.65		12	23	35	53	90	98	3.11	Low	114	103	Tens		
Do	do	do	1929	31503	QCSL	2.65		7	18	30	52	92	99	2.98	do	116	94	do		
Do	Tascosa	do	1921	18225	QLSGFMa			0	2	8	27	64	92	1.93	do	111	90	do		
Do	do	do	1921	19066	QLC			0	0	5	33	73	94	2.05	do	97	100	do		
Palo Pinto	Mineral Wells	Local	1924	25122	QC			3	18	27	44	78	94	2.64	do	117	114	do		
Pecos	Sheffield	do	1932	34793	LQ			2	17	38	55	79	95	2.86	do	141	131	do		
Potter	Ady	Comm	1928	30756	QCSL			3	19	35	55	83	96	2.91	do	114	132	do		
Do	do	do	1929	31623	QCL			12	25	35	49	88	98	3.07	do	123	117	do		
Do	do	do	1930	33128	QCSL			3	17	33	57	85	96	2.91	do	133	136	do		
Do	Amarillo	do	1925	26818	QFLR			14	20	25	45	82	95	2.81	do	109	105	do		
Do	do	do	1928	30672	QCL			5	15	27	46	79	95	2.67	do	118	114	do		
Do	Grass Spur	Local	1921	18415	QCLSMa			2	11	18	39	72	89	2.31	do	127	114	do		
Presidio	Marfa (Marfa Creek).	do	1924	25920	QFGR			2	9	20	54	83	92	2.60	do	91	86	do		
Reeves	Balmorhea (Toyah Creek).	do	1922	21186	QCSLMa			0	1	9	47	80	92	2.29	do	96	97	do		
Do	Pecos (Pecos River).	do	1925	26679	QCL			1	6	15	40	85	97	2.44	do	116	88	do		
Runnels	Ballinger (Colorado River).	Prosp	1920	16935	QCL			3	24	38	57	77	93	2.92	do	154	124	do		
Do	do	do	1921	18890	QC			14	27	35	48	70	93	2.87	do	103	104	do		
Do	do	do	1921	19104	QCL			11	24	31	45	62	85	2.58	do	97	84	do		
Do	do	Local	1922	21207	QL			3	7	10	18	50	84	1.72	do	93	87	do		
Do	do	do	1929	31379	QCL	2.67		12	32	48	64	85	95	3.36	do	140	117	do		
Do	do	do	1929	31478	QCLS	2.65		9	30	45	61	84	96	3.25	do	115	119	do		
Do	do	do	1929	31695	QCLS	2.65		10	35	52	68	89	96	3.50	do	129	131	do		
San Jacinto	Urbana	Comm	1926	28670	CQ			1	12	26	60	90	97	2.86	do	118	103	do		
Do	do	do	1927	29397	CQ			4	19	34	51	87	97	2.92	do	121	103	do		
Do	do	do	1927	29645	QC(L)			4	13	24	38	77	92	2.48	High	116	111	do		
Do	do	do	1927	29666	QC			5	17	29	44	81	95	2.71	Low	122	96	do		
Do	do	do	1927	29694	QC			2	11	23	37	78	95	2.46	do	117	97	do		
Do	do	do	1929	32011	QC			3	13	26	45	79	96	2.62	do	123	122	do		
Schleicher	Eldorado	Local	1921	19400	Limestone [2]			0	9	21	48	63	74	2.15	do	131	115	do		
Starr	Kelsey Arroya	do	1924	25495	QC			1	13	24	45	67	94	2.44	do	96	92	do		
Do	Ratcliffe Arroya	do	1924	25430	QCL			13	34	45	55	69	91	3.07	do	108	101	do		
Stonewall	Peacock	do	1928	30780	QCL			9	17	32	49	80	94	2.81	do	146	128	do		
Tarrant	Arlington	Comm	1927	28769	QCL			9	26	39	63	89	98	3.24	do	146	118	do		
Do	do	do	1929	31497	QCL	2.66		1	16	32	56	89	98	2.92	do	152	124	do		
Do	Birdville	Local	1929	31413	QCL	2.65		2	13	30	50	79	97	2.71	do	138	111	do		
Do	Fort Worth	Comm	1925	28021	QCL			5	22	37	59	81	95	2.99	do	148	142	do		
Do	do	do	1926	28316	QCL			8	34	52	75	88	97	3.54	do	147	134	do		
Do	do	do	1927	29633	QCL			2	13	30	53	85	97	2.80	do	149	150	do		
Do	do	do	1928	30691	QCL			2	11	25	44	73	94	2.49	do	143	141	do		
Do	do	do	1929	31315	QCL			2	20	44	66	87	97	3.16	do	143	140	do		
Do	do	do	1929	31494	QCL	2.65		2	18	42	66	87	98	3.13	do	156	134	do		
Do	do	do	1929	32055	QCL	2.66		3	21	41	61	84	96	3.06	do	154	154	do		
Do	do	do	1930	33245	QLSC	2.70		1	7	24	54	83	97	2.66	do	132	129	do		
Do	Hurst	do	1929	31415	LQC	2.67		1	11	31	57	83	97	2.80	do	152	127	do		
Do	Tarrant	do	1926	28227	QCL			4	19	37	67	88	97	3.12	do	141	132	do		
Do	do	do	1926	28317	QCL			9	29	49	78	93	98	3.56	do	157	132	do		
Do	do	do	1929	31554	QCL	2.68		2	16	33	59	91	99	3.00	do	143	117	do		
Taylor	Buffalo Gap	Local	1925	26859	QCL			3	31	54	75	86	93	3.42	do	81	85	do		
Do	do	do	1928	30791	QCL			6	13	21	30	61	95	2.26	do	100	109	do		
Do	do	do	1929	31529	QCL	2.65		15	27	37	45	66	92	2.82	do	127	109	do		
Do	Trent	do	1928	30156	QC			2	14	27	51	82	97	2.73		102	96	do		
Do	do	do	1928	30214	QL			1	4	10	23	66	92	1.96	Low	111	95	do		
Do	do	do	1928	30281	QCLS			7	22	36	47	68	87	2.67	do	107	100	do		
Do	do	do	1928	30657	QCL			6	23	42	60	81	93	3.05	do	115	114	do		
Terrell	Sanderson (Sanderson Creek).	Prosp	1924	25332	LQC			4	25	54	84	92	95	3.54	do	159	141	do		
Do	do	do	1925	26680	LQC			6	37	68	93	97	98	3.99	do	145	143	do		
Tom Green	San Angelo	Local	1920	17053	Q(L)			1	5	8	20	63	92	1.89	do	106	97	do		
Travis	Austin (Colorado River).	do	1925	26980	QCL			1	17	39	88	97	98	3.40	High	101	102	do		
Do	do	do	1932	34592	QFLC	2.64	0.9	1	11	26	54	86	97	2.75	Low	119	113	do		

Uvalde	Knippa	do	1921	18994	Basalt [2]			3	10	27	62	75	83	2.60		158	174	do		
Victoria	Victoria	Comm.	1921	18819	QCLF			0	0	1	19	84	99	2.03	Low	83	83	do		
Do	do	do	1924	25498	Q(C)			2	10	18	34	77	95	2.36	do	102	96	do		
Do	do	do	1929	31333	QCF	2.63		2	21	37	57	91	99	3.07	do	119	113	do		
Do	do	do	1929	31338	QC	2.64		5	19	32	55	93	100	3.04	do	122	106	do		
Do	do	do	1929	31339	QC	2.64		6	20	34	57	94	100	3.11	do	131	113	do		
Do	do	do	1929	31431	QCL	2.63		7	15	25	42	86	99	2.74	do	121	104	do		
Do	do	do	1929	31434	QCL	2.62		9	19	31	51	87	98	2.95	do	107	96	do		
Do	do	do	1929	31446	QCL	2.64		1	4	10	27	75	94	2.11	do	106	104	do		
Do	do	do	1929	31448	QCL	2.64		0	3	11	29	79	97	2.19	do	106	101	do		
Do	do	do	1929	31451	QCL	2.64		6	15	26	44	87	99	2.77	do	111	104	do		
Do	do	do	1929	31455	QCL	2.63		2	6	15	36	82	97	2.38	do	111	113	do		
Do	do	do	1930	32430	QCL	2.64	.2	6	20	32	50	83	97	2.88	do	143	129	do		
Do	do	do	1930	32431	QC	2.63	.3	11	24	38	54	82	95	3.04	do	153	143	do		
Do	do	do	1930	32434	QCL	2.62	.3	14	32	45	59	91	99	3.40	do	144	132	do		
Do	do	do	1930	33165	QCL	2.65	.3	5	11	20	35	80	99	2.50	do	102	113	do		
Do	do	do	1930	33178	QCL	2.64	.4	6	22	37	58	89	98	3.10	do	123	122	do		
Do	do	do	1931	34049	QCL	2.63	.2	6	22	36	54	87	97	3.02	do	116	108	do		
Do	do	do	1931	34051	QCL	2.62	.3	8	31	45	59	82	97	3.22	do	125	101	do		
Waller	Enos	Local	1927	29376	CQL			5	31	49	66	90	97	3.38	do	125	120	do		
Webb	Laredo	Comm.	1920	17551	QC			4	22	27	29	38	88	2.08	do	106	107	do		
Do	do	do	1927	29622	QC			3	22	30	32	46	79	2.12	do	104	95	do		
Do	do	do	1928	30110	QCL			8	25	32	34	46	82	2.27	do	93	97	do		
Do	do	do	1929	31324	QC			4	25	34	37	45	94	2.39	do	119	105	do		
Do	do	do	1929	31325	QC			15	35	45	49	64	96	3.04	do	120	109	do		
Do	do	do	1929	31352	QC	2.63		10	25	32	35	63	92	2.57	do	100	97	do		
Do	do	do	1929	32056	QCSL	2.61		11	25	32	44	53	94	2.59	do	116	114	do		
Wharton	Wharton (Colorado River).	Prosp.	1928	30204	QFCL			1	2	13	47	95	99	2.57	do	107	108	do		
Wheeler	Shamrock	Local	1921	20854	QL			0	0	2	26	78	93	1.99	do	85	85	do		
Do	do	do	1931	34567	QFCS	2.63	.8	5	22	36	55	88	97	3.03	do	110	104	do		
Wilson	Saspamco	do	1924	25496	Quartz			0	1	9	48	94	98	2.50	do	105	94	do		
Do	do	do	1929	31549	do	2.67		0	0	9	35	91	97	2.32	do	129	104	do		
Do	do	do	1929	32144	do	2.64		0	0	9	32	87	94	2.22	do	111	105	do		
Do	Saspamco (Calaveras Creek).	do	1924	25266	do			0	0	6	51	95	98	2.50	do	113	118	do		
Young	Newcastle (Brazos River).	do	1928	30713	QCL			5	16	25	34	80	94	2.54	do	102	103	do		

