TABLE I.—*Summary of tests on construction materials of Pottawatomie County, Kans.*

[Authority for test data: HC, State Highway Commission of Kansas. HC, GS, sieve analysis and laboratory tests by State Highway Commission of Kansas; sample collection and description of material by U. S. Geological Survey.]

Classification of material	No. on geologic map	Location	Estimated amount of material (cubic yards)	Average thickness (feet)		Accessibility	Lithologic unit	Authority for test data	Laboratory No.	Date of test	Description of materials	Laboratory test data								Sieve analysis (U. S. standard)										
																				Cumulative percent retained on—									Percent passed No. 200 (wash)	Gradation factor
				Material	Overburden							Weight per cubic foot (pounds dry)	Specific gravity (saturated)	Compressive strength ratio (figures in parenthesis refer to numbered days)	Los Angeles abrasion percent wear	Los Angeles grading	Deval abrasion (rock) percent wear	Freeze and thaw-soundness loss ratio (25 cycles) Satisfactory, NS-Not satisfactory	Toughness	Absorption	2-in.	1½-in.	1-in.	¾-in.	⅜-in.	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100		
Fine aggregate	fa 1	SE¼SW¼ sec. 4, T. 10 S., R. 12 E.	10,000	5	1	Good	Glacial outwash	HC	16448	4-13-31	Bedded chert gravel with matrix of sand, thick beds of sand; thin clay layers and some hard conglomerate.			(7) 1.36, (28) 1.35							0	0	0	0	1	2	15	43	78	97	99	1	3.35
								HC	16449	4-10-31	This deposit contains some coarse aggregate and a few boulders up to 1 ft in maximum dimension.			(7) 1.19, (28) 1.04							0	0	0	0	0	1	5	20	59	95	99		2.79
Mixed aggregate	ma 1	SE¼SW¼ sec. 23, T. 9 S., R. 10 E.	(1)	24	1.5	Good	Glacial outwash	HC GS	66221	1-23-50	Coarse sand and some fine gravel. Coarse fraction retained on no. 4 sieve contains 5 percent quartz; 5 percent feldspar; 85 percent acidic igneous rock; 5 percent quartzite; sandstone trace. Fine fraction 60 percent quartz; 25 percent feldspar; 10 percent acidic igneous rock; 5 percent basic igneous rock.	106.8	2.60	(1) 0.98, (3) 0.93	33.4	C		0.98			0	0	0	0	2	8	16	34	60	84	96	2.13	3.02
	ma 2	NE¼NE¼ sec. 16, T. 10 S., R. 12 E.	(1)	30	3+	Good	Alluvium	HC	12105	7-21-28	Sand-gravel from pre-1903 channel of Kansas River. Suitable for concrete work.			(7) 2.22, (28) 1.79 (+)							0	0	0	0	1	4	12	32	73	97	100	0	3.19
								HC	12106	7-21-28	Most of large particles are chert or limestone. Suitable for concrete work.			(1) 3.15, (3) 1.79							0	0	0	0	1	5	14	42	75	96	99	0	3.32
								HC	49412	1-22-46	Contains small amount of calcareous particles. Acceptable under secs. 106, 108, 110, and 112 of specifications of 1945. High organic content.	104.7	2.59	(1) 1.49, (3) 1.25	36.7	D		.94			0	0	0	0	1	6	30	73	89	93	94	5.5	3.86
	ma 3	SE¼NE¼ sec. 9, T. 10 S., R. 10 E.	(1)	------	0	Good	Alluvium	HC	19975	9- 6-32	Sand-gravel. Contains some limestone and chert pebbles. In 1949 daily production of road gravel was 250-300 cu yds; concrete sand 400 cu yds.			(7) 1.80, (28) 1.36							0	0	0	0	2	8	28	54	82	96	100	0	3.70
								HC	22782	3- 5-34			2.61	(7) 1.27, (28) 1.10							0	0	0	0	1	9	25	48	79	95	100	0	3.57
