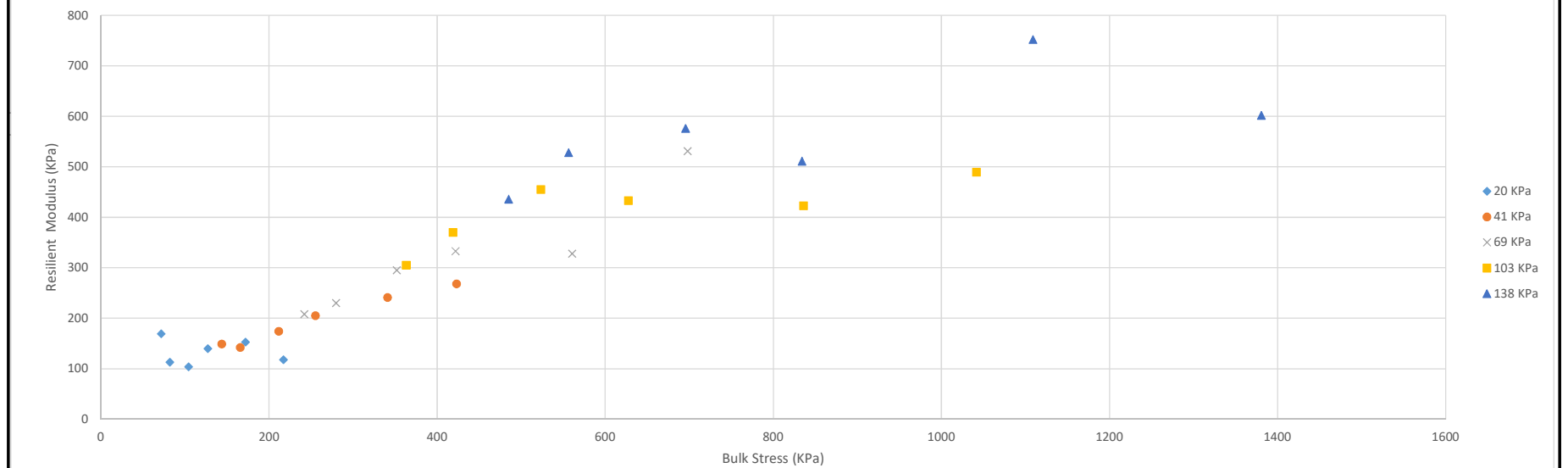


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Resilient Modulus Test Summary

Sample ID	UGM-2(6.4)	Project	Design Parameters and Specifications of UGM
Replicate #	2	Sampled by	Yukon Department of Highways and Public Works
Date Tested	10/10/2017	Soil Type	Gravel with 6.4% fines
Sample Dry Density	2283	Max. Dry Density (Kg/m ³)	2287
Sample Moisture (%)	6.12	Optimum Moisture (%)	8.5



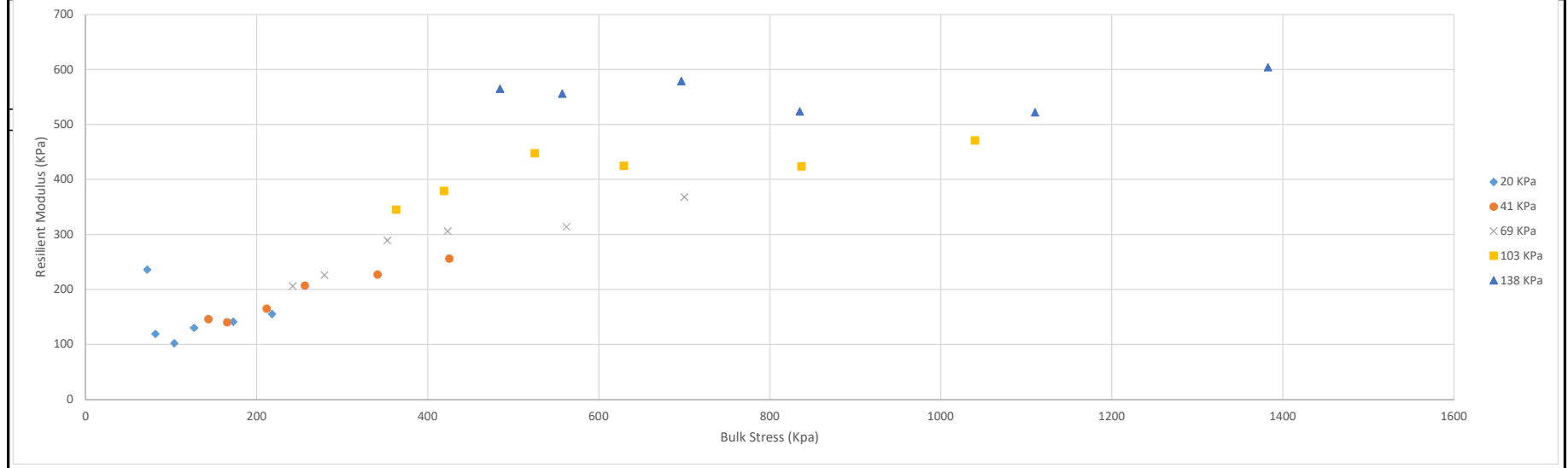
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.7	19.6	35.1	52.8	71.3	20	41.7	72.9
Confining Pressure (KPa)	20.7	41.4	69	103.5	138	20.7	41.4	69
Resilient Modulus (MPa)	169	149	208	305	436	113	142	230
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	108.4	142.6	42.4	87.5	145.1	212.9	281.6	65.3
Confining Pressure (KPa)	103.5	138	20.7	41.4	69	103.5	138	20.7
Resilient Modulus (MPa)	370	528	104	174	295	455	576	118
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	131	214.9	317.2	420.1	110.1	216.9	353.7	525.5
Confining Pressure (KPa)	41.4	69	103.5	138	20.7	41.4	69	103.5
Resilient Modulus (MPa)	205	333	433	511	140	241	328	423
Sequence No.	25	26	27	28	29	30	K1	953.2
Cyclic Stress (KPa)	695	155.2	299	491.1	731.2	966.7	K2	1.152
Confining Pressure (KPa)	138	20.7	41.4	69	103.5	138	K3	-0.6894
Resilient Modulus (MPa)	752	153	268	531	489	602	MR	175
Tested By	Amin Mneina						R2	0.96
Reviewd By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-1(9.7)	Project	Design Parameters and Specifications of UGM
Replicate #	1	Sampled by	Yukon Department of Highways and Public Works
Date Tested	29/11/2017	Soil Type	Gravel with 9.7% fines
Sample Dry Density	2339	Max. Dry Density (Kg/m3)	2362
Sample Moisture (%)	6.56	Optimum Moisture (%)	6.4



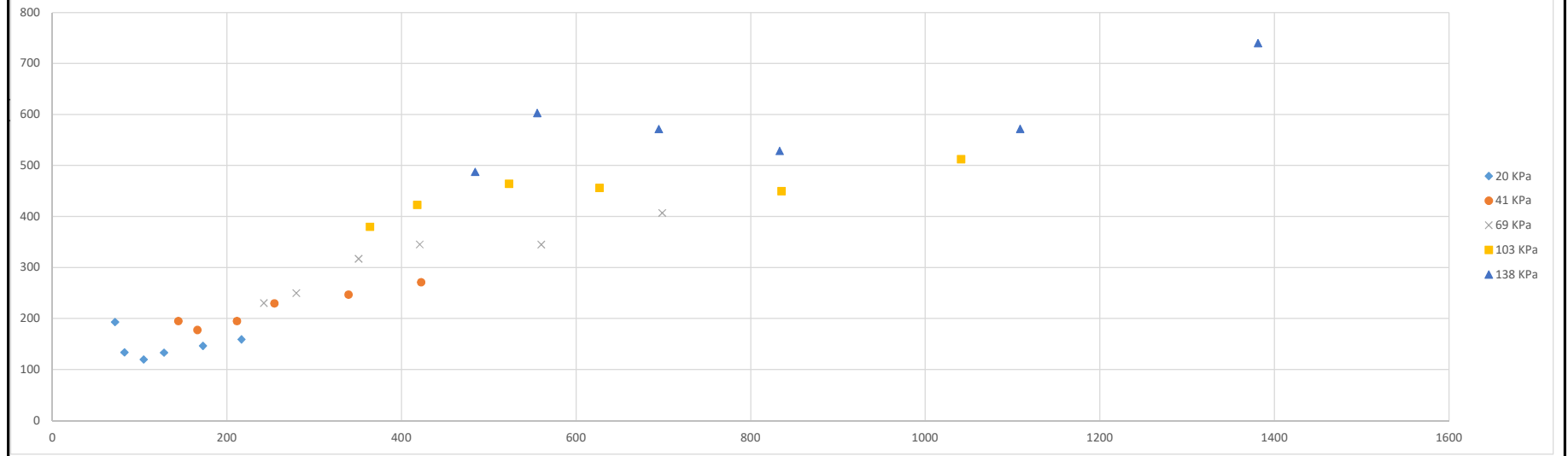
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.9	19.4	35.0	52.7	70.6	19.4	41.3	72.1
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	236	146	206	345	565	119	140	226
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	108.5	143.3	41.6	87.5	145.7	214.5	282.7	64.7
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	379	556	102	165	289	448	579	130
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	132.0	216.3	318.8	421.1	110.5	217.2	355.3	526.7
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	207	306	425	524	141	227	314	424
Sequence No.	25	26	27	28	29	30	K1	862.7
Cyclic Stress (KPa)	696.1	155.9	300.9	493.2	729.5	968.6	K2	1.349
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-0.9639
Resilient Modulus (MPa)	522	155	256	368	471	604	MR	158
Tested By	Amin Mneina						R2	0.97
Reviewed By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-1(9.7)	Project	Design Parameters and Specifications of UGM
Replicate #	2	Sampled by	Yukon Department of Highways and Public Works
Date Tested	30/11/2017	Soil Type	Gravel with 9.7% fines
Sample Dry Density	2328	Max. Dry Density (Kg/m ³)	2362
Sample Moisture (%)	6.79	Optimum Moisture (%)	6.4