VERMONT

Bennington	Pownal	Prosp.	1924	26052	QScL			4	21	49	89	95	96	3.54	Low	149	162	Tens.		
Orlean	Newport	Local	1917	11192	Quartz			2	24	49	84	95	98	3.52		164	124	do		
Rutland	Brandon	do	1947	73286	QQzLSc	2.65	0.8	1	4	15	46	83	98	2.47	Low	118	97	Comp.	0.5	8–50

VIRGINIA

Accomack	Onacock (Onacock Creek).	Local	1923	22743	Quartz			0	0	11	89	99	99	2.98	Low	103	113	Tens.		
Albemarle	Charlottesville	do	1920	15945	Q(MFMa)			0	1	8	48	92	98	2.47	High	83	82	do		
Do	do	do	1920	17496	Q(MFMa)			0	3	20	71	93	97	2.84	do	87	86	do		
Do	Charlottesville (Rivanna River).	do	1922	21702	QFScGn			2	8	24	80	96	99	3.09	do	103	99	do		
Do	Ivy	do	1921	20453	QFGnScM			0	3	15	27	55	79	1.79	do	100	87	do		
Do	Ivy (Ivy Creek)	Prosp.	1918	13173	Q(C)			1	8	23	57	75	85	2.49		111	108	do		
Do	Mechum River	Local	1918	13206	Quartz			1	12	26	59	81	95	2.74		102	117	do		
Do	do	do	1918	13710	QSc			1	12	30	74	93	97	3.07		84	82	do		
Do	do	do	1918	13948	Q(FScMa)			2	18	41	83	96	99	3.39		106	104	do		
Do	do	do	1919	14494	Q(ScMMa)			1	7	21	59	80	94	2.62		82	82	do		
Do	do	do	1920	16156	Q(ScMMa)			0	3	14	50	72	89	2.28	High	115	106	do		
Do	Scottsville	do	1921	19600	Q(ScFMa)			0	4	18	77	97	100	2.96	Low	92	92	do		
Do	do	do	1921	19717	QFM			0	1	7	57	90	97	2.52	High	67	82	do		
	Alexandria	do	1925	26778	Q(MCF)			7	33	48	67	88	96	3.39	Low	140	129	do		
	do	do	1925	26795	Q(MC)			4	24	38	58	85	96	3.05	do	130	114	do		
	do	Comm.	1940	48967	QQzSGnCM		1.1	4	19	36	53	86	98	2.96	do	135	121	Comp.		
	do	do	1940	52257	QQzScCM	2.53	1.4	1	16	33	50	72	94	2.66	do	91	86	do		
	do	do	1940	52336	QQzScCM	2.58	1.0	2	12	20	37	84	98	2.53	do	108	100	do		
	do	do	1941	52865	QQzScCM		1.3	0	13	29	50	82	97	2.71	do	107	112	do		
	do	do	1941	54659	QQz(SC)		1.4	0	10	22	40	68	96	2.36	do	119	102	do		
	do	do	1941	55144	QQz(SC)		1.5	0	10	26	50	81	97	2.64	do	111	107	do		
	Alexandria (Potomac River).	do	1918	13055	QM			3	15	23	42	70	89	2.42		129	110	Tens.		
	do	do	1918	13060	Quartz			2	17	29	51	79	94	2.72		113	115	do		
	do	do	1918	13089	QM			1	11	19	37	69	92	2.29		114	118	do		

[2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			Test result 7-day	Test result 28-day	Method used	Test result	Size tested
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
	Alexandria (Potomac River).	Comm.	1918	13090	Q(MF)			1	12	22	39	68	93	2.35		110	110	Tens.		
	do	do	1918	13107	Q(MF)			1	11	22	44	75	94	2.47		109	110	do		
	do	do	1918	13109	Q(M)			1	9	19	37	70	94	2.30		90	103	do		
	do	do	1918	13515	Q(MMa)			3	17	27	49	79	95	2.70		106	115	do		
	do	do	1918	13516	Q(MMa)			4	20	31	49	77	94	2.75		121	115	do		
	do	do	1918	13517	Q(MMa)			2	11	19	40	74	95	2.41		105	121	do		
	do	do	1918	13550	Q(MMa)			2	18	27	41	65	94	2.47		100	108	do		
	do	do	1918	13551	Q(MMa)			2	18	27	44	73	95	2.59		100	106	do		
	do	do	1918	13587	Q(MMa)			3	23	34	50	76	94	2.80		108	119	do		
	do	do	1918	13588	Q(MMa)			3	20	35	51	77	95	2.81		103	102	do		
	do	do	1918	13627	Q(CMMa)			2	15	25	43	72	93	2.50		106	117	do		
	do	do	1918	13628	Q(MMa)			3	22	34	50	75	94	2.78		117	117	do		
	do	do	1918	13642	Q(CMMa)			4	17	28	44	71	93	2.57		112	112	do		
	do	do	1918	13643	Q(CMMa)			6	28	42	60	83	96	3.15		118	116	do		
	do	do	1918	13754	QMFMa			5	22	33	48	74	94	2.76		99	104	do		
	do	do	1918	13758	QMFMa			3	16	27	45	72	94	2.57		101	107	do		
	do	do	1918	13799	QMFMa			6	16	23	37	62	92	2.36		97	101	do		
	do	do	1918	13800	QMFMa			3	18	30	45	72	94	2.62		95	108	do		
	do	do	1921	19905	Q(M)			6	17	22	39	70	90	2.44	Low	101	111	do		
	do	do	1923	23707	QCSFM			2	14	30	50	69	88	2.53	do	113	108	do		
	do	do	1923	23708	QCS			3	26	42	63	76	89	2.99	do	138	144	do		
	do	do	1923	24429	Q(CFM)			2	12	23	47	79	95	2.58	do	128	104	do		
	do	do	1924	24821	Q(MF)			2	17	34	64	87	95	2.99	do	121	123	do		
	do	do	1925	27600	Q(MCSGn)			1	10	21	46	78	94	2.50	do	111	104	do		
	do	do	1928	30613	QCSM			3	16	28	41	77	96	2.61	do	105	101	do		
	do	do	1931	34190	QCGnM			4	13	28	47	89	96	2.77	do	108	103	do		
	do	do	1931	34191	QSCM			6	17	29	50	88	96	2.86	do	115	103	do		
	do	do	1940	49906	QQzC		1.1	5	26	42	60	83	95	3.11		106	103	Comp.		
	do	do	1940	49907	QQzC		1.3	7	33	50	68	87	95	3.40	Low	104	103	do		
	do	do	1940	51086	QQzSC		1.2	5	22	36	53	82	94	2.92	do	102	106	do		
Amherst	Madison Heights	Prosp.	1922	21811	QFM			0	2	13	63	87	96	2.61	High	87	82	Tens.		
Do	Pedlar Lake	do	1927	29221	Q(CF)			1	5	18	74	96	98	2.92	do	84	79	do		
Arlington	Arlington	Comm.	1943	63038	QQzC		1.7	2	12	23	45	85	94	2.61	Low	136	110	Comp.		
Do	do	do	1943	63131	QQzC		1.3	2	13	26	45	85	94	2.65	do	141	119	do		
Do	do	do	1943	63196	QQzC		1.4	2	11	23	43	85	94	2.58	do	120	100	do		
Do	do	do	1943	63258	QQzC		1.4	2	13	29	40	85	94	2.63	do	132	97	do		
Do	do	do	1944	63799	QQzC		.7	2	11	28	49	85	96	2.71	do	106	99	do		
Do	do	do	1944	64040	QQzC	2.59	1.0	5	15	31	55	92	98	2.96	do	90	88	do		
Do	do	do	1944	64041	QQzC	2.58	1.0	4	12	25	37	84	96	2.58	do	113	101	do		
Do	do	do	1944	64519	QQzC		1.0	2	12	27	49	89	98	2.77	do	112	98	do		
Do	do	do	1944	64881	QQzCS	2.59	1.0	1	10	25	51	86	97	2.70	do	92	91	do		
Do	do	do	1944	64956	QQzCS		1.1	2	10	22	44	84	97	2.59	do	101	98	do		
Do	do	do	1944	65110	QQzC	2.58	1.1	1	5	16	45	87	97	2.51	do	120	107	do		
Do	do	do	1944	66399	QQzC	2.56	1.4	1	5	15	33	69	95	2.18	do	82	71	do		
Do	do	do	1944	66402	QQzC	2.60	1.1	1	8	21	45	85	98	2.58	do	103	94	do		
Do	do	do	1944	66530	QQz		1.4	1	8	21	45	80	96	2.51	do	120	113	do		
Do	do	do	1944	66640	QQzC	2.57	1.2	1	9	22	46	81	96	2.55	do	104	92	do		
Do	do	do	1944	66736	QS		1.2	3	12	24	45	81	96	2.61	do	112	116	do		
Augusta	Greenville	Prosp.	1939	46841	Quartz		.9	0	0	0	5	44	80	1.29	do	137	126	do		
Do	Jennings Gap	do	1918	13841	do			19	23	25	32	58	90	2.47		85	83	Tens.		
Do	Staunton	Comm.	1922	21073	Dolomite [2]			6	37	66	88	91	93	3.81		159	161	do		
Do	Waynesboro	do	1935	42180	Chert		1.7	0	10	36	54	75	89	2.64	Low	124	120	Comp.	5.2	4–100
Do	do	do	1938	44836	SQ		.9	0	4	37	61	81	94	2.77		127	127	do		
Do	do	do	1940	49768	QGFM		.9	0	6	22	58	88	96	2.70	Low	123	109	do		
Botetourt	Blue Ridge	do	1935	42118	Limestone [2]		.3	0	0	21	56	84	96	2.57		121	120	do	3.8	8–100
Do	do	do	1935	42803	do.[2]		.3	0	2	38	65	84	94	2.83		170	134	do	4.1	8–100
Do	do	do	1935	43042	do.[2]		.9	0	2	34	64	82	92	2.74		128	121	do		
Do	do	do	1938	44816	do.[2]		.8	0	1	26	60	81	93	2.61		125	113	do		
Do	do	do	1938	44817	do.[2]		.8	0	1	26	59	80	92	2.58		100	126	do		
Do	do	do	1939	46617	do.[2]		.5	0	2	26	53	77	91	2.49		122	127	do		
Do	do	do	1941	53051	do.[2]	2.67	.9	0	0	18	55	76	90	2.39		161	127	do		
Do	do	do	1941	53389	do.[2]		1.0	0	0	19	53	77	90	2.39		152	121	do		
Do	do	do	1941	53705	do.[2]		1.0	0	0	5	62	84	94	2.45		109	95	do		
Do	do	do	1941	53711	do.[2]	2.63	1.2	0	0	22	61	83	93	2.59		114	101	do		