								HC	23085	4- 9-34			2.58	(7) 1.40, (28) 1.04							0	0	0	0	0	2	11	25	60	90	97	1	2.85
								HC	60274	1-28-49	High organic content	111.9	2.62	(1) 2.02, (3) 1.63	32.2			.94			0	0	0	0	1	6	20	47	79	96	99	0.37	3.48
Mineral filler	mf 1	NE¼NE¼ sec. 3, T. 6 S., R. 12 E.	35,000	10+	1	Good	Glaciolacustrine	HC GS	63990	7-28-49	Cementation test by Bollen method. (41 Av.) Liquid limit=33: Plastic Index=8. Tan-gray coarse silt, $CaCo_3$ abundant.	82 to 82.5	2.61								0	0	0	0	0	0	0	0	1	1	2	97.6	
								HC	61782	1-28-49	Cementation test by Bollen method (5 Av.) Thin layers of carbonaceous clay.	86.8	2.60								0	0	0	0	0	0	0	0	0	1	10	33	
Sand	s 1	SW¼NW¼ sec. 7, T. 10 S., R. 9 E.	(1)	100+	1	Good	Glacial outwash	HC GS	66222	1-23-50	Fine stratified clean quartz sand. Locally cemented by iron oxide. Fine fraction was 75 percent quartz; 15 percent feldspar; 5 percent mica; and 5 percent basic igneous flint gravel base-course rock.	99.3	2.61	(1) 0.41, (3) 0.51							0	0	0	0	0	0	0	0	1	10	49	8.14	0.60
Limestone gravel	lg 1	SW¼SW¼ sec. 15, T. 6 S., R. 12 E.	140,000	20	0	Good	Old gravel	HC	61773	1-28-49	Liquid Limit=47; Plastic Index=29. Limestone and chert gravel with sand, silt and clay admixed. Some boulders more than 1 ft in diameter. Acceptable for use as under sec. 116 of 1945 specification.										0	9	------	23	36	46	59	74	80	82	83	16	4.92
	lg 2	NW¼SE¼ sec. 8, T. 6 S., R. 8 E.	10,000	------	0	Good	Terrace deposits	HC	58129	1-29-49	Acceptable for use under secs. 108, 109, 110, and 112 of 1945 specifications. Limestone and chert pebbles with some silt and clay.				28.0	A		.89			0	10	------	28	50	61	68	71	74	76	77	22.7	5.18
	lg 3	SW¼NW¼ sec. 8, T. 7 S., R. 7 E.	50,000	------	0	Good	Sanborn formation	HC	61775	1-25-49	Calcareous chert gravel. Acceptable for use under secs. 108, 109, 110 and 112 of 1945 specifications with control of sieve analysis and deleterious substances. Liquid Limit=33; Plastic Index=15.				35.2	A		.88			0	6	------	27	60	81	92	96	97	97	97	2.60	6.53
									61776						37.0			.89															
	lg 4	SE¼SE¼ sec. 22, T. 8 S., R. 12 E.	1,000	------	0	Good	Terrace deposits	HC	71439	4-18-51	Limestone pebbles with some chert. Acceptable for use under secs. 101 and 102 of 1951 specifications.				42.8	A		.72			3	7	------	21	36	51	63	73	81	87	89	11.0	5.08
	lg 5	SW¼SW¼ sec. 15, T. 8 S., R. 11 E.	1,000	------	0	Poor	Sanborn formation	HC	71438	4-18-51	Coarse limestone fragments with some shale. Acceptable for use under secs. 101 and 102 of 1951 specifications.				37.6	A		.83			8	12	------	35	52	61	68	76	85	90	92	7.70	5.71
Chert gravel	cg 1	SE¼SE¼ sec. 35, T. 8 S., R. 12 E.	240,000	38+	4	Good	Old gravel	HC	33641	3-14-38	Slaking (30+); cementation tests (100+) on material passing no. 4 sieve. Upper part calcareous.		2.52		16.0	C					0	9	17	30	47	57	64	71	84	95	100	0	5.57
															11.0	E																	
								HC	51850	8-10-46	Weight rodded as received 113 lbs per cu ft; loose as received 104 lbs per cu ft. Limestone and chert pebbles, sand and clay binder. Conglomeratic in places.																								