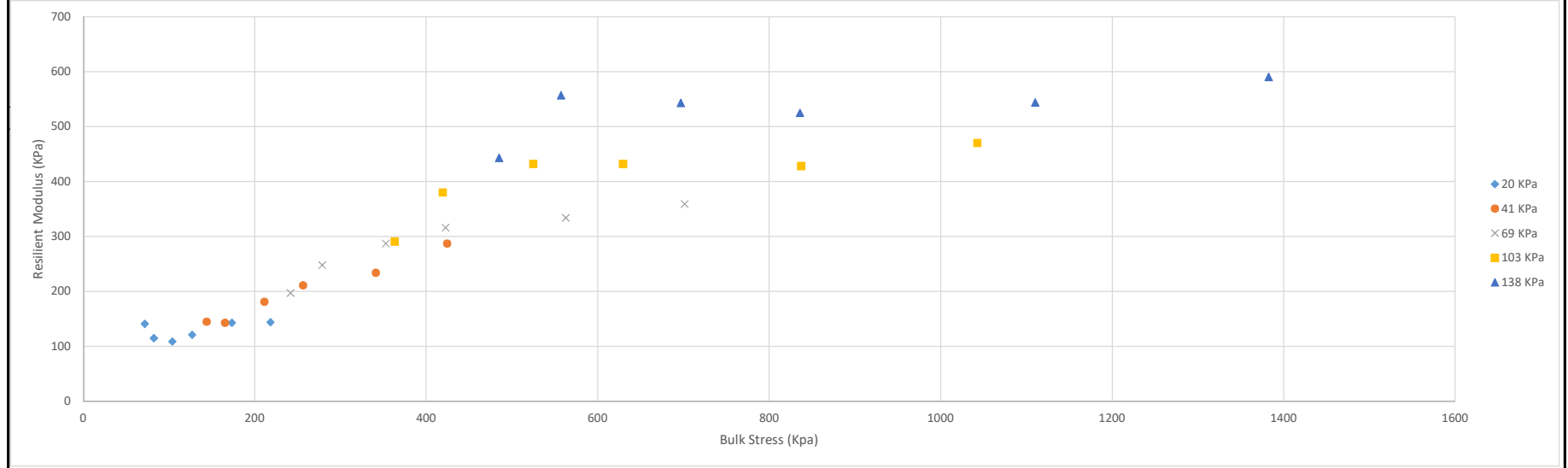
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	10.7	20.3	34.3	51.7	68.9	20.7	40.4	69.5
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	3927	5822	3656	966	1030	3379	775	474
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	105.4	140.6	40.9	84.0	143.0	211.3	279.7	62.5
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	713	927	416	297	463	652	808	227
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	128.2	212.6	315.5	417.7	107.5	212.8	351.0	522.2
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	301	470	570	682	194	314	458	556
Sequence No.	25	26	27	28	29	30	K1	1565
Cyclic Stress (KPa)	692.7	150.3	295.3	488.4	726.7	960.6	K2	1.414
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-1.326
Resilient Modulus (MPa)	672	211	356	535	638	733	MR	260
Tested By	Amin Mneina						R2	0.97
Reviewed By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-1(9.7)	Project	Design Parameters and Specifications of UGM
Replicate #	3	Sampled by	Yukon Department of Highways and Public Works
Date Tested	4/12/2017	Soil Type	Gravel with 9.7% fines
Sample Dry Density	2343	Max. Dry Density (Kg/m ³)	2362
Sample Moisture (%)	6.90	Optimum Moisture (%)	6.4



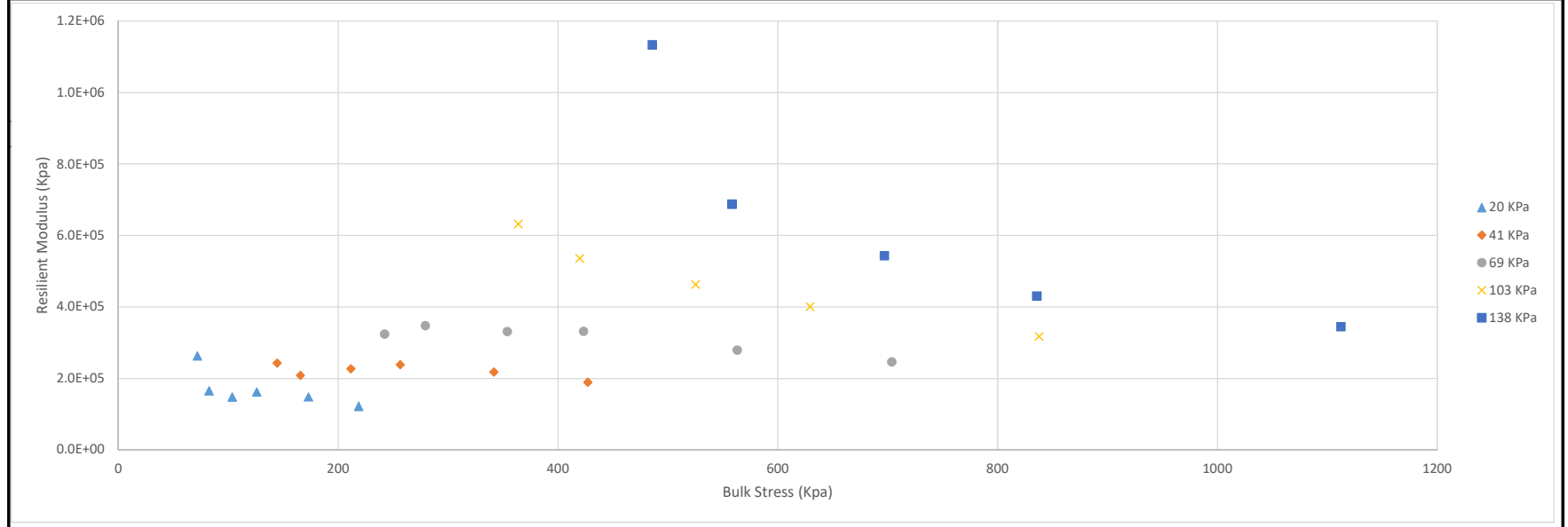
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.6	19.8	34.8	52.7	71.0	20.2	41.3	71.8
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	141	145	197	291	443	115	143	248
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	108.9	143.3	41.9	87.2	145.8	214.4	283.1	64.9
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	380	557	109	181	287	432	543	121
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	132.2	215.5	318.9	422.0	111.3	216.9	355.8	526.8
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	211	316	432	525	143	234	334	428
Sequence No.	25	26	27	28	29	30	K1	1020
Cyclic Stress (KPa)	696.2	156.4	300.3	494.4	732.2	968.6	K2	1.061
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-0.6079
Resilient Modulus (MPa)	544	144	287	359	470	590	MR	171
Tested By	Amin Mneina						R2	0.96
Reviewed By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-1(12.3)	Project	MI Drainable Base
Replicate #	1	Sampled by	MI
Date Tested	19/1/2018	Soil Type	Gravel with 12% fines
Sample Dry Density	2109.55	Max. Dry Density (Kg/m3)	2156
Sample Moisture (%)	9.51	Optimum Moisture (%)	8.70%