Do	do	do	1941	54234	do.[2]	2.68	1.3	0	1	23	60	81	93	2.58		117	116	do		
Do	do	do	1946	71737	do.[2]	2.71	1.1	0	2	31	65	84	95	2.77		151	147	do	3.3	8–50
Do	do	do	1946	71738	do.[2]		1.2	0	3	32	67	84	95	2.81		173	146	do	4.2	4–50
Do	do	do	1948	74755	do.[2]		1.4	0	2	31	67	86	96	2.82		111	105	do	2.0	8–50
Do	Buchanan	Prosp	1918	13583	Q(LCS)			1	11	21	47	79	91	2.50		70	88	Tens		
Do	do	Comm	1939	46850	Dolomite[2]		.6	0	19	68	90	97	99	3.73		92	109	Comp		
Do	do	do	1939	46918	do.[2]		.8	1	19	47	66	77	84	2.94		150	118	do		
Do	do	do	1939	46973	do.[2]		1.4	0	2	34	58	70	78	2.42		183	139	do		
Do	do	do	1939	46974	do.[2]		.4	0	2	29	54	66	75	2.26		197	141	do		
Do	do	do	1939	48530	Quartzite[2]		.4	0	2	34	58	69	77	2.40		164	122	do		
Do	do	do	1939	48531	do.[2]		.6	0	14	37	54	67	76	2.48		154	120	do		
Do	do	do	1939	48532	Dolomite[2]		.6	2	36	62	76	83	90	3.49		148	124	do		
Do	do	do	1940	48975	do.[2]		.7	0	21	39	59	79	91	2.89		107	125	do		
Do	do	do	1940	48984	do.[2]		.8	0	0	2	20	70	91	1.83		120	100	do		
Do	do	do	1940	49315	do.[2]		.7	0	0	51	74	85	91	3.01		152	120	do		
Do	do	do	1940	49316	do.[2]		.7	0	17	65	81	91	93	3.47		129	116	do		
Do	do	do	1940	49528	do.[2]		.7	0	9	27	58	79	91	2.64		146	122	do		
Do	do	do	1940	49530	do.[2]		.7	0	0	20	59	83	93	2.55		154	126	do		
Do	do	do	1940	51129	do.[2]		.8	0	2	46	75	89	95	3.07		148	128	do		
Do	do	do	1941	52755	do.[2]		1.7	0	0	28	61	79	87	2.55		146	120	do		
Do	do	do	1941	52756	do.[2]		1.4	0	5	38	64	81	88	2.76		147	127	do		
Do	do	do	1941	52908	do.[2]		1.7	0	2	7	57	78	87	2.31		152	120	do		
Do	do	do	1941	52957	do.[2]		1.7	0	1	19	51	73	84	2.28		147	111	do		
Do	do	do	1941	52978	do.[2]	2.72	1.1	0	2	40	75	89	95	3.01		136	111	do		
Do	do	do	1941	52979	do.[2]	2.78	.9	0	10	58	81	91	95	3.35		151	124	do		
Do	do	do	1941	52980	do.[2]	2.79	.8	0	13	65	86	94	97	3.55		138	116	do		
Do	do	do	1941	52981	do.[2]	2.78	1.0	0	2	35	71	88	94	2.90		147	116	do		
Do	do	do	1941	52982	do.[2]	2.75	1.4	0	3	25	58	77	86	2.49		158	122	do		
Do	do	do	1941	52983	do.[2]	2.78	.8	0	1	21	56	77	88	2.43		164	126	do		
Do	do	do	1941	52984	do.[2]	2.75	1.3	0	2	23	57	77	87	2.46		164	122	do		
Do	do	do	1941	53027	do.[2]		1.1	0	0	19	61	84	93	2.57		147	124	do		
Do	do	do	1941	53414	do.[2]		1.2	0	0	7	43	71	89	2.10		168	127	do		
Do	do	do	1941	53708	do.[2]	2.74	1.4	0	0	17	58	78	89	2.42		134	104	do		
Do	do	do	1941	53709	do.[2]	2.75	1.3	1	21	52	73	84	90	3.21		128	108	do		
Do	do	do	1941	53710	do.[2]	2.74	1.4	0	0	22	61	78	89	2.50		132	107	do		
Do	do	do	1941	54073	do.[2]		1.2	0	12	43	73	86	94	3.08		151	129	do		
Do	do	do	1941	54371	do.[2]	2.66	1.4	0	1	19	57	78	92	2.47		117	112	do		
Do	do	do	1949	78638	do.[2]		1.1	0	7	26	57	77	88	2.55		159		do	.7	4–50
Brunswick	Lawrenceville	Prosp	1921	19799	QF			4	29	53	85	96	98	3.65	High	88	80	Tens		
Buckingham.	Dutch Gap	Comm	1938	44879	QFS		.6	1	10	28	57	87	98	2.81		124	120	Comp		
Do	do	do	1940	49262	QF		1.2	0	4	21	63	87	96	2.71	Low	95	92	do		
Campbell	Lynchburg (James River).	Prosp	1922	21900	QFM			1	2	6	39	88	99	2.35	do	62	66	Tens		
Do	do		1923	23712	QFM			0	0	9	67	96	99	2.71	High	71	77	do		
Carroll	Shorts Creek	Local	1922	21342	SQ			7	15	26	56	75	86	2.65	do	62	82	do		
Do	do	do	1922	21343	Quartz			5	11	21	48	69	82	2.36	do	29	40	do		
Chesterfield	Drewry Bluff (Falling Creek).	Prosp	1918	12985	Q(MF)			0	6	34	97	99	100	3.36		76	77	do		
Dinwiddie	Petersburg	Comm	1918	13582	Q(Gn)			4	26	49	77	89	98	3.43		106	117	do		
Do	do	do	1919	14002	Q(F)			0	8	29	73	95	100	3.05		102	118	do		
Do	do	do	1921	20003				2	9	31	84	94	98	3.17	Low	127	102	do		
Do	do	do	1921	20080	Q(F)			2	8	17	57	86	95	2.65	High	115	104	do		
Do	do	Local	1921	20452	Q(CFM)			3	17	38	79	92	97	3.26	Low	128	112	do		
Do	do	Comm	1922	21229	QF			10	18	32	72	84	89	3.05	do	133	120	do		
Do	do	do	1922	21895	QF			1	7	18	57	82	94	2.59	do	111	108	do		
Do	do	do	1922	22632	Q(FM)			2	16	31	65	86	95	2.95	do	104	99	do		
Do	do	do	1923	23049	Q(FM)			3	17	32	63	83	94	2.92	do	113	103	do		
Do	do	do	1923	23179	Q(FM)			4	21	38	67	81	90	3.01	do	110	110	do		
Do	do	do	1923	23694	Q(FM)			4	21	37	66	86	94	3.08	do	125	123	do		
Do	do	do	1929	32243	Q(F)			0	5	20	54	83	98	2.60	do	106	111	do		
Do	do	do	1934	40576			.9	0	3	15	46	82	97	2.43		104	105	Comp		
Do	do	do	1935	42372	Q(SC)		.8	3	13	31	55	83	97	2.82	Low	118	116	do		
Do	do	do	1935	42412	Q(SC)		.8	2	10	27	56	84	97	2.76	do	106	107	do		
Do	do	do	1935	42462	Q(SC)		.7	0	6	26	56	85	97	2.70	do	123	108	do		
Do	do	do	1935	42479	Q(FSC)		.9	1	10	29	56	85	97	2.78	do	119	101	do		
Do	do	do	1935	42610	QC		.5	1	11	34	65	88	95	2.94		111	109	do		
Do	do	do	1936	43034	QC		.6	1	10	30	66	89	95	2.91	Low	132	116	do		
Do	do	do	1936	43044	QFM	2.72	.4	0	0	4	36	78	93	2.11	High	90	75	do		
Do	do	do	1938	44997	Q(FS)		.4	0	8	30	69	93	98	2.98		127	123	do		
Do	do	do	1938	46254	QFSG		.4	0	9	30	60	85	96	2.80	Low	108	98	do		
Do	do	do	1938	46255	QFM		.4	0	10	29	53	90	98	2.80	do	106	102	do		
Do	do	do	1939	46645	QQzS		.4	0	10	28	63	91	98	2.90	do	102	103	do		
Do	do	do	1939	46711	QSFM		.8	0	0	9	34	67	92	2.02	do	135	129	do		
Do	do	do	1939	46761	QF		.6	0	9	27	58	86	96	2.76	do	109	93	do		
Do	do	do	1940	49828	QGFM		.7	0	0	7	41	73	95	2.16	do	116	102	do		
Do	do	do	1940	49905	QFM		.7	0	0	5	34	71	94	2.04	do	112	105	do		
Do	do	do	1941	53127	QFC		.7	0	0	1	29	73	94	1.97	do	116	115	do		
Do	do	do	1941	53148	QQzFM		.9	0	7	26	62	89	97	2.81	do	114	111	do		
Do	do	do	1941	54107	QQzFM		.9	0	4	21	58	88	96	2.67	do	111	112	do		