								HC	------	1-11-49	Plastic Index=12										0	9	------	26	45	58	70	76	80	88	90	9	
								HC	69923	11- 9-50	Acceptable for aggregate under supp. specification 45-407 and secs. 108, 109, 110, and 112 of the 1945 specifications.				28.4	A		.95															
	cg 2	SE¼SE¼ sec. 19, T. 8 S., R. 9 E.	60,000	6	1	Good	Old gravel	HC	38818	1-30-40	Oversize=2.3 percent; slaking=24. Clayey chert gravel, and some glacial quartzite boulders. Cementation (100+) Deval abrasion (graded coarse aggregate) Percent wear-E grading=15.5. Liquid Limit=19; Plastic Index=32.										0	4	13	29	48	64	75	81	83	84	84	15.4	5.52
Limestone	ls 1	NE¼SE¼ sec. 15, T. 6 S., R. 12 E.	1,300	4	1.5	Fair	Howe limestone member	HC	38982	2-26-40	Porous massive dark-gray to tan limestone that weathers cavernous. Satisfactory as aggregate under secs. 68, 69, 70, 71, 73, and 76 of 1937 specifications.	156.8	2.54				3.7	S	12	2.3														
	ls 2	NW¼SE¼ sec. 18, T. 6 S., R. 12 E.	8,000	3	1.5	Good	Reading limestone member. Upper layer.	HC	50585	7- 1-46	Massive dense hard gray to tan limestone. Acceptable for aggregate under secs. 108, 109, 110, 111, 112, and 114 of 1945 specifications.		2.53		26.8	A		.85		2.80													
							Middle layer	HC	50586	7- 1-46	Usually divides into 3 layers. Acceptable for aggregate		2.51		30.9	A		.85		2.84													
	ls 3	NW¼SW¼ sec. 12, T. 6 S., R. 10 E.	6,000	2	3	Poor	Five Point limestone member.	HC GS	66225	1-23-50	Coarse massive coquina limestone; limonite stained. Not satisfactory for mixed or coarse aggregate for concrete because of high percent wear.		2.26		51.3	A		.95		6.45													
	ls 4	NW¼SW¼ sec. 21, T. 6 S., R. 10 E.	8,000	2	1.5	Good	Crouse limestone	HC GS	66233	1-23-50	The upper massive tan-gray layer is of the Crouse limestone; small cavities. Acceptable for surfacing.		2.41		32.4	A		.89		5.12													
	ls 5	SW¼SW¼ sec. 22, T. 6 S., R. 10 E.	30,000	4	1.5	Good	Cottonwood limestone member. Upper layer.	HC	61780	1-28-49	Tan-gray massive limestone with ¼ in. cavities; weathers dark gray. Acceptable for surfacing. 61780 from upper part of limestone.		2.33		47.9			.75															
							Lower layer	HC	61781	1-28-49	Tan-gray massive limestone with ¼ in. cavities; weathers dark gray. Acceptable for surfacing. 61781 from lower part.		2.37		44.6			.71															
	ls 6	NE¼NE¼ sec. 27, T. 6 S., R. 10 E.	8,000	6+	2	Poor	Neva limestone member	HC	32900	10-29-37	Massive gray limestone with tan-gray porous spots. Satisfactory for aggregate under secs. 58, 59, 60, 61, and 63 of 1934 specifications.		2.50				5.8	S	5	3.0													
								HC	38980	2-26-40	Massive gray limestone with tan-gray porous spots. Satisfactory for aggregate under secs. 68, 69, 71, 73, and 76 of 1937 specifications.		2.34				7.7	S	4	5.8													
	ls 7	NE¼SE¼ sec. 28, T. 6 S., R. 10 E.	8,000	6	1.5	Poor	Cottonwood limestone member.	HC	30275	11-23-36	Massive light-gray limestone with a few divitrified chert nodules. Acceptable for aggregate under secs. 58, 59, 60, and 61 of 1934 specifications.		2.43				6.5	S	8	3.9													
	ls 8	SW¼SE¼ sec. 28, T. 6 S., R. 10 E.	4,000	2	1.5	Good	Eiss limestone member	HC	38981	2-26-40	Massive dense tan-gray limestone with small cavities on weathered surface. Satisfactory for aggregate under secs. 68, 69, 70, 71, 73, and 76 of 1937 specifications.		2.50				4.8	S	8	2.8													
	ls 9	SE¼SW¼ sec. 15, T. 7 S., R. 12 E.	8,000	3	1.5	Fair	Funston limestone	HC	27528	2-10-36	Coarse light-gray limestone with calcite cleavage. Porous when weathered. Not satisfactory—too soft for aggregate.		2.09				19.5	S	3	9.2													