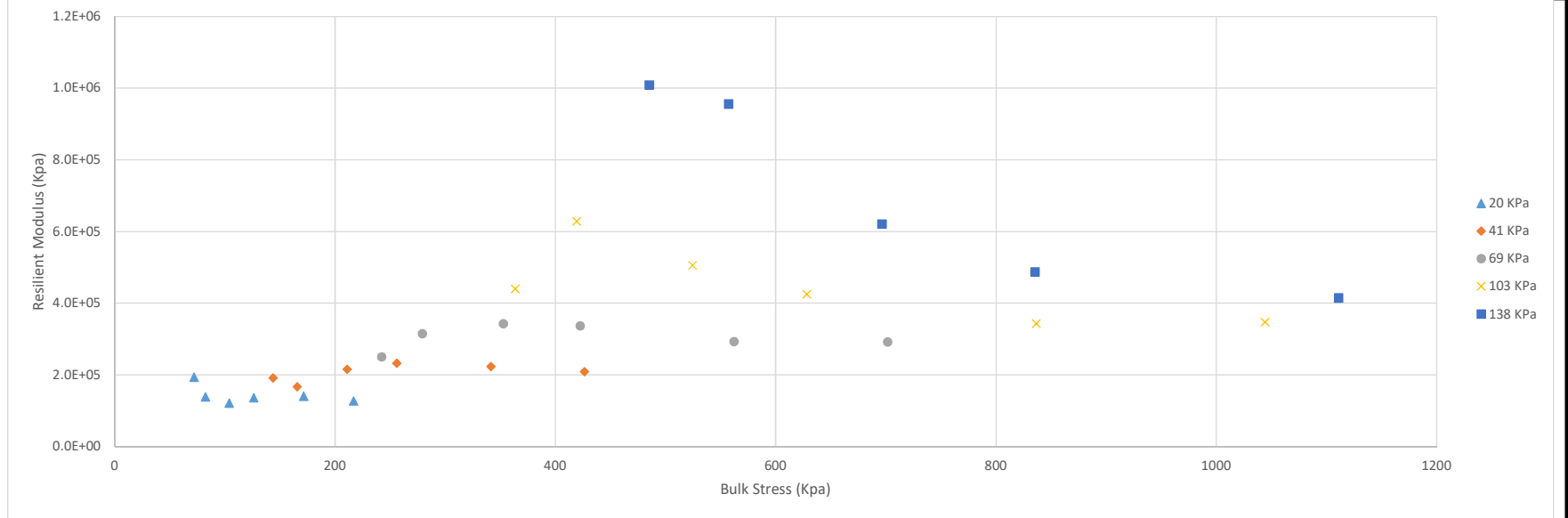
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.7	20.1	35.2	53.3	71.7	20.4	41.4	72.2
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	2.63E+05	2.43E+05	3.24E+05	6.32E+05	1.13E+06	1.65E+05	2.09E+05	3.48E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	109.2	144.3	41.4	87.2	146.7	214.6	283.0	63.7
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	5.36E+05	6.88E+05	1.48E+05	2.27E+05	3.31E+05	4.63E+05	5.44E+05	1.62E+05
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	132.2	216.1	318.7	421.5	110.7	217.5	355.9	527.1
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	2.38E+05	3.32E+05	4.01E+05	4.31E+05	1.48E+05	2.18E+05	2.79E+05	3.17E+05
Sequence No.	25	26	27	28	29	30	K1	1409
Cyclic Stress (KPa)	698.2	156.5	303.0	496.5	-8.3	-15.8	K2	1.468
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-1.842
Resilient Modulus (MPa)	3.45E+05	1.22E+05	1.90E+05	2.46E+05	1.90E+06	9.81E+06	MR	199
Tested By	Amin Mneina						R2	0.96
Review By	Dr. Ahmed Shalaby							

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Pavement Research Group

Resilient Modulus Test Summary

Sample ID	UGM-1(12.3)	Project	MI Drainable Base
Replicate #	2	Sampled by	MI
Date Tested	19/1/2017	Soil Type	Gravel with 12% fines
Sample Dry Density	2139.96	Max. Dry Density (Kg/m3)	2156
Sample Moisture (%)	9.07	Optimum Moisture (%)	8.70%



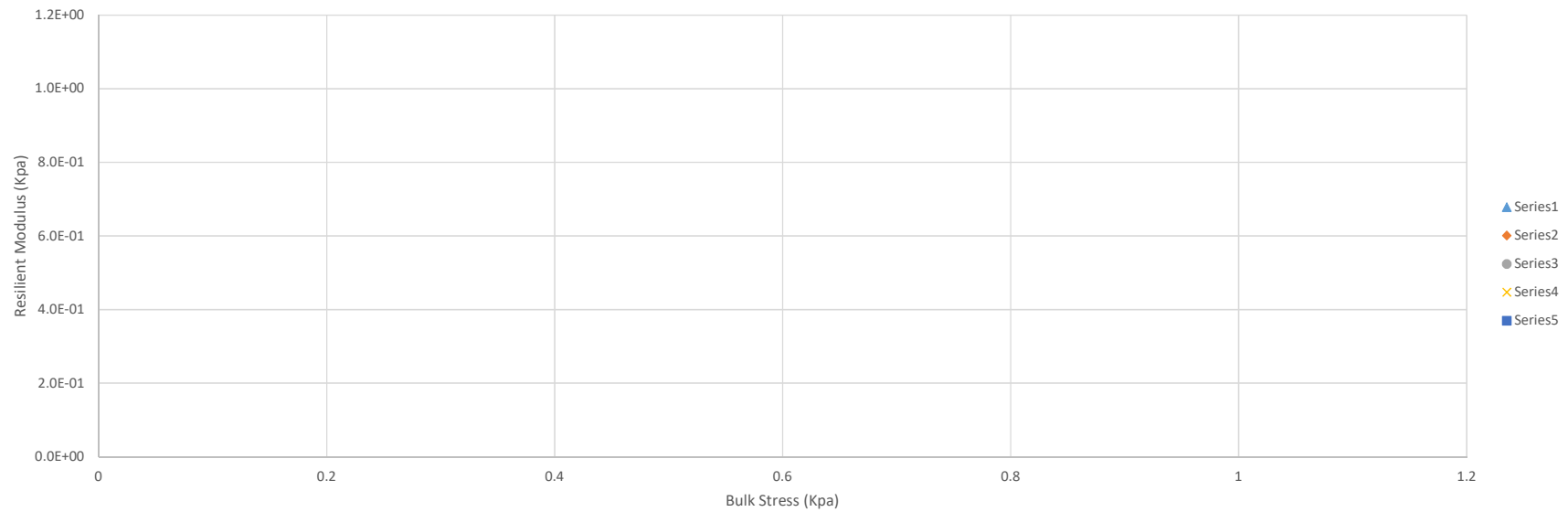
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.8	19.5	35.2	53.0	71.2	20.3	41.4	72.2
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	1.93E+05	1.91E+05	2.50E+05	4.41E+05	1.01E+06	1.39E+05	1.66E+05	3.14E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	109.0	143.4	41.8	86.7	145.7	214.0	282.4	64.1
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	6.29E+05	9.56E+05	1.21E+05	2.15E+05	3.43E+05	5.05E+05	6.21E+05	1.36E+05
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	131.8	215.5	317.6	421.3	109.4	217.2	355.1	526.1
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	2.32E+05	3.37E+05	4.25E+05	4.87E+05	1.40E+05	2.23E+05	2.93E+05	3.43E+05
Sequence No.	25	26	27	28	29	30	K1	1010
Cyclic Stress (KPa)	697.0	154.7	302.2	494.6	733.6		K2	1.83
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5		K3	-2.081
Resilient Modulus (MPa)	4.15E+05	1.27E+05	2.09E+05	2.91E+05	3.47E+05		MR	169
Tested By	Amin Mneina						R2	0.96
Review By	Dr. Ahmed Shalaby							

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Pavement Research Group

Resilient Modulus Test Summary

Sample ID	UGM-1(12.3)	Project	MI Drainable Base
Replicate #	OMC+2%	Sampled by	MI
Date Tested	5/7/2018	Soil Type	Gravel with 12% fines
Sample Dry Density	2101.53	Max. Dry Density (Kg/m3)	2156
Sample Moisture (%)	11.21	Optimum Moisture (%)	8.70%



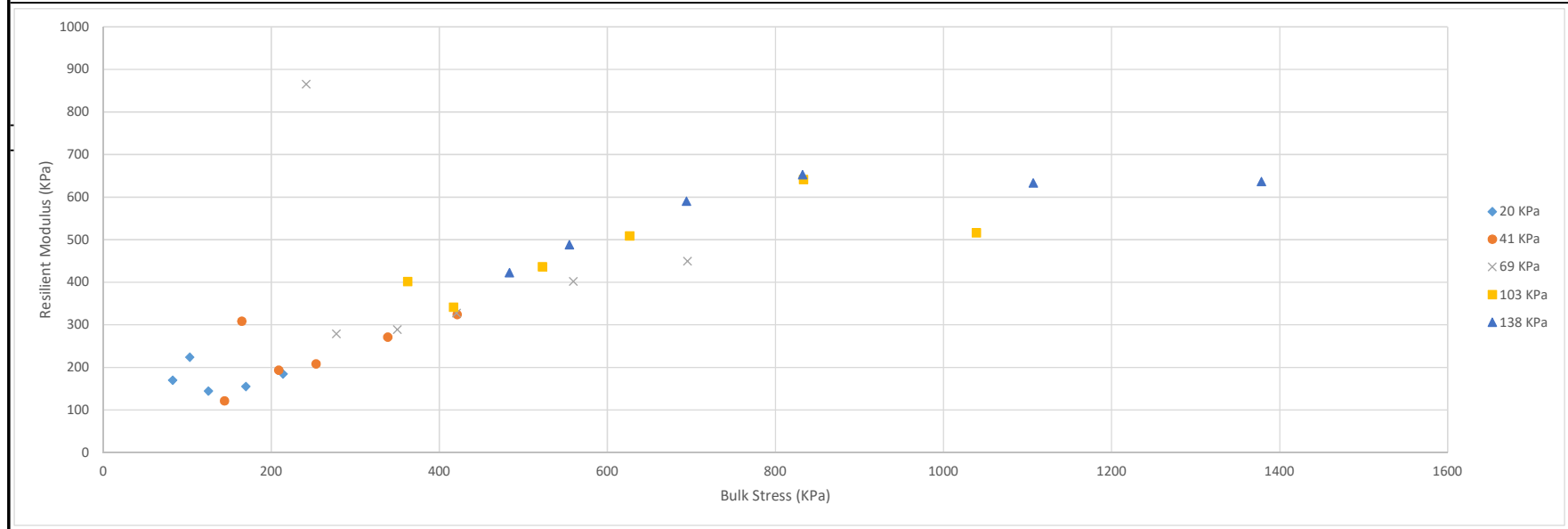
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)								
Confining Pressure (KPa)								
Resilient Modulus (MPa)								
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)								
Confining Pressure (KPa)								
Resilient Modulus (MPa)								
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)								
Confining Pressure (KPa)								
Resilient Modulus (MPa)								
Sequence No.	25	26	27	28	29	30	K1	
Cyclic Stress (KPa)							K2	
Confining Pressure (KPa)							K3	
Resilient Modulus (MPa)							MR	
Tested By	Amin Mneina						R2	
Reviewd By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-2(3.5)	Project	Design Parameters and Specifications of UGM
Replicate #	2	Sampled by	Yukon Department of Highways and Public Works
Date Tested	6/10/2017	Soil Type	Gravel with 3.5% fines
Sample Dry Density	2204	Max. Dry Density (Kg/m3)	2206
Sample Moisture (%)	6.7	Optimum Moisture (%)	9