[2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.			Pct.	Pct.		Pct.	Sieve No.
Dinwiddie	Petersburg	Comm	1941	54499	QQzF		1.0	0	7	33	72	87	96	2.95	Low	108	104	Comp		
Do	do	do	1941	55384	QQzF		1.0	1	19	48	77	93	98	3.36	do	95	100	do		
Do	do	do	1941	55467	QFM		1.0	0	5	17	54	87	97	2.60	do	106	110	do		
Do	do	do	1948	74739	QzG	2.56	1.3	1	7	28	60	89	97	2.82	do	95	94	do	3.1	4–50
Do	do	do	1948	75928		2.57	1.1	0	7	21	55	86	96	2.65		108	108	do	1.6	4–50
Do	do	do	1948	76091	QFG	2.60	.9	1	10	33	71	91	97	3.03					1.2	4–50
Do	do	do	1950	81733	QFMG		.8	0	10	30	61	86	96	2.83	Low	111		Comp	2.4	4–50
Do	Petersburg (Appomattox River)	do	1916	9956	QCFM			0	7	26	72	92	98	2.95		120	109	Tens		
Elizabeth City	Fort Monroe	Prosp	1924	24687	Quartz			4	10	20	53	88	100	2.75	Low	95	91	do		
Do	do	do	1925	26847	do			0	0	2	11	78	100	1.91	do	102	78	do		
Essex	Ware's Wharf (Rappahannock River).	do	1918	13604	Q(MMa)			5	36	66	88	96	99	3.90		109	101	do		
Fairfax	Alexandria	Local	1943	61555	QQzC		1.1	0	0	6	30	76	94	2.06	Low	150	121	Comp		
Do	Annandale	do	1924	24669	QC			2	20	34	60	77	86	2.79	do	123	129	Tens		
Do	do	Comm	1940	49764	QQzSC		.7	0	4	26	61	88	97	2.76	do	108	106	Comp		
Do	do	do	1943	62430	QQzC	2.58	1.1	2	11	23	44	81	94	2.55	do	127	125	do		
Do	do	do	1943	62524	QSC	2.58	1.0	2	11	24	46	83	95	2.61	do	124	115	do		
Do	do	do	1943	62589	QQz	2.59	1.2	3	16	31	54	87	95	2.86	do	131	111	do		
Do	do	do	1943	62768			1.6	2	12	24	43	85	95	2.61	do	137	118	do		
Do	do	do	1943	62943	QQzC		1.4	3	14	27	46	86	95	2.71	do	139	122	do		
Do	do	do	1944	64943	QQzC		1.1	1	11	23	50	89	97	2.71	do	102	98	do		
Do	do	do	1944	65953	QQzC	2.58	1.1	1	9	22	49	86	97	2.64	do	95	96	do	3.6	4–5
Do	do	do	1945	67707	QQzC	2.60	.8	0	10	27	57	88	98	2.80	do	109	108	do		
Do	do	do	1945	67758	QQzC	2.60	.8	0	1	6	16	50	92	1.65	do	125	114	do		
Do	do	do	1946	72252	QQzM	2.60	.9	1	16	34	64	87	96	2.98	do	116	117	do		
Do	do	do	1949	77272	QSC	2.60	.8	1	15	29	54	84	96	2.79	do	128		do	2.0	4–50
Do	Coral	Local	1924	26028	QSc			3	36	62	83	90	93	3.67	High	79	86	Tens		
Do	Fairfax	do	1923	23702	Q(C)			2	15	31	69	91	95	3.03	Low	133	114	do		
Do	Fort Belvoir	do	1946	72088	Granite [2]	2.64	.4	25	42	55	66	74	82	3.44		146	143	Comp	8.8	⅜″–50
Do	do	do	1949	77423	QCS		1.3	3	20	34	53	88	97	2.95		133		do	4.3	4–50
Do	do	do	1949	77424	QCS		1.3	2	19	31	51	88	92	2.83		123		do	3.8	4–50
Do	Lincolnia	Comm	1950	80797	QQzCS		1.0	1	13	28	52	83	96	2.73		132		do	1.8	4–50
Franklin	Rockymount	Prosp	1919	13905	Q(MF)			7	18	33	53	75	94	2.80		74	76	Tens		
Do	Sydnorsville	do	1919	14020	QM			3	17	29	52	81	96	2.78		78	80	do		
Do	do	do	1919	14303	QM			3	17	29	52	80	93	2.74		85	86	do		
Frederick	Hayfield	do	1916	10174	Quartz			0	2	3	10	35	79	1.29		54		do		
Giles	Bluff City	do	1917	11247	QCQz			0	5	12	47	77	96	2.37		102	95	do		
Do	do	do	1917	11249	Quartz			0	2	18	87	100	100	3.07		87	79	do		
Do	do	Local	1924	24442	QC			0	5	27	88	97	99	3.16	Low	119	104	do		
Do	Pembroke	Comm	1936	42865	Dolomite [2]		.5	0	10	55	80	94	98	3.37		99	110	Comp	2.1	4–100
Hanover	Beaverdam (North Anna River).	Prosp	1918	13810	Quartz			2	4	10	44	78	92	2.30		71	87	Tens		
Do	do	do	1919	13895	Q(M)			0	3	10	34	61	84	1.92		76	78	do		
Do	do	do	1919	14295	Q(M)			0	0	2	11	57	89	1.59	High	50	72	do		
Do	Old Church (Pamunkey River).	Local	1924	24641	Q(MF)			4	15	31	73	93	98	3.14	Low	104	92	do		
Do	Teman (North Anna River).	do	1919	14827	Q(FM)			2	7	19	57	82	95	2.62		112	113	do		
Henrico	Richmond	Comm	1922	21222	Granite [3]			7	31	45	61	72	82	2.98		118	137	do		
Do	do	do	1931	34128	Q(CF)			2	18	47	69	88	98	3.22	Low	128	134	do		
Do	do	do	1933	34832	QCF	2.59	.8	1	13	31	52	84	97	2.78	do	140	148	do		
Do	do	do	1934	40267	QCF		.5	1	8	20	50	82	93	2.54	do	129	128	Comp		
Do	do	do	1934	40598	QCF		.7	0	8	27	61	85	97	2.78	do	126	139	do		
Do	do	do	1934	40659	QFGnM		.8	1	9	22	52	82	97	2.63	do	129	132	do		
Do	do	do	1934	40746	QCF		.7	1	8	19	53	83	96	2.60	do	132	146	do		
Do	do	do	1935	40893	QC		.9	2	9	26	53	84	97	2.71	do	103	103	do		
Do	do	do	1935	42126	QSCSh		.7	2	7	25	53	84	94	2.65	do	72	91	do		
Do	do	do	1935	42139	QSCSh		.7	2	10	30	60	87	95	2.84	do	114	105	do		
Do	do	do	1935	42150	QF		.7	1	5	20	50	84	94	2.54	do	105	122	do		
Do	do	do	1935	42151	QSF		.8	1	6	21	50	81	93	2.52	do	113	121	do		