								HC	28468	5-21-36	Coarse light-gray limestone with calcite cleavage. Porous when weathered. Satisfactory for aggregate under secs. 58, 59, and 61 of 1934 specifications.		2.47				8.6	S	6	2.64													
								HC	38977	2-26-40	Coarse light-gray limestone with calcite cleavage. Porous when weathered. Satisfactory for aggregate under secs. 68, 69, 70, 71, 73, and 76 of 1937 specifications.		2.29				8.0	S	5	7.8													
								HC	38979	2-16-40	Coarse light-gray limestone with calcite cleavage. Porous when weathered. Satisfactory for aggregate under secs. 68, 69, 71, and 73 of 1937 specifications.		2.26				9.1	S	3	5.2													
								HC	45467	8- 4-42	Coarse light-gray limestone with calcite cleavage. Porous when weathered. Acceptable as riprap under sec. 91, Art. 91.11 of 1937 specifications.							S															
								HC	49432	3-21-46	Coarse light-gray limestone with calcite cleavage. Porous when weathered. Acceptable for aggregate under secs. 107, 108, 109, 110, 111, 112, and 114 of 1945 specifications.		2.63		28.6	A		.96		1.0												
								HC	49433	3-21-46	Coarse light-gray limestone with calcite cleavage. Porous when weathered. Does not comply with soundness requirement of material for aggregate of sec. 107 of 1945 specifications.		2.51		34.7	A		.64		3.4												
								HC	49434	3-21-46	Coarse light-gray limestone with calcite cleavage. Porous when weathered. Not satisfactory for most aggregate uses because of high percent wear according to 1945 specifications.		2.17		55.2	A		.98		8.95												
	ls 10	NE¼NW¼ sec. 21, T. 7 S., R. 12 E.	5,000	4	1.5	Good	Funston limestone. Upper 3 feet.	HC	30673	1-13-37	Porous tan-gray massive limestone with calcite cleavage; weathers into several layers. Satisfactory under supp. specifications for bituminous mat surface written March 31, 1946.		2.25				9.0	S	6	3.3													
								HC	38976	2-26-40	Satisfactory for aggregate under secs. 68, 69, 70, 71, 73, and 76 of 1937 specifications.		2.61				3.9	S	7	1.6													
								HC	38977	2-16-40	Satisfactory for aggregate under secs. 68, 69, 71, and 73 of 1937 specifications.		2.41				8.6	S	4	3.8													
								HC	49429	3-18-46	Acceptable for aggregate under secs. 107, 108, 109, 110, 111, and 114 of 1945 specifications.		2.61		31.5	A		.96		1.3												
								HC	49430	3-18-46	Acceptable for aggregate under secs. 107, 108, 109, 110, 111, 112, and 114 of 1945 specifications.		2.21		38.5	A		.94		5.54												
	ls 11	SW¼SE¼ sec. 23, T. 7 S., R. 12 E.	6,000	2	1.5	Fair	Eiss limestone member	HC GS	66230	1-23-50	Dense fine-grained gray limestone. Acceptable for surfacing. About 1000 cu yds of limestone in blocks sized properly for crushing were in quarry in 1949.		2.53		28.2	A		.89		3.04													
	ls 12	NW¼SW¼ sec. 27, T. 7 S., R. 12 E.	10,000	3	1.5	Good	Funston limestone	HC	30500 30501	12-12-36	Two layers examined separately for soundness. Massive, coarse, light-gray to tan-gray limestone that weathers tan, cavernous. Satisfactory for masonry stone in drainage structures. Used as riprap on Little Noxie Creek.							S															
								HC	38975	2-23-40	Two layers examined separately for soundness. Massive, coarse, light-gray to tan-gray limestone that weathers tan, cavernous. Satisfactory for aggregate under secs. 68, 69, 71, 73, and 76 of 1937 specifications.		2.33				7.0	S	4	5.8												
								HC	49431	3-21-46	Acceptable for aggregate under secs. 107, 108, 109, 111, 112, and 114 of 1945 specifications.		2.33		40.3	A		.98		5.77												
	ls 13	NW¼NW¼ sec. 32, T. 7 S., R. 9 E.	23,500	4.2	4	Good	Cottonwood limestone member.	HC	48954	11-29-45	Medium-hard, porous limestone containing chert and chalcedony nodules. Satisfactory for aggregate under secs. 107, 108, 109, 111, and 112 of 1945 specifications.		2.46		44.0	A		.80		3.96													