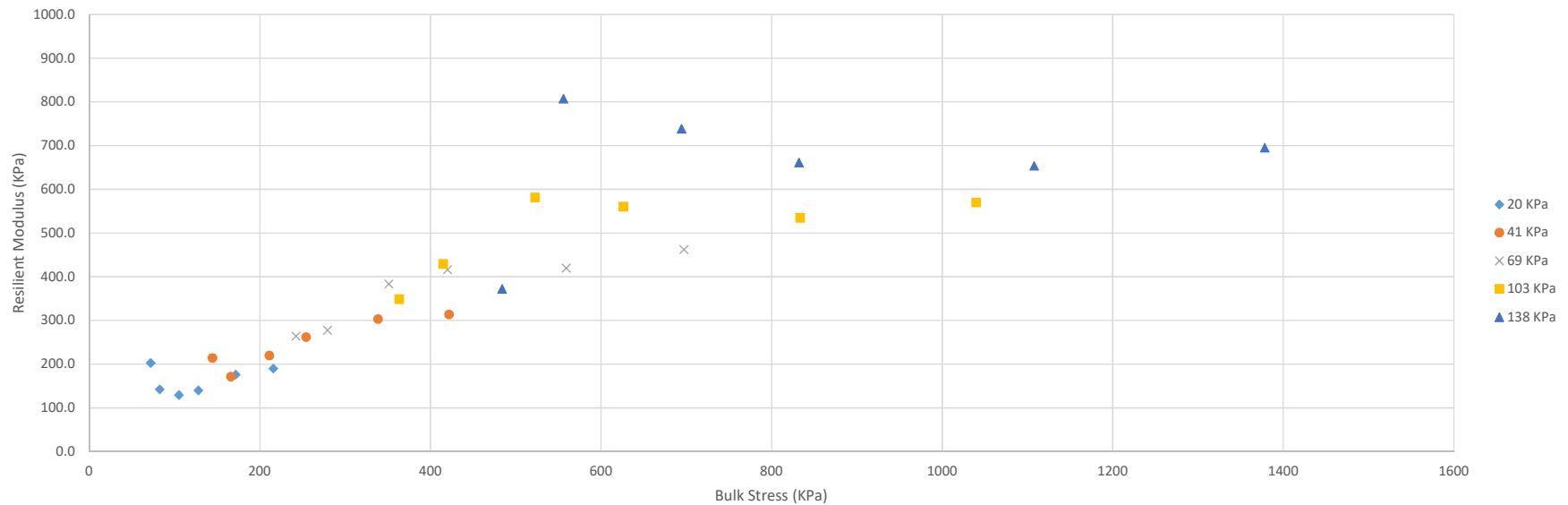
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	10.7	20.3	34.6	52.0	69.5	20.7	40.8	70.6
Confining Pressure (KPa)	20.7	41.4	69	103.5	138	20.7	41.4	69
Resilient Modulus (MPa)	2195	121.3	865.4	401.6	422.5	170.1	308.5	279.1
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	106.4	140.8	41.1	84.8	143.0	212.3	280.2	63.3
Confining Pressure (KPa)	103.5	138	20.7	41.4	69	103.5	138	20.7
Resilient Modulus (MPa)	341.3	488.3	223.9	193.6	289.1	436.3	590.0	144.4
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	129.1	213.7	316.1	418.4	107.8	214.6	352.6	523.1
Confining Pressure (KPa)	41.4	69	103.5	138	20.7	41.4	69	103.5
Resilient Modulus (MPa)	208.2	327.2	509.0	652.6	155.1	271.2	402.1	515.7
Sequence No.	25	26	27	28	29	30	K1	1309
Cyclic Stress (KPa)	693.0	152.0	297.2	488.3	728.5	964.4	K2	0.8805
Confining Pressure (KPa)	138	20.7	41.4	69	103.5	138	K3	-0.374
Resilient Modulus (MPa)	633.2	184.6	324.4	449.4	641.4	636.6	MR	215
Tested By	Amin Mneina						R2	0.91
Reviewd By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-2(3.5)	Project	Design Parameters and Specifications of UGM
Replicate #	3	Sampled by	Yukon Department of Highways and Public Works
Date Tested	11/10/2017	Soil Type	Gravel with 3.5% fines
Sample Dry Density	2214	Max. Dry Density (Kg/m3)	2206
Sample Moisture (%)	6.4%	Optimum Moisture (%)	9



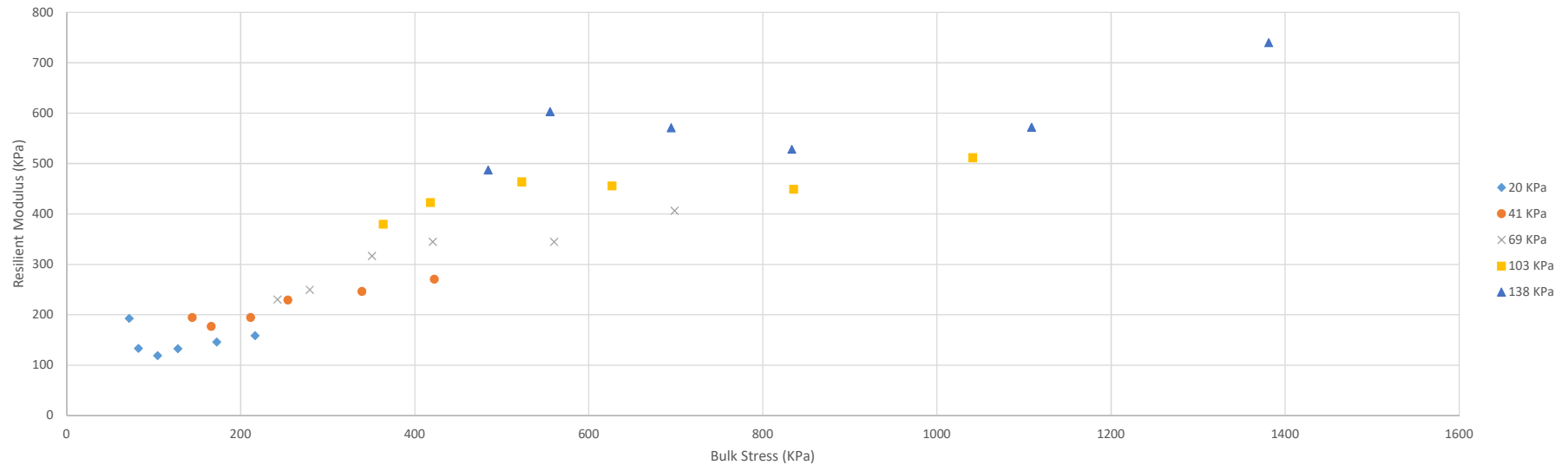
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.8	20.2	35.3	53.0	70.0	20.4	41.8	72.2
Confining Pressure (KPa)	20.7	41.4	69	103.5	138	20.7	41.4	69
Resilient Modulus (MPa)	202.6	214.4	264.0	348.5	371.9	142.1	171.3	277.4
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	104.3	142.0	42.9	87.0	144.2	212.0	280.2	65.7
Confining Pressure (KPa)	103.5	138	20.7	41.4	69	103.5	138	20.7
Resilient Modulus (MPa)	429.4	807.2	129.5	219.8	383.6	581.4	738.1	139.8
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	129.8	213.1	315.6	418.0	109.4	214.4	352.2	523.0
Confining Pressure (KPa)	41.4	69	103.5	138	20.7	41.4	69	103.5
Resilient Modulus (MPa)	261.8	416.2	560.0	661.0	176.0	303.0	419.6	535.0
Sequence No.	25	26	27	28	29	30	K1	1275
Cyclic Stress (KPa)	693.8	153.8	297.4	490.1	729.1	964.1	K2	1.12
Confining Pressure (KPa)	138	20.7	41.4	69	103.5	138	K3	-0.7147
Resilient Modulus (MPa)	654.0	190.0	313.7	462.1	569.7	695.0	MR	218
Tested By	Amin Mneina						R2	0.93
Reviewd By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-2(6.4)	Project	Design Parameters and Specifications of UGM
Replicate #	1	Sampled by	Yukon Department of Highways and Public Works
Date Tested	5/10/2017	Soil Type	Gravel with 6.4% fines
Sample Dry Density	2320	Max. Dry Density (Kg/m3)	2287
Sample Moisture (%)	7.3	Optimum Moisture (%)	8.5