Do	do	do	1936	42674	QCFM		.7	0	7	26	52	86	97	2.68	do	122	118	do		
Do	do	do	1941	52918	QQzF	2.53	1.0	0	5	19	50	78	95	2.47	do					
Do	do	do	1943	61985	QGM			0	9	29	63	90	98	2.89	do	109	103	do		
Do	do	do	1933	61991	QGM		.8	0	10	33	67	91	98	2.99	do	108	108	do		
Do	do	do	1949	77864	QSG	2.59	1.1	0	1	14	55	85	96	2.51	do	120		do		
Do	do	do	1950	80186		2.60	.9	0	6	23	57	87	97	2.70	do	118	123	do	1.3	4–50
Do	do	do	1950	80633	QFQzSc	2.60	1.1	1	9	32	66	88	95	2.91	do	141		do	2.7	4–50
Henry	Koehler	Local	1922	21206	QFM			1	6	16	46	77	96	2.42	High	55	72	Tens		
Highland	Monterey	do	1949	77232			1.5	0	0	1	2	4	54	.61	Low	132	117	Comp		
James City	Jamestown	do	1932	34702	Quartz			0	0	1	6	71	99	1.77	do	83	84	Tens		
Do	do	do	1932	34703	do			0	1	3	14	68	97	1.83	do	98	101	do		
Do	do	do	1932	34771	Q(F)			8	11	21	45	94	100	2.79	do	109	111	do		
Do	Williamsburg	do	1932	34696	Quartz			0	1	3	21	96	100	2.21	do	92	88	do		
Do	do	do	1932	34697	do			0	0	3	22	96	100	2.21	do	87	86	do		
Do	do	do	1936	42804	QFC		.5	0	2	9	25	80	99	2.15	do	121	114	Comp		
Lee	Jonesville	do	1922	21205	Quartz			1	5	6	27	71	84	1.94	High	133	86	Tens		
Do	do	do	1922	21387	do			0	0	1	27	74	82	1.84	Low	112	119	do		
Louisa	Trevilians	do	1923	23651	do			1	15	32	67	87	95	2.97	do	117	120	do		
Mecklenburg	Clarksville (Hester's Creek)	Prosp	1923	23594	QF			1	16	37	80	95	99	3.28		88	98	do		
Montgomery	Radford	Comm	1938	46459	Dolomite [2]		.5	0	2	30	59	81	92	2.64		126	126	Comp		
Do	do	do	1939	46480	do.[2]		.5	0	0	24	56	78	92	2.50		147	142	do		
Do	do	do	1950	80947	do.[2]	2.77	.6	0	3	45	70	83	91	2.92		130		do	.9	8–50
Do	do	do	1950	81180	do.[2]	2.75	.8	0	3	43	67	80	90	2.83		180		do	.8	8–50
Nelson	Schuyler (Rockfish River)	Local	1922	22713	QScGn			3	8	20	67	84	90	2.72	High	70	82	Tens		
Do	Tye River	do	1924	24819	QFGnG			3	12	37	89	98	99	3.38	Low	100	99	do		
Norfolk	Norfolk	Comm	1922	22631	Q(FM)			1	13	21	72	90	96	2.93	do	100	103	do		
Do	do	do	1923	23592	Q(FM)			2	8	23	68	86	93	2.80	do	122	123	do		
Northampton	Cheriton	Local	1923	24478	Quartz			0	0	15	69	96	100	2.80	do	106	98	do		
Do	do	do	1924	24653	do			0	0	3	26	81	97	2.07	High	81	85	do		
Do	do	do	1924	24654	do			0	0	3	29	81	97	2.10	Low	97	98	do		
Do	do	do	1924	24655	Q(F)			0	0	13	63	91	96	2.63	do	115	106	do		
Do	do	do	1924	24656	Q(F)			0	2	10	47	91	99	2.49	High	90	96	do		
Do	do	do	1924	24657	Q(F)			0	2	13	59	92	99	2.65	do	117	110	do		
Page	Ingham	Prosp	1940	51165	QQzSc		1.5	0	0	1	8	62	96	1.67	Low	108	110	Comp		
Do	do	Local	1940	51968	QQzS		1.4	0	0	0	7	65	97	1.69	do	84	82	do		
Do	Luray	do	1933	34995	QCSh			0	0	10	75	97	99	2.81	do	86	90	Tens		
Do	Shenandoah	Prosp	1937	44265	QShS		1.2	0	0	0	17	87	100	2.04	do	106	101	Comp		
Do	do	Local	1939	46892	QC		.8	0	0	0	2	72	97	1.71	do	113	103	do		
Do	do	do	1940	49352	QFCM		1.0	0	0	0	5	55	93	1.53	do	121	105	do		
Do	do	do	1940	50685	QQzS		.9	0	0	0	3	48	91	1.42	do	121	107	do		
Do	do	Prosp	1940	50917	QC(ShS)		1.2	0	0	1	6	55	95	1.57	do	106	97	do		
Do	Shenandoah (Shenandoah River)	Local	1937	44265	QShS			0	0	0	17	87	100	2.04	do	106	101	do		
Do	do	do	1940	50918	QQzCS		1.2	9	18	25	36	80	96	2.64	do	91	99	do		
Do	Stanley (Shenandoah River)	do	1932	34641	Quartz			0	2	4	19	62	83	1.70	High	60	106	Tens		
Do	do	do	1932	34643	do			0	0	1	8	81	98	1.88	Low	97	88	do		
Do	do	do	1934	40060	QSCSh			0	0	2	13	85	98	1.98	do	74	80	do		
Patrick	Meadows of Dan	do	1938	44966	Quartz [2]		1.2	2	20	38	53	68	82	2.63		132	127	Comp		
Do	do	do	1938	46009	do.[2]		.2	2	24	45	61	75	85	2.92		148	163	do		
Pittsylvania	Danville	do	1919	14163	QS			1	9	23	66	86	94	2.79		100	102	Tens		
Do	do	do	1921	20443	QFM			1	9	21	62	90	99	2.82	High	94	89	do		
Prince George	Hopewell	do	1917	11385	Quartz			1	16	45	80	86	88	3.16		136	133	do		
Do	do	do	1917	11386	do			1	13	43	86	92	95	3.30		169	164	do		
Do	do	do	1917	11387	do			3	29	40	60	88	95	3.15		154	128	do		
Do	do	Comm	1937	44536	QF		.3	1	10	30	60	83	96	2.80	Low	134	138	Comp		
Do	do	do	1946	72121	QQzF	2.58	1.3	1	9	23	50	75	95	2.53	do	103	107	do	3.8	4–50
Do	do	do	1946	72122	QQzFM	2.60	1.1	1	8	21	48	75	95	2.48	do	100	106	do	3.5	4–50
Do	do	do	1947	74762	QzScG	2.58	1.3	1	8	21	52	86	98	2.66	do	105	110	do	2.8	4–50
Do	do	do	1949	79547	QQz		.9	0	5	17	52	83	96	2.53	do	118		do	2.3	4–50
Princess Anne	Cape Henry	Local	1919	14335	Q(C)			0	0	2	14	76	98	1.90		82		Tens		
Do	Norfolk	do	1919	14907	Quartz			0	0	0	4	33	91	1.28		77	80	do		
Prince William	Featherstone	do	1926	28282	QF(M)			1	14	35	73	91	97	3.11	Low	100	105	do		
Do	Occoquan	do	1918	13221	QM			2	13	29	62	83	96	2.85		123		do		
Do	do	do	1918	13222	QM			2	11	22	43	77	96	2.51		118	111	do		
Do	do	do	1918	13224	QM			2	16	30	55	78	95	2.76		107	108	do		
Do	do	do	1918	13282	QM			2	19	30	42	63	92	2.48		123	125	do		
Do	do	do	1918	13420	QM			2	19	30	47	62	95	2.55		122	110	do		
Do	Occoquan (Quantico Creek)	do	1931	33295	Quartz	2.62		0	4	16	50	87	96	2.53	High	83	75	do		