	ls 14	SE¼SE¼ sec. 10, T. 7 S., R. 7 E.	50,000	2.5	5	Good	Towanda limestone member.	HC GS	66231	1-23-50	Massive, dense, hard-gray limestone layer 3.9 ft above Holmesville shale. Acceptable for aggregate. Because of thickness (14 ft), and thin overburden, this location might be good source of road metal.		2.51		28.2	A		.96		3.56													
	ls 15	NW¼SW¼ sec. 13, T. 7 S., R. 7 E.	8,000	2.3	2	Good	Fort Riley limestone member.	HC GS	66229	1-23-50	Medium-hard, cavernous, chalky tan-gray limestone. Acceptable for aggregate. Material from this quarry used for road surfacing and dimension stone.		2.36		35.2	A		.97		5.90													
	ls 16	SE¼SE¼ sec. 14, T. 8 S., R. 12 E.	2,500	3+	2	Fair	Neva limestone member	HC	33230	1-27-38	Massive light-gray limestone. Satisfactory for aggregate under secs. 68, 69, 71, 72, and 73 of 1937 specifications.		2.37				10.2	S	5	4.59													
	ls 17	SE¼SE¼ sec. 30, T. 8 S., R. 12 E.	30,000	6	.5	Good	Cottonwood limestone member.	HC	49435	3-21-46	Massive light-gray limestone with chert nodules. Not satisfactory. Does not comply with soundness requirement of sec. 107 for aggregate, 1945 specification. Acceptable for surfacing.		2.34		35.2	A		.67		5.64													
								HC	49436	3-21-46	Massive light-gray limestone with chert nodules. Not satisfactory. Does not comply with soundness requirement of sec. 107 for aggregate, 1945 specification. Acceptable for surfacing.		2.31		48.7	A		.82		4.38												
								HC	49437	3-21-46	Massive light-gray limestone with chert nodules. Acceptable as aggregate for surfacing under sec. 112 of 1945 specifications.		2.42		41.0	A		.72		4.90												
								HC	49438	3-21-46	Massive light-gray limestone with chert nodules. Acceptable as aggregate for cover material or surfacing under secs. 110, and 112 of 1945 specifications.		2.37		38.3	A		.82		5.94												
								HC	52977	12- 3-46	Massive light-gray limestone with chert nodules. Satisfactory for aggregate under secs. 107, 108, 109, 110, 111, 112, and 114 of 1945 specifications.		2.37		33.6	A		.96		5.22												
								HC	61777	1-28-49	Massive light-gray limestone with chert nodules. Acceptable for surfacing.		2.40		37.4			.79													
									61778	1-28-49	Massive light-gray limestone with chert nodules. Not satisfactory for coarse aggregate for concrete because of high percent wear, according to 1945 specifications.		2.38		53.6			.40													
									61779	1-28-49	Massive light-gray limestone with chert nodules. Acceptable for surfacing.		2.40		37.0			.79													
	ls 18	NE¼SE¼ sec. 6, T. 8 S., R. 10 E.	15,000	9	1.5	Fair	Neva limestone member	HC	26252	8- 1-35	Massive dense gray limestone with small porous tan-gray pockets. Satisfactory as a coarse aggregate in portland cement concrete structures under sec. 59 of 1934 specifications.		2.43				6.2	S	5	4.26													
	ls 19	NE¼NW¼ sec. 27, T. 8 S., R. 10 E.	1,000	2	1.5	Good	Aspinwall limestone member.	HC GS	66223	1-23-50	Massive medium coarse-grained tan to tan-gray limestone; laminated with clay plates. Acceptable for aggregate Thinness (1 ft) and rectangular jointing of this stone make it suitable for masonry stone in drainage structure.		2.41		32.8	A		.96		6.26													
	ls 20	NE¼SW¼ sec. 27, T. 8 S., R. 10 E.	1,100	3.5	.5	Good	Brownville limestone member.	HC GS	66228	1-23-50	Massive hard dense brown limestone in two beds. Acceptable for aggregate. About 1,000 cu yds of limestone in blocks sized properly for crushing, are laying in quarry.		2.61		22.8	A		.96		2.35													