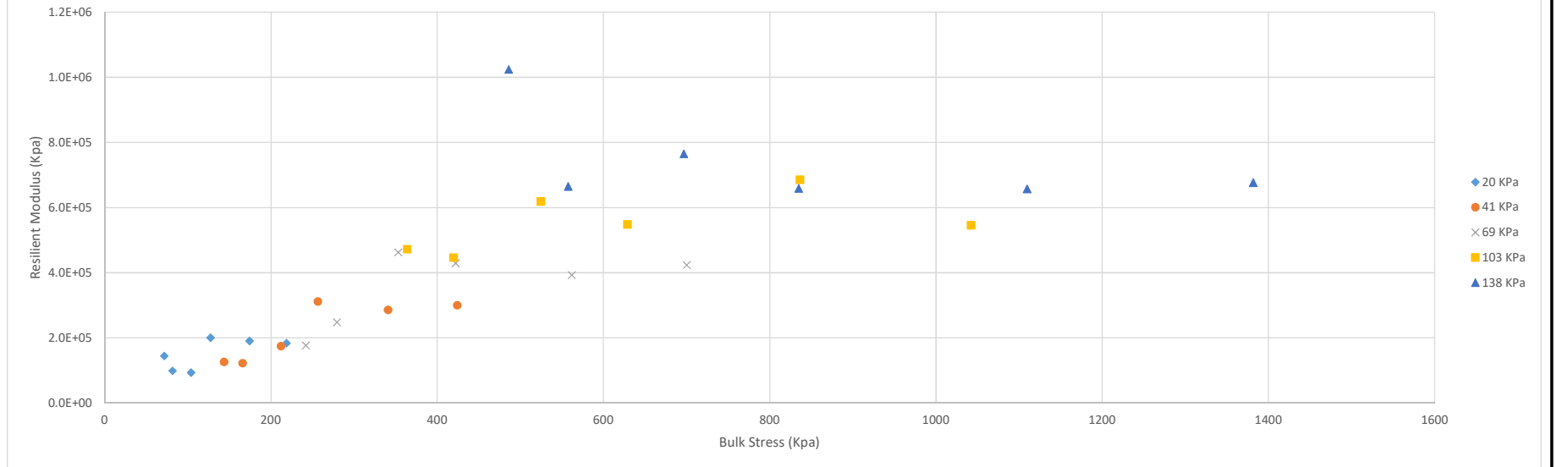
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.8	20.2	35.3	53.4	70.4	20.5	42.1	72.5
Confining Pressure (KPa)	20.7	41.4	69	103.5	138	20.7	41.4	69
Resilient Modulus (MPa)	193	194.8	230.2	379.9	487.3	133.6	177.3	249.9
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	107.5	141.6	42.6	87.3	144	212.7	280.7	65.9
Confining Pressure (KPa)	103.5	138	20.7	41.4	69	103.5	138	20.7
Resilient Modulus (MPa)	422.8	602.9	119.3	194.8	317.1	464	571.4	133
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	130.2	213.8	316.4	419.3	110.6	215.2	353.2	524.9
Confining Pressure (KPa)	41.4	69	103.5	138	20.7	41.4	69	103.5
Resilient Modulus (MPa)	229.5	345.2	456	528.5	146.3	246.7	344.9	449.7
Sequence No.	25	26	27	28	29	30	K1	1096
Cyclic Stress (KPa)	694.8	154.6	298.3	491.7	730.5	967.2	K2	1.151
Confining Pressure (KPa)	138	20.7	41.4	69	103.5	138	K3	-0.7764
Resilient Modulus (MPa)	571.9	158.8	270.9	406.9	512	740	MR	187
Tested By	Amin Mneina						R2	0.97
Reviewed By	Dr. Ahmed Shalaby							

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Pavement Research Group

Resilient Modulus Test Summary

Sample ID	UGM-3(7.1)	Project	MI Drainable Base
Replicate #	3	Sampled by	MI
Date Tested	5/2/2018.	Soil Type	Limestone with 7.1% fines
Sample Dry Density	2220.95	Max. Dry Density (Kg/m3)	2226
Sample Moisture (%)	6.71	Optimum Moisture (%)	6.90%



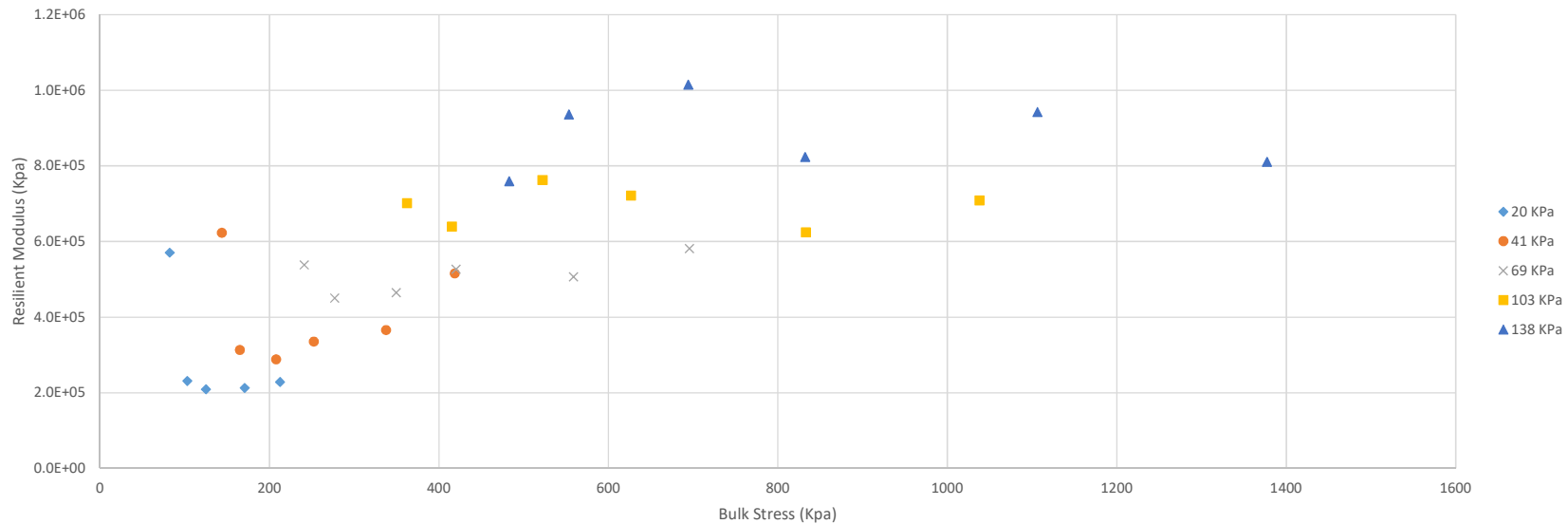
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.7	19.4	35.0	53.5	72.1	19.6	41.6	72.5
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	1.4E+05	1.3E+05	1.8E+05	4.7E+05	1.0E+06	9.9E+04	1.2E+05	2.5E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	109.2	143.6	41.8	88.0	146.3	214.2	282.7	65.4
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	4.5E+05	6.6E+05	9.3E+04	1.7E+05	4.6E+05	6.2E+05	7.6E+05	2.0E+05
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	132.1	215.2	318.3	420.9	112.2	216.6	355.0	525.8
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	3.1E+05	4.3E+05	5.5E+05	6.6E+05	1.9E+05	2.9E+05	3.9E+05	6.9E+05
Sequence No.	25	26	27	28	29	30	K1	1073
Cyclic Stress (KPa)	695.7	156.7	300.0	493.2	731.6	967.6	K2	1.375
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-1.002
Resilient Modulus (MPa)	6.6E+05	1.8E+05	3.0E+05	4.2E+05	5.5E+05	6.8E+05	MR	198
Tested By	Amin Mneina						R2	0.91
Reviewed By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-4(3.3)	Project	MI Drainable Base
Replicate #	1	Sampled by	MI
Date Tested	24/1/2017	Soil Type	Gravel with 3.3% fines
Sample Dry Density	2257.77	Max. Dry Density (Kg/m3)	2220
Sample Moisture (%)	8.81	Optimum Moisture (%)	7.80%