[2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Prince William.	Quantico	Prosp	1917	12408	Quartz			1	11	29	69	88	95	2.93		140	126	Tens.		
Do	do	do	1917	12436	do			1	11	24	52	83	96	2.67		116	108	do		
Do	do	Comm.	1925	27579	QMF			2	16	36	67	80	89	2.90	Low	129	109	do		
Do	do	do	1925	28033	QCF			2	16	35	63	79	90	2.85	do	116	110	do		
Do	Quantico (Potomac River).	Local	1922	22610	Q(F)			2	5	12	53	92	98	2.62	do	80	80	do		
Pulaski	Delton	do	1922	21157	Q(MF)			0	1	5	38	83	96	2.23	High	80	78	do		
Do	do	do	1922	21184	Q(MF)			2	10	25	60	83	93	2.73	Low	97	105	do		
Rockbridge	Glasgow	Comm.	1921	20369	Limestone [2]			6	26	45	66	74	80	2.97		136	127	do		
Do	do	do	1921	20949	do.[2]			2	11	28	59	70	76	2.46		98	103	do		
Do	do	do	1939	46882	do.[2]		3.1	0	4	44	67	77	83	2.75		113	97	Comp.		
Do	do	do	1939	46883	Quartzite [2]		.3	1	19	40	58	70	79	2.67		140	124	do		
Do	Goshen	do	1939	46595			1.0	2	12	25	82	93	98	3.12	Low	81	87	do		
Rockingham.	Elkton	do	1937	44224	QSSh		1.0	0	0	1	6	70	97	1.74	do	115	111	do		
Do	do	Prosp	1940	51164	QQzSc		1.4	0	0	0	12	72	97	1.81	do	111	104	do		
Do	Elkton (Shenandoah River).	Local	1949	77531	Quartz		1.7	0	0	0	0	11	70	.81	High	118		do		
Do	Port Republic	Comm.	1938	44827	QSShC		1.0	0	7	29	55	84	96	2.71	Low	122	118	do		
Do	do	do	1938	44853	Quartz		1.0	0	0	0	0	5	48	.53	do	160	135	do		
Do	do	do	1938	44854	QSQz		1.0	0	6	25	50	80	94	2.55	do	123	117	do		
Do	do	do	1938	46228	QSSh		.7	0	5	26	51	80	94	2.56	do	114	123	do		
Southampton.	Courtland (Nottaway River).	Local	1919	14905	Q(FSh)			0	1	8	32	78	98	2.17		81	72	Tens.		
Do	do	do	1919	14906	Quartz			0	6	21	60	79	94	2.60		105	97	do		
Do	do	do	1919	15010	Q(F)			0	0	2	13	30	74	1.19		76	84	do		
Do	do	do	1919	15282	Q(F)			0	1	8	36	78	98	2.21		89	89	do		
Spotsylvania.	Fredericksburg	do	1924	24744	Q(F)			1	16	35	71	88	93	3.04	Low	117	114	do		
Do	do	do	1937	44326	QShM		.7	0	0	0	21	93	99	2.13	do	97	97	Comp.		
Do	Massaponax	Comm.	1919	14000	Q(FM)			1	11	33	79	96	98	3.18		126	106	Tens.		
Do	do	do	1919	14003	Q(FM)			1	6	13	35	64	89	2.08		99	104	do		
Do	do	do	1919	16893	Q(FM)			1	10	25	61	91	98	2.86	Low	118	113	do		
Do	do	do	1921	19731	Q(FM)			0	5	12	45	74	88	2.24	High	93	106	do		
Do	do	do	1921	19901	Quartz			1	10	22	58	83	92	2.66	do	98	89	do		
Do	do	do	1921	19904	Q(F)			1	11	26	67	87	94	2.86	Low	97	87	do		
Do	do	do	1921	20935	Q(F)			2	12	31	71	89	95	3.00	do	107	103	do		
Do	do	do	1922	21011	Q(FM)			1	10	23	59	82	95	2.70	do	112	96	do		
Do	do	do	1922	22633	QF			1	13	28	63	84	93	2.82	do	98	103	do		
Do	do	do	1923	23780	QF			1	10	25	61	82	93	2.72	do	112	107	do		
Do	do	do	1925	26737	QSc			4	24	42	67	80	87	3.04	do	130	116	do		
Do	do	do	1925	26764	QSc			4	22	41	67	81	89	3.04	do	121	106	do		
Do	do	do	1925	26769	Q(FM)			2	12	27	57	76	89	2.63	do	127	112	do		
Do	do	do	1925	27517	Q(M)			1	10	28	64	81	90	2.74	do	109	97	do		
Do	do	do	1926	28165	Quartz			1	12	33	76	93	98	3.13	do	112	103	do		
Do	do	do	1926	28278	Q(FMC)			1	15	37	77	93	98	3.21	do	117	107	do		
Do	do	do	1926	28303	Q(CF)			1	16	36	70	90	97	3.10	do	118	110	do		
Do	do	do	1926	28445	Q(CF)			3	21	41	78	93	98	3.34	do	102	100	do		
Do	do	do	1926	28551	Q(FM)			3	16	35	71	90	97	3.12	do	107	107	do		
Do	do	do	1926	28680	Quartz			3	16	35	72	90	98	3.14	do	104	112	do		
Do	do	do	1927	29306	Q(F)			2	14	32	67	89	97	3.01	do	102	114	do		
Do	do	do	1929	31332	Q(FGn)			1	9	28	58	88	97	2.81	do	112	103	do		
Do	do	do	1930	33108	Q(CFGnM)	2.66		1	14	46	76	94	99	3.30	do	148	130	do		
Do	do	do	1933	34908	QGn	2.60	.9	1	9	26	72	91	96	2.95	do	132	128	do		
Do	do	do	1934	40343	QFSSc		1.1	1	10	34	59	92	99	2.95	do	122	122	Comp.		
Do	do	do	1934	40559	QFSM		.8	0	2	18	46	80	94	2.40		127	126	do		
Do	do	do	1934	40597	QGScM		1.0	0	16	52	78	95	96	3.39	Low	130	125	do		
Do	do	do	1934	40651	QFGnM		.6	0	11	35	61	87	95	2.89	do	167	161	do		
Do	do	do	1934	40656	QGnSM		.6	0	10	33	61	88	96	2.88	do	160	146	do		
Do	do	do	1935	42040	QFG		1.1	0	7	34	61	89	94	2.85	do	119	126	do		
Do	do	do	1935	42084	QScM		.9	0	0	4	26	79	95	2.04		104	102	do		
Do	do	do	1935	42085	QScM		.4	0	0	9	37	80	95	2.21		110	119	do		
Do	do	do	1935	42087	Quartz		.6	2	11	30	52	79	92	2.66		124	128	do		
Do	do	do	1935	42338	QScGS		.7	0	20	53	75	94	98	3.40	Low	110	120	do		

Do	do	do	1935	42340	QScGS		.9	0	6	28	52	86	96	2.68	do	123	116	do		
Do	do	do	1935	42341	QGS		.3	0	10	33	55	80	91	2.69	do	128	127	do		
Do	do	do	1935	42375	QFS		.3	0	12	35	57	81	91	2.76	do	122	123	do		
Do	do	do	1936	43054	QGF		2.7	2	13	33	61	86	94	2.89	do	100	101	do		
Do	do	do	1936	43055	QScShM		1.6	1	10	31	62	87	95	2.86		136	126	do		
Do	do	do	1936	43084	QFGSh		2.7	2	15	36	60	88	96	2.97	Low	113	118	do	7.8	8–100
Do	do	do	1937	44327	QSScM		.3	0	6	25	64	94	98	2.87	do	112	118	do		
Do	do	do	1937	44351	QShS		.9	0	1	14	44	80	95	2.34	do	125	114	do		
Do	do	do	1937	44358	QFMSc		1.1	0	4	21	53	85	95	2.58	do	123	122	do		
Do	do	do	1937	44359	QFMSc		.9	0	9	30	59	86	95	2.79	do	128	123	do		
Do	do	do	1937	44473	QFScShG		.9	0	9	29	59	88	96	2.81	do	130	130	do		
Do	do	do	1937	44481	QSFSc		.9	0	7	23	50	82	94	2.56	do	123	116	do		
Do	do	do	1937	44538	Quartz		.9	0	0	1	19	68	88	1.76	do	129	136	do		
Do	do	do	1937	44610	QMFSc		.9	0	0	3	32	75	92	2.02	do	135	132	do		
Do	do	do	1937	44683	QFM		.9	0	0	5	31	71	88	1.95		115	126	do		
Do	do	do	1938	44942	QFM		.9	0	3	16	43	82	96	2.40		111	109	do		
Do	do	do	1939	46893	QQzSC		1.0	0	4	20	50	81	94	2.49	Low	125	114	do		
Do	do	do	1939	46916	Quartz		.7	0	6	29	64	90	97	2.86	do	113	117	do		
Do	do	do	1940	49829	QFGM		1.0	0	7	27	62	90	98	2.84	do	121	106	do		
Do	do	do	1940	49980	QFG		1.1	0	5	23	57	86	97	2.68	do	105	102	do		
Do	do	do	1940	50767	QQz		.8	0	7	26	60	87	96	2.76	do	124	118	do		
Do	do	do	1940	51562	QQzGM		.7	0	8	29	69	88	97	2.91	do	111	103	do		
Do	do	do	1942	56233	QQzMSc	2.57	1.4	0	5	26	57	87	96	2.71	do	93	96	do		
Stafford	Stafford	Local	1936	43033	QShScSM		1.2	0	17	36	65	92	97	3.07	do	111	115	do		
Surry	Claremont (Chipoaks Creek).	do	1919	14445	Quartz			2	13	27	57	83	92	2.74		127	111	Tens		
Do	do	do	1919	14446	do			12	26	42	69	90	96	3.35		91	99	do		
Do	do	do	1921	20004	do			3	15	31	72	93	98	3.12	Low	106	85	do		
Do	do	do	1921	20005	do			3	19	35	66	89	98	3.10	do	118	78	do		
Tazewell	Pounding Mill	Comm	1921	18881	Limestone [2]			11	33	52	72	80	85	3.33		197	138	do		
Warren	Front Royal	Local	1934	40191	QSShFG		2.5	3	8	25	63	87	98	2.84	Low	129	95	Comp		
Do	do	do	1934	40192	QSCSh		2.4	4	9	27	66	92	99	2.97	do	123	96	do		
Do	do	do	1934	40312	QSSh		1.3	0	4	22	63	91	98	2.78	do	128	128	do		
Do	do	do	1934	40452	QSSh		1.8	1	8	33	72	93	99	3.06	do	101	117	do		
Do	Riverton	Comm	1929	32289	Limestone [2]			4	28	51	71	81	86	3.21		202	196	Tens		
Do	do	Prosp	1937	44639	QCShM		1.2	0	0	2	5	62	98	1.67	Low	103	101	Comp		
Wise	Big Stone Gap	Local	1921	20126	Quartz			1	3	5	30	82	95	2.16	do	92	123	Tens		
Do	do	do	1922	21088	Limestone [2]			4	26	43	67	78	84	3.02		180	170	do		
Wythe	Wytheville	Comm	1938	46038	Quartz		.3	0	0	1	11	70	94	1.76		125	88	Comp		
Do	do	do	1938	46077	do		.2	0	1	12	49	88	97	2.47		105	108	do		
Do	do	do	1938	46123	do		.2	0	1	11	44	85	96	2.37		120	115	do		
Do	do	do	1938	46144	do		.2	0	0	1	9	76	96	1.82		81	84	do		
Do	do	do	1938	46253	do		.2	0	0	0	8	73	94	1.75	Low	123	120	do		
Do	do	do	1938	46297	do		.2	0	1	8	34	76	95	2.14	do	102	109	do		
Do	do	do	1938	46333	do		.2	0	4	24	50	85	97	2.60	do	84	106	do		
Do	do	do	1938	46334	do		.2	0	0	1	12	78	98	1.89	do	88	106	do		
Do	do	do	1939	46479	do		.4	0	4	23	64	85	97	2.73	do	133	135	do		
Do	do	do	1939	46725	do		.4	0	3	19	61	84	97	2.64	do	119	136	do		
Do	do	do	1939	46728	do		.4	0	2	10	39	74	94	2.19	do	100	99	do		
Do	do	do	1939	46778	do			0	0	1	8	62	93	1.64	do	136	141	do		
Do	do	do	1939	46779	do			0	1	6	28	73	90	1.98	do	135	131	do		
Do	do	do	1939	46780	do			0	0	1	8	65	93	1.67	do	152	144	do		
Do	do	do	1939	46849	QS		.6	0	0	1	6	44	77	1.28	do	132	120	do		
Do	do	do	1940	49568	QQZ		.4	0	3	18	59	92	98	2.70	do	97	99	do		
Do	do	do	1950	80044	QS			1	4	10	31	75	96	2.17	do	114		do	3.9	8–50
York	Yorktown	Local	1931	34106	Q(MF)			1	6	25	56	88	96	2.72	do	113	130	Tens		
Do	Yorktown (Ballards Creek).	Prosp	1931	33985	Q and shells			6	9	13	21	81	99	2.29	do	81	80	do		
Do	Yorktown (York River).	do	1931	33986	do			1	2	2	2	55	100	1.62	do	78	71	do		