	ls 21	NE¼NE¼sec. 34, T. 8S., R. 9 E.	24,000	6	1.5	Fair	Burr limestone member	HC	48955	12- 4-45	Massive porous gray limestone. Satisfactory for aggregate under secs. 107, 108, 109, 110, 111, and 112 of 1945 specifications.		2.53		31.5	A		.95		2.49													
								HC	48956	12- 4-45	Massive porous gray limestone. Acceptable for aggregate under secs. 107, 108, 109, 110, 111, and 112 of 1945 specifications.		2.49		35.1	A		.91		3.02												
								HC	48957	12- 4-45	Massive porous gray limestone. Acceptable for surfacing under sec. 112 of 1945 specifications. Under soundness C-course; F-fine.		2.42		41.5	A		(C) .87 (F) .74		4.33												
	ls 22	SE¼NE¼ sec. 15, T. 8 S., R. 7 E.	2,000	2	1.5	Poor	Schroyer limestone member.	HC GS	66226	1-23-50	Massive crossbedded porous gray limestone; weathers dark gray. Layer without chert nodules. Acceptable for aggregate, but amount of overburden makes this limestone unsuitable for quarrying in most places.		2.51		29.8	A		.95		2.75													
	ls 23	SW¼SE¼sec. 3, T. 9 S., R. 12 E.	40,000	6	0	Good	Neva limestone member	HC	35877	11-16-38	Massive light-gray, slightly porous limestones. Satisfactory for aggregate under secs. 68, 69, 70, 71, 73, and 76 of 1937 specifications.		2.51				4.6	S	9	2.7													
	ls 24	SW¼SE¼ sec. 15, T. 9 S., R. 12 E.	9,000	6	1.5	Fair	Cottonwood limestone member.	HC	38974	2-26-40	Massive light-gray limestone with chert nodules; weathers shaly. Satisfactory for aggregate under secs. 68, 69, 70, 71, 73, and 76 of 1937 specifications.		2.39				5.8	S	5	5.5													
	ls 25	E½SW¼ sec. 27, T. 9 S., R. 12 E.	20,000	6+	.5	Good	Neva limestone member	HC	38973	2-19-40	Massive dense light-gray limestone with tan-gray porous spots; weathers tan gray and shaly. Satisfactory for aggregate in crushed stone for base construction under supp. specification no. 37-299.		2.38				7.3	NS	4	4.8													
	ls 26	SE¼SE¼ sec. 17, T. 9 S., R. 11 E.	15,000	9	1.5	Good	Neva limestone member	HC	45158	6-12-42	Massive dense light-gray limestone with tan-gray porous spots. Acceptable under supp. specification no. 37-610-1937.							.94															
	ls 27	SW¼NW¼ sec. 21, T. 9 S., R. 11 E.	1,400	2	1.5	Good	Americus limestone member.	HC GS	66234	1-23-50	Massive dense light bluish-gray limestone; weathers gray shaly. Acceptable for aggregate. Thinness of the two layers of this limestone make it suitable for masonry stone in drainage structures.		2.60		30.1	A		.92		2.39													
	ls 28	SE¼SE¼ sec. 6, T. 9 S., R. 10 E.	8,000	8.5	1.5	Good	Dover limestone member	HC GS	66227	1-23-50	Massive dense dark gray-tan mottled limestone, weathers shaly in upper 2 ft and nodular in lower 6.5 ft. Acceptable for surfacing. The Dover limestone is unusually thick near this locality.		2.55		30.8	A		.76		3.40													
	ls 29	NW¼NW¼ sec. 20, T. 9 S., R. 9 E.	8,000	6	1.5	Fair	Burr limestone member	HC GS	66224	1-23-50	Massive coarse-grained granular gray limestone; weathers gray to dark gray porous. Acceptable for aggregate.		2.36		42.0	A		.91		5.83													
	ls 30	NW¼NE¼ sec. 3, T. 10 S., R. 12 E.	2,000	3	0	Good	Neva limestone member	HC	16447	3-23-31	Only lower 3 ft; weathered to shaly gray limestone. Acceptable only for aggregate because of thinness and weathering. Specific gravity (dry) = 2.44. Satisfactory for use in concrete construction.						4.0	S	5	2.64													
	ls 31	NE¼NW¼ sec. 18, T. 10 S., R. 10 E.	30,800	5.7	3	Fair	Tarkio limestone member.	HC GS	66232	1-23-50	Massive dense to chalky light-gray limestone; weathers brown. Acceptable for aggregate. Used for riprap along Union Pacific Railroad.		2.60		30.5	A		.98		1.59													

[1] Unlimited.