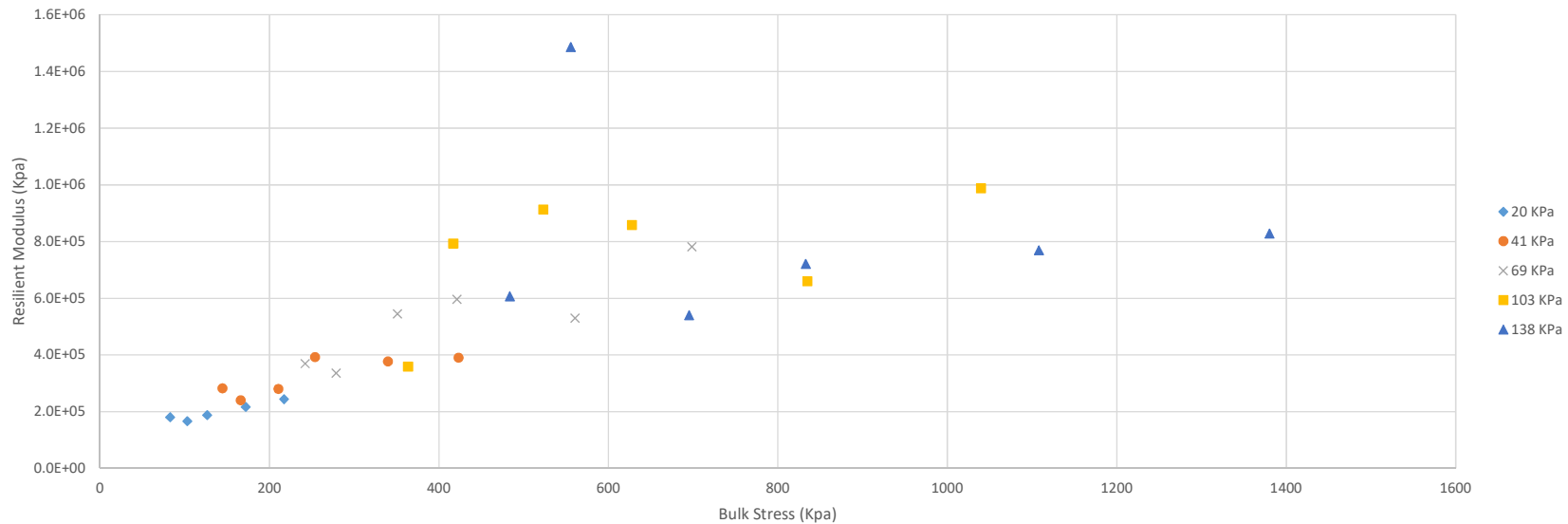
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)		19.5	34.1	51.8	68.8	20.1	40.6	69.8
Confining Pressure (KPa)		41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)		6.2E+05	5.4E+05	7.0E+05	7.6E+05	5.7E+05	3.1E+05	4.5E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	104.8	139.3	40.9	83.6	142.4	211.6	280.1	62.7
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	6.4E+05	9.4E+05	2.3E+05	2.9E+05	4.6E+05	7.6E+05	1.0E+06	2.1E+05
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	128.1	213.0	316.0	418.1	108.5	213.2	351.7	522.3
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	3.4E+05	5.3E+05	7.2E+05	8.2E+05	2.1E+05	3.7E+05	5.1E+05	6.2E+05
Sequence No.	25	26	27	28	29	30	K1	1817
Cyclic Stress (KPa)	692.3	150.3	294.4	488.3	727.3	963.0	K2	1.189
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-0.9189
Resilient Modulus (MPa)	9.4E+05	2.3E+05	5.2E+05	5.8E+05	7.1E+05	8.1E+05	MR	302
Tested By	Amin Mneina						R2	0.92
Review By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-4(3.3)	Project	MI Drainable Base
Replicate #	2	Sampled by	MI
Date Tested	26/1/2017	Soil Type	Gravel with 3.3% fines
Sample Dry Density	2225.25	Max. Dry Density (Kg/m3)	2220
Sample Moisture (%)	7.44	Optimum Moisture (%)	7.80%



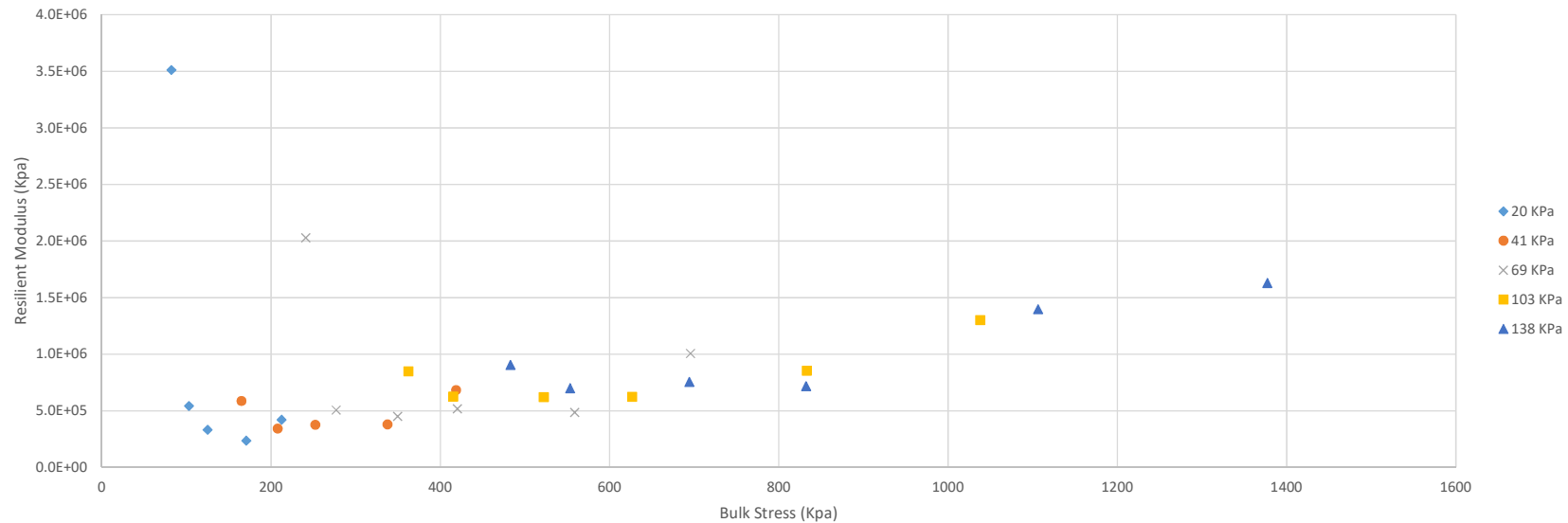
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.8	20.2	35.1	53.0	69.6	20.4	41.8	71.6
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	4.2E+05	2.8E+05	3.7E+05	3.6E+05	6.1E+05	1.8E+05	2.4E+05	3.4E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	106.3	141.6	40.8	86.2	143.8	212.5	281.0	64.4
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	7.9E+05	1.5E+06	1.7E+05	2.8E+05	5.5E+05	9.1E+05	5.4E+05	1.9E+05
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	129.4	214.0	317.1	418.8	109.7	215.6	353.3	524.0
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	3.9E+05	6.0E+05	8.6E+05	7.2E+05	2.2E+05	3.8E+05	5.3E+05	6.6E+05
Sequence No.	25	26	27	28	29	30	K1	1912
Cyclic Stress (KPa)	693.9	155.1	298.9	491.4	729.1	966.0	K2	0.731
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-0.2583
Resilient Modulus (MPa)	7.7E+05	2.4E+05	3.9E+05	7.8E+05	9.9E+05	8.3E+05	MR	296
Tested By	Amin Mneina						R2	0.92
Review By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-4(7.8)	Project	MI Drainable Base
Replicate #	1	Sampled by	MI
Date Tested	5/7/2017	Soil Type	Limestone with 7.8% fines
Sample Dry Density	2257.77	Max. Dry Density (Kg/m3)	2220
Sample Moisture (%)	8.81	Optimum Moisture (%)	6.80%