WASHINGTON

Clark	Vancouver (Columbia River).	Comm	1941	54785	RQ(BOMa)	2.52	2.3	1	5	15	49	85	99	2.54	Low	90	120	Comp		
Douglas	Rock Island	do	1944	66674	GRFeBQ	2.63	1.0	2	16	33	59	90	98	2.98	do	98	97	do	4.1	4–50

WEST VIRGINIA

Berkeley	Martinsburg	Comm	1920	16168	Limestone [2]			20	51	71	84	89	94	4.09		187	167	Tens		
Do	do	do	1935	34677	do [2]			0	14	46	87	99	100	3.46					3.0	4–50
																			[1] 7.3	4–50
Do	do	do	1935	34844	do [2]		0.7	0	7	43	70	89	95	3.04					4.5	4–50
																			[1] 8.3	$4–5_0$
Do	do	do	1947	73997	do [2]			1	19	73	85	95	97	3.70					1.7	$4–5_0$

[1] Magnesium sulfate test. [2] Crushed.

Table 11.—Results of tests of fine aggregate to Jan. 1, 1951—Continued

WEST VIRGINIA—Continued

Location and type of source			Year sampled	Laboratory No.	Name or lithological composition	Bulk specific gravity	Absorption	Grading: total retained on sieve—						Fineness modulus	Organic matter content	Mortar strength			Soundness	
																Test result		Method used	Test result	Size tested
County	Nearest town	Type						No. 4	No. 8	No. 16	No. 30	No. 50	No. 100			7-day	28-day			
							Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*			*Pct.*	*Pct.*		*Pct.*	*Sieve No.*
Cabell	Huntington	Comm.	1934	40188	Quartz		1.1	1	15	42	65	87	96	3.06	Low	141	145	Comp.		
Do	do	do	1948	74740	QQzSC	2.54	1.8	8	22	29	43	81	95	2.78	High	93	96	do	1.6	⅜″–50
Do	do	do	1948	74969	QGSCSc		1.6	12	32	46	63	88	98	3.39	do	106	111	do	2.1	⅜″–50
Do	do	do	1950	80519	QGSCSc	2.55	1.5	4	18	30	50	85	97	2.84	do	88		do	3.9	4–50
Jefferson	Engle	do	1920	16055	Limestone [2]			5	29	55	76	82	86	3.33		135	157	Tens.		
Lincoln	Hamlin (Mud River).	Local	1919	13991	QS			0	0	2	11	68	98	1.79		69	75	do		
Logan	Logan (Guyandot River).	Prosp.	1919	14624	Quartz			0	0	0	5	59	97	1.61		53	71	do		
Marion	Fairmont	Local	1916	10277	do			0	0	1	7	71	94	1.73		76	81	do		
Do	do	Comm.	1926	28372	do			0	1	7	47	88	96	2.39	High	61	69	do		
Do	do	do	1926	28639	do			0	0	6	44	85	97	2.32	do	86	91	do		
Mason	Point Pleasant (Ohio River).	do	1921	19337	QCS			5	21	36	70	94	99	3.25	Low	137	109	do		
Do	do	do	1923	23745	QCS			5	20	37	71	95	99	3.28	do	130	127	do		
Monongalia	Morgantown	do	1922	21197	QS			1	9	22	53	83	95	2.63	High	87	86	do		
Monroe	Alderson	Local	1936	43043	Limestone [2]			0	7	41	68	83	91	2.90		151	141	do		
Do	do	do	1936	43064	do.[2]		1.3	0	8	41	66	81	90	2.86		163	139	Comp.	2.6	8–100
Do	do	do	1936	43065	do.[2]			0	7	38	63	80	89	2.77		174	146	do		
Morgan	Berkeley Springs	Comm.	1919	14734	Quartz			4	21	28	39	80	94	2.66		92	108	Tens.		
Do	do	do	1949	79376	do		.5	0	0	1	7	65	96	1.69	Low	114		Comp.	1.7	30–50
Do	Largent (Cacapon River).	Prosp.	1917	11462	QS			0	0	0	4	74	99	1.77		69	66	Tens.		
Do	do	do	1917	11463	Quartz			0	0	0	3	67	99	1.69		64	68	do		
Do	do	do	1917	11555	QSlS			0	0	0	1	61	97	1.59		62	62	do		
Ohio	Wheeling	Local	1918	13771	QSCLMa			2	17	31	61	89	99	2.99		69	94	do		
Pocahontas	Mill Point (Stamping Creek).	do	1940	51914	QzS		.7	0	8	23	35	45	69	1.80	Low	135	118	Comp.		
Roane	Spencer (Spring Creek).	Prosp.	1918	13574	QS			5	11	19	45	77	90	2.47		82	98	Tens.		
Do	do	Local	1919	14246	QS			9	18	27	57	92	99	3.02		92	97	do		
Taylor	Fetterman (Tygart River).	do	1918	13293	Quartz			0	0	5	43	96	99	2.43		46	79	do		
Tucker	Hendricks	Comm.	1949	78538	Limestone [2]	2.60	1.8	0	16	54	71	76	79	2.96		136		Comp.		
Do	Thomas	do	1935	40935	Quartz	2.58	.6	3	16	38	50	83	93	2.83		144	143	Tens.		
Do	do	do	1949	78537	do	2.61	.8	0	4	15	43	93	96	2.51		113		Comp.		
Upshur	Buckhannon (Buckhannon River).	Local	1922	21148	do			0	3	15	55	90	98	2.61	High	101	105	Tens.		
Do	do	do	1922	21196	do			0	7	22	65	92	98	2.84	do	103	103	do		
Wayne	Lavalette (Twelve Pole Creek).	Comm.	1919	14152	Q(M)			0	0	0	10	76	98	1.84		73	88	do		
Do	do	do	1919	14458	Q(ScS)			0	0	15	68	97	99	2.79		91	93	do		
Wetzel	New Martinsville (Ohio River).	do	1925	26971	SQC			6	25	42	63	90	98	3.24	High	133	131	do		
Do	do	do	1929	32245	QSL			3	20	34	52	85	98	2.92	do	131	126	do		
Wood	Parkersburg (Ohio River).	do	1945	68158	QS(G)	2.61	1.0	2	14	26	44	89	98	2.73	do	112	112	Comp.	3.5	4–50

WISCONSIN

Ashland	Odanah	Comm.	1920	16432	Q(RGQz)			8	22	43	72	92	99	3.36		136	112	Tens.		
Barron	Haugen	do	1949	77353	QSGDC	2.61	1.0	2	13	29	60	93	97	2.94	Low	90		Comp.	5.7	4–50
Do	do	do	1949	79403	QSGDC			1	10	27	53	85	97	2.73					3.8	4–50
Buffalo	Alma	Local	1922	21878	Q(FCM)			0	1	2	11	65	95	1.74	Low	91	86	Tens.		
Chippewa	Anson	Comm.	1920	16491	QGCS			1	13	33	72	92	97	3.08	do	131	108	do		
Do	do	do	1920	17210	QFG			15	23	33	55	77	97	3.00	High	87	85	do		
Do	Chippewa Falls	do	1930	33185	QCGRF	2.68	.2	1	10	26	48	88	99	2.72	Low	103	92	do		
Dunn	Menomonie	Prosp.	1919	15198	Q(QzS)			1	13	29	64	96	99	3.02		103	102	do		
Eau Claire	Eau Claire	Comm.	1919	14690	Q(CSG)			2	18	36	70	91	96	3.13		85	103	do		
Do	do	Local	1919	15101	Q(GCS)			1	13	25	60	92	99	2.90		88	81	do		

Do	do	do	1919	15106	Q(CS)			1	5	15	54	92	98	2.65		91	88	do		
Do	do	Comm.	1920	16285	Q(CFMa)			5	10	20	56	89	98	2.78		106	102	do		
Do	do	Local	1920	16490	QFM			0	1	5	27	63	95	1.91	High	99	76	do		
Do	do	do	1920	17211	QFCG			1	14	29	61	91	99	2.95	do	135	118	do		
Grant	Boscobel	do	1921	19097	Q(C)			0	4	6	30	68	99	2.07	Low	81	68	do		
Jackson	Black River Falls	Prosp.	1919	14722	Q(SQz)			5	14	25	61	90	98	2.93		85	89	do		
Do	do	Local	1920	16198	Q(GDiCMa)			1	9	28	82	96	98	3.14		96	101	do		
Kewaunee	Casco Junction	Comm.	1920	16232	Q(CLMa)			6	14	23	44	68	92	2.47		123	133	do		
La Crosse	Burns	Prosp.	1919	15347	Quartz			0	0	0	1	18	96	1.15		79	82	do		
Do	do	do	1919	15348	do			0	0	2	9	49	92	1.52		70	73	do		
Lafayette	New Diggings	Local	1920	16725	do			0	0	0	3	21	85	1.09	Low	102	101	do		
Lincoln	Irma	do	1920	16627	QFMa			2	11	25	57	87	97	2.79	do	116	106	do		
Do	Merrill	do	1920	16866	QFCMa			5	23	43	72	88	95	3.26	do	127	120	do		
Manitowoc	Manitowoc	do	1920	16450	QL			0	0	2	13	40	81	1.36	do	85	81	do		
Do	do	do	1920	16690	L(QC)			1	8	19	55	86	96	2.65	do	126	132	do		
Do	Newton	do	1920	16691	QLCMa			1	6	12	34	75	97	2.25	do	112	128	do		
Do	do	do	1920	17294	QLCMa			13	22	33	54	85	98	3.05	do	131	108	do		
Marathon	Wausau	Comm.	1920	16184	QSC			15	22	31	54	84	98	3.04	High	82	76	do		
Do	do	do	1920	16348	QCFMa			3	13	28	63	89	97	2.93	do	94	68	do		
Do	do	Local	1920	16946	QCSMa			1	7	14	38	65	98	2.23	Low	102	85	do		
Do	do	Comm.	1920	17286	QFCMa			1	10	25	58	87	98	2.79	High	94	90	do		
Do	do	do	1921	19595	Q(FQz)			4	14	29	67	93	99	3.06	do	97	83	do		
Do	do	do	1921	20366	Q(FCMa)			3	13	29	65	91	99	3.00	Low	121	114	do		
Do	do	do	1921	20367	Q(FCMa)			1	11	26	65	91	98	2.92	do	120	113	do		
Do	do	do	1921	21875	QGRFS			1	11	25	66	93	99	2.95	do	127	123	do		
Milwaukee	Brown Deer	Local	1920	16351	QL			1	9	17	31	64	93	2.15	High	71	63	do		
Do	Milwaukee	do	1920	17285	QL			2	12	22	45	76	95	2.52	Low	115	111	do		
Oneida	Pelican	do	1920	16378	Q(GnMa)			5	21	39	63	78	88	2.94	High	117	105	do		
Do	do	do	1920	17473	QFGSMa			4	30	55	80	94	97	3.60	do	136	127	do		
Do	Rhinelander	Prosp.	1920	16864	QFCMa			3	6	10	25	73	97	2.14	do	79	73	do		
Do	do	do	1920	17470	QFCMa			1	10	21	51	84	96	2.63	do	89	70	do		
Ozaukee	Mequon	Local	1920	16928	QCL			3	21	36	57	83	96	2.96	Low	135	121	do		
Polk	Lincoln Township	do	1920	16918	QCQzG			1	9	21	54	86	98	2.69	High	102	90	do		
Do	do	do	1921	18887	QSC			3	21	35	64	86	96	3.05	do	98	90	do		
Richland	Richland Center	do	1920	17148	Quartz			0	0	0	2	27	90	1.19	do	76	72	do		
Rock	Beloit	Comm.	1919	14758	DoCS			9	21	31	53	87	99	3.00		113	111	do		
Do	do	do	1919	14760	QCLS			3	22	37	62	89	97	3.10		136	133	do		
Do	do	do	1919	15125	QCL			1	13	22	47	84	97	2.64		125	132	do		
Do	Janesville	do	1920	16433	QL			11	23	33	51	80	96	2.94	Low	136	120	do		
Do	do	do	1924	26314	QCL			5	14	21	44	81	97	2.62	do	101	115	do		
Rusk	Glen Flora	Local	1920	16306	QFMa			0	3	9	48	86	98	2.44		89	76	do		
Do	Hawkins	do	1920	16456	QFGSMa			1	10	25	55	82	95	2.68	Low	136	112	do		
Sheboygan	Elkhart Lake	Comm.	1919	14683	Do(QC)			18	42	59	75	86	94	3.74		134	130	do		
Do	do	do	1920	16692	Do(QC)			2	20	37	62	78	90	2.89	Low	164	157	do		
Do	Plymouth	do	1920	16240	QLSC			8	24	42	64	80	92	3.10		154	148	do		
Taylor	Chelsea	Local	1920	17212	QCFGMa			3	9	22	65	92	98	2.89	Low	111	109	do		
Do	Medford	do	1947	73373	GQDiTQz	2.61	1.4	0	10	23	56	92	99	2.80	do	95	102	Comp.	2.7	4–50
Walworth	Elkhorn	do	1920	16927	QCL			3	26	44	64	84	93	3.14	do	168	145	Tens.		
Washington	Barton	do	1921	18040	QCLSFMa			1	7	15	29	52	82	1.86	do	108	99	do		
Waukesha	Menomonee Falls	do	1920	16350	QCL			0	3	9	33	70	96	2.11		93	90	do		
Do	North Lake	do	1919	14995	Q(SCL)			4	33	57	78	90	96	3.58		121	121	do		
Do	Pewaukee	Comm.	1919	15162	L(QCG)			4	31	51	62	74	92	3.14		182	153	do		
Do	do	do	1919	16219	QLC			1	9	20	42	75	92	2.39		122	135	do		
Do	do	do	1920	16538	QLC			2	16	30	52	79	96	2.75	Low	144	121	do		
Waupaca	Embarrass	Local	1919	14837	Q(SL)			0	5	12	45	83	97	2.42		113	115	do		
Do	do	do	1920	16238	Q(FGL)			1	7	12	44	84	98	2.46		119	130	do		
Do	do	do	1920	17026	Q(FMa)			0	3	7	27	60	98	1.95	Low	103	98	do		
Do	Waupaca	do	1919	14829	Q(FMS)			1	8	18	35	58	92	2.12		116	117	do		
Do	do	Comm.	1919	14838	Q(FGL)			1	11	26	51	77	98	2.64		126	135	do		
Do	do	do	1920	16234	Q(FGL)			1	5	7	46	92	98	2.49		124	127	do		

WYOMING

Teton	Moran (Lava Creek).	Prosp.	1944	65947	RQF			1	25	40	49	61	89	2.65					3.6	4–50
Do	Moran (Pilgrim Creek).	do	1944	65949	RQ			0	23	38	52	69	90	2.72					4.6	4–50
Do	Moran (Snake River).	do	1944	65945	RFOQ			0	24	50	73	88	93	3.28					21.8	4–50
	Yellowstone National Park.	Local	1947	74156	RLSGQ	2.41	2.9	0	15	36	62	80	92	2.85		92	94	Comp.	3.2	4–50
	do	do	1947	74157	GRSQ	2.56	1.4	0	24	47	70	83	89	3.13		89	97	do	3.9	4–200
	do	do	1947	74158	ORS	2.30	2.1	0	40	72	92	98	100	4.02	Low	77	86	do	2.2	4–50
	do	Prosp.	1947	74159	OR	2.32	1.5	0	54	85	98	100	100	4.37	do	63	76	do	3.0	4–50

[2] Crushed.

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