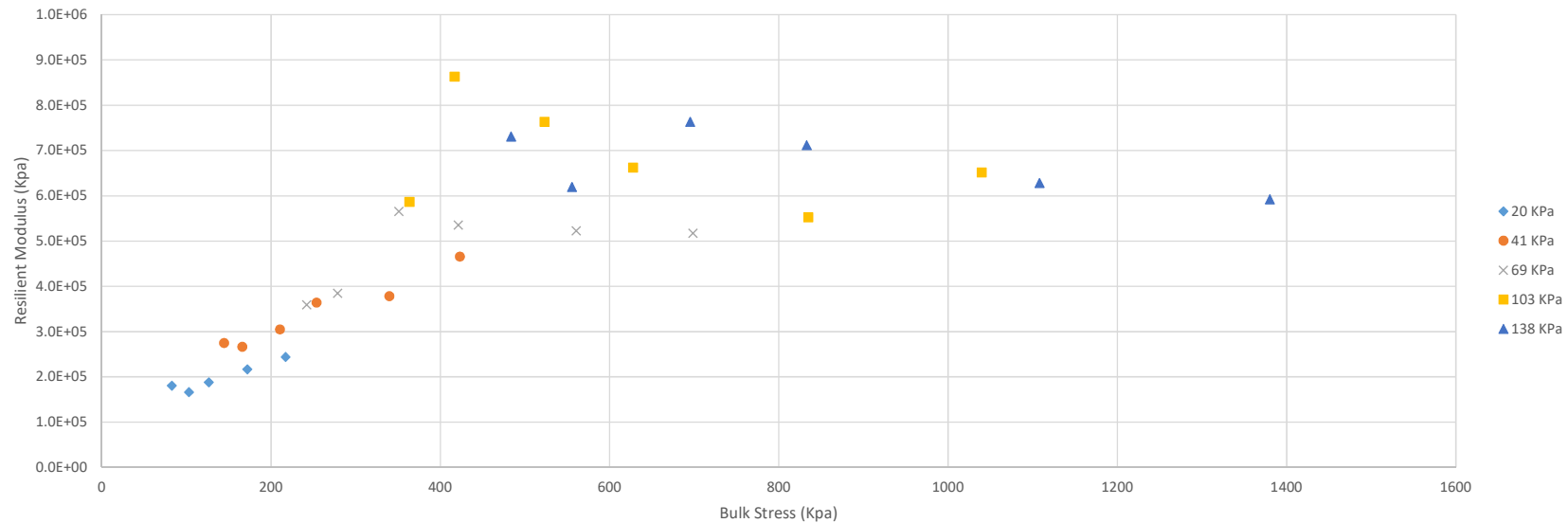
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)			34.1	51.8	68.8	20.1	40.6	69.8
Confining Pressure (KPa)			69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)			2.0E+06	8.5E+05	9.1E+05	3.5E+06	5.9E+05	5.1E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	104.8	139.3	40.9	83.6	142.4	211.6	280.1	62.7
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	6.3E+05	7.0E+05	5.4E+05	3.4E+05	4.5E+05	6.2E+05	7.6E+05	3.3E+05
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	128.1	213.0	316.0	418.1	108.5	213.2	351.7	522.3
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	3.8E+05	5.2E+05	6.3E+05	7.2E+05	2.4E+05	3.8E+05	4.9E+05	8.5E+05
Sequence No.	25	26	27	28	29	30	K1	2318
Cyclic Stress (KPa)	692.3	150.3	294.4	488.3	727.3	963.0	K2	0.6157
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	0.1358
Resilient Modulus (MPa)	1.4E+06	4.2E+05	6.8E+05	1.0E+06	1.3E+06	1.6E+06	MR	385
Tested By	Amin Mneina						R2	0.76
Review By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-4(7.8)	Project	MI Drainable Base
Replicate #	2	Sampled by	MI
Date Tested	26/1/2017	Soil Type	Limestone with 7.8% fines
Sample Dry Density	2059.31	Max. Dry Density (Kg/m3)	2065
Sample Moisture (%)	6.81	Optimum Moisture (%)	6.80%



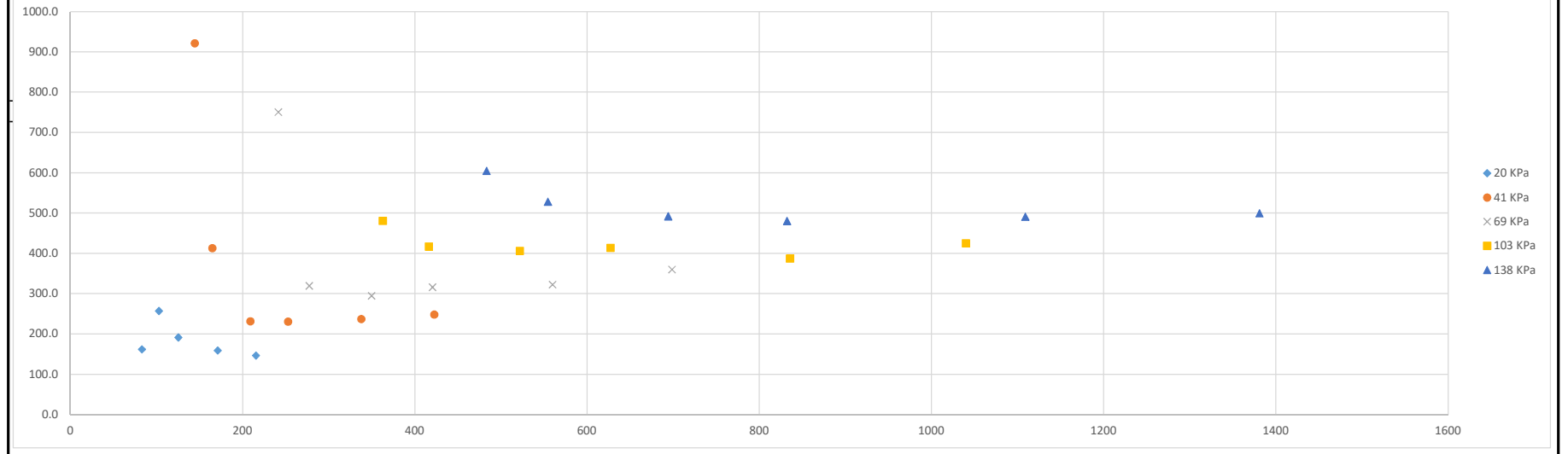
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.8	20.2	35.1	53.0	69.6	20.4	41.8	71.6
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	3.5E+05	2.7E+05	3.6E+05	5.9E+05	7.3E+05	2.4E+05	2.7E+05	3.9E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	106.3	141.6	40.8	86.2	143.8	212.5	281.0	64.4
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	8.6E+05	6.2E+05	1.8E+05	3.1E+05	5.7E+05	7.6E+05	7.6E+05	1.9E+05
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	129.4	214.0	317.1	418.8	109.7	215.6	353.3	524.0
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	3.6E+05	5.4E+05	6.6E+05	7.1E+05	2.4E+05	3.8E+05	5.2E+05	5.5E+05
Sequence No.	25	26	27	28	29	30	K1	2262
Cyclic Stress (KPa)	693.9	155.1	298.9	491.4	729.1	966.0	K2	0.882
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-0.7192
Resilient Modulus (MPa)	6.3E+05	2.1E+05	4.7E+05	5.2E+05	6.5E+05	5.9E+05	MR	326
Tested By	Amin Mneina						R2	0.85
Review By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-3(3.9)	Project	Design Parameters and Specifications of UGM
Replicate #	1	Sampled by	Yukon Department of Highways and Public Works
Date Tested	4/10/2017	Soil Type	Gravel with 3.9% fines
Sample Dry Density	2219	Max. Dry Density (Kg/m3)	2221
Sample Moisture (%)	6.4	Optimum Moisture (%)	9.2



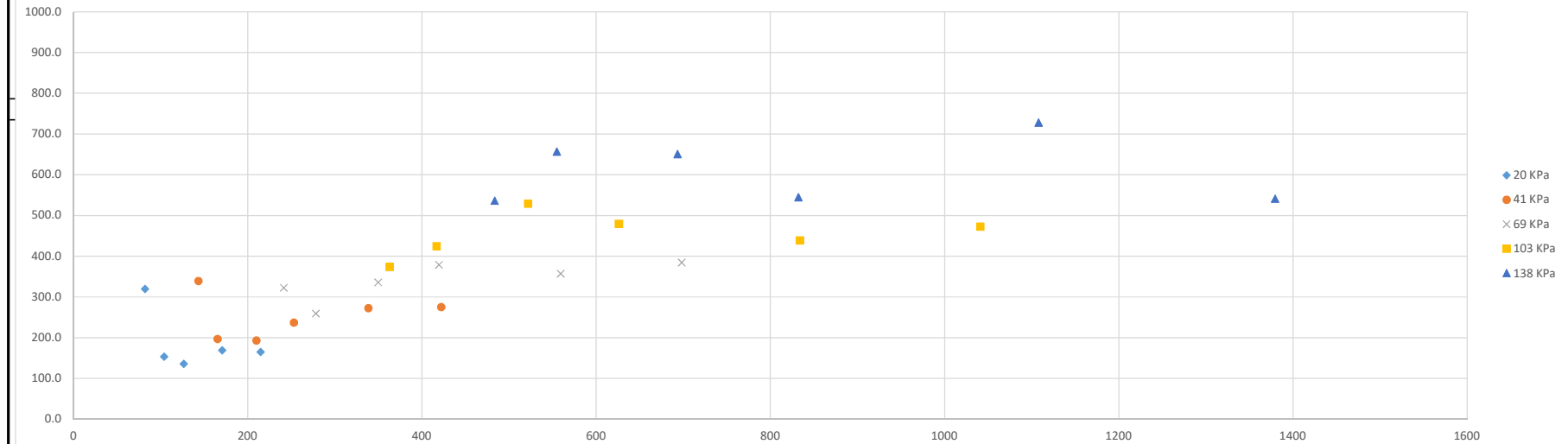
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	10.7	20.2	34.4	52.3	69.4	20.9	40.7	70.5
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	23011.0	921.5	750.4	480.9	604.4	161.7	412.8	319.3
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	105.9	140.6	40.7	84.9	142.7	211.6	280.4	63.4
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	416.5	528.2	257.0	231.4	294.5	406.1	492.0	191.1
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	128.7	213.5	316.9	418.3	108.9	213.6	352.9	525.1
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	230.4	315.9	413.6	480.4	158.9	236.9	322.3	387.3
Sequence No.	25	26	27	28	29	30	K1	1238
Cyclic Stress (KPa)	695.1	153.4	298.3	491.7	729.6	967.1	K2	1.165
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-1.016
Resilient Modulus (MPa)	490.9	146.4	248.1	360.0	424.6	499.6	MR	195
Tested By	Amin Mneina						R2	0.96
Reviewd By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-3(3.9)	Project	Design Parameters and Specifications of UGM
Replicate #	2	Sampled by	Yukon Department of Highways and Public Works
Date Tested	10/10/2017	Soil Type	Gravel with 3.9% fines
Sample Dry Density	2206	Max. Dry Density (Kg/m3)	2221
Sample Moisture (%)	7.1	Optimum Moisture (%)	9.2



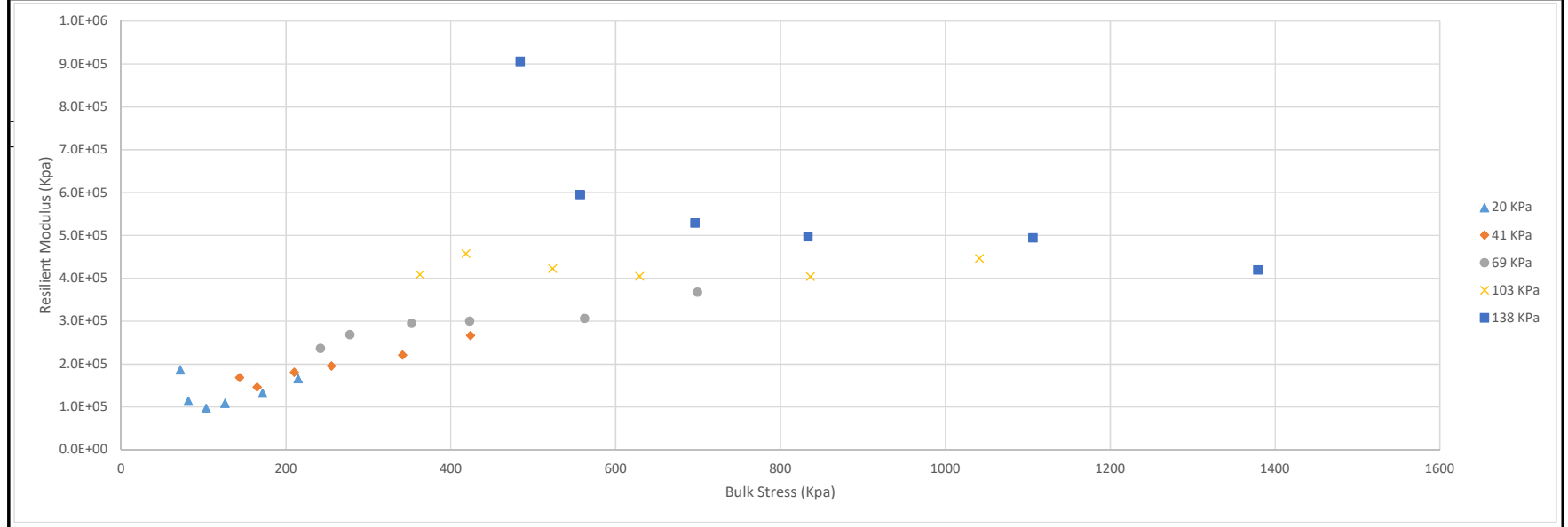
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	10.2	19.4	34.5	52.6	69.6	20.0	41.4	71.3
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	1455.0	339.2	322.4	373.7	536.4	319.6	196.8	259.4
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	106.2	140.9	42.0	85.9	142.8	211.5	279.6	64.5
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	424.6	656.6	153.5	193.1	335.9	529.2	650.6	135.9
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	128.8	212.6	315.6	418.3	108.5	214.3	352.3	523.7
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	237.2	378.9	479.3	544.7	164.9	272.6	357.1	439.0
Sequence No.	25	26	27	28	29	30	K1	1107
Cyclic Stress (KPa)	694.1	152.8	298.0	491.3	730.5	965.5	K2	1.217
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-0.8601
Resilient Modulus (MPa)	541.4	169.2	274.9	384.5	472.5	728.2	MR	192
Tested By	Amin Mneina						R2	0.92
Reviewed By	Dr. Ahmed Shalaby							

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Pavement Research Group

Resilient Modulus Test Summary

Sample ID	UGM-3(6.9)	Project	MI Drainable Base
Replicate #	1	Sampled by	MI
Date Tested	9/2/2017	Soil Type	Gravel with 6.9% fines
Sample Dry Density	2049.97	Max. Dry Density (Kg/m3)	2053
Sample Moisture (%)	10.07	Optimum Moisture (%)	10.10%



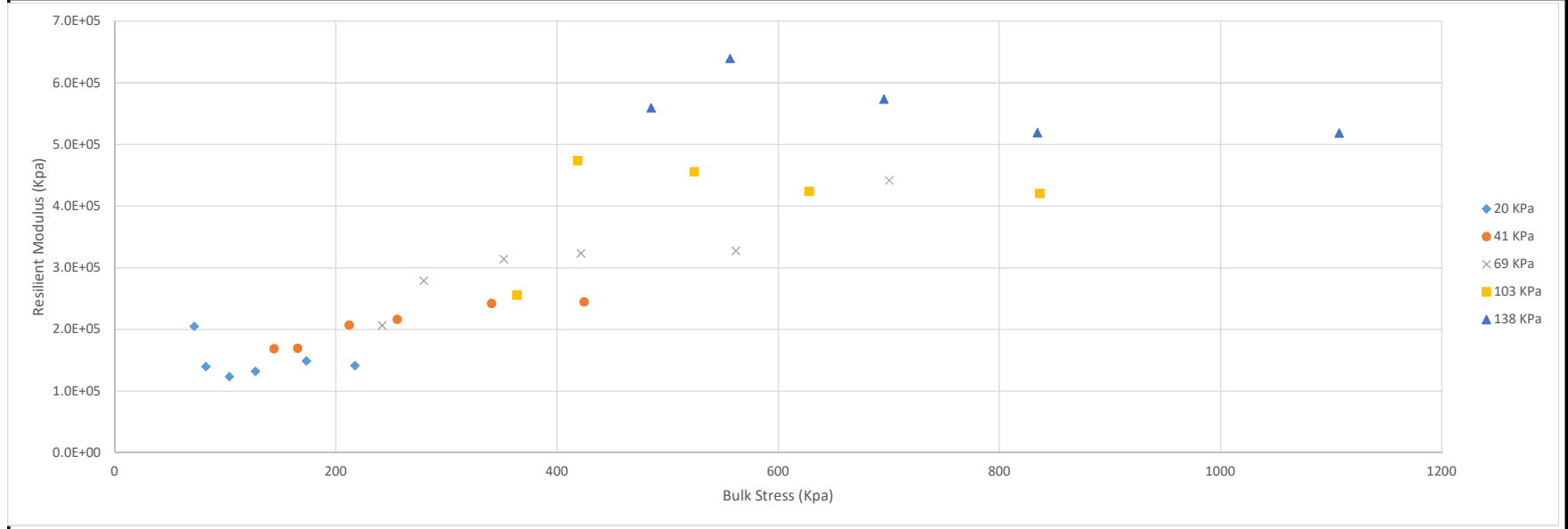
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.6	19.5	34.7	51.7	69.9	19.4	40.6	70.5
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	1.87E+05	1.69E+05	2.37E+05	4.09E+05	9.06E+05	1.14E+05	1.46E+05	2.69E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	107.8	142.8	40.9	85.9	145.4	213.2	281.9	63.7
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	4.58E+05	5.96E+05	9.70E+04	1.81E+05	2.95E+05	4.23E+05	5.29E+05	1.09E+05
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	130.8	215.7	318.5	419.2	109.6	217.1	355.1	525.5
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	1.96E+05	3.00E+05	4.05E+05	4.97E+05	1.32E+05	2.21E+05	3.07E+05	4.04E+05
Sequence No.	25	26	27	28	29	30	K1	1067
Cyclic Stress (KPa)	692.3	152.5	299.5	492.2	730.7	964.9	K2	1.301
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-1.133
Resilient Modulus (MPa)	4.94E+05	1.66E+05	2.67E+05	3.68E+05	4.47E+05	4.20E+05	MR	177
Tested By	Amin Mneina						R2	0.95
Review By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-3(6.9)	Project	MI Drainable Base
Replicate #	2	Sampled by	MI
Date Tested	19/1/2017	Soil Type	Gravel with 6.9% fines
Sample Dry Density	2036.30	Max. Dry Density (Kg/m3)	2053
Sample Moisture (%)	10.66	Optimum Moisture (%)	10.10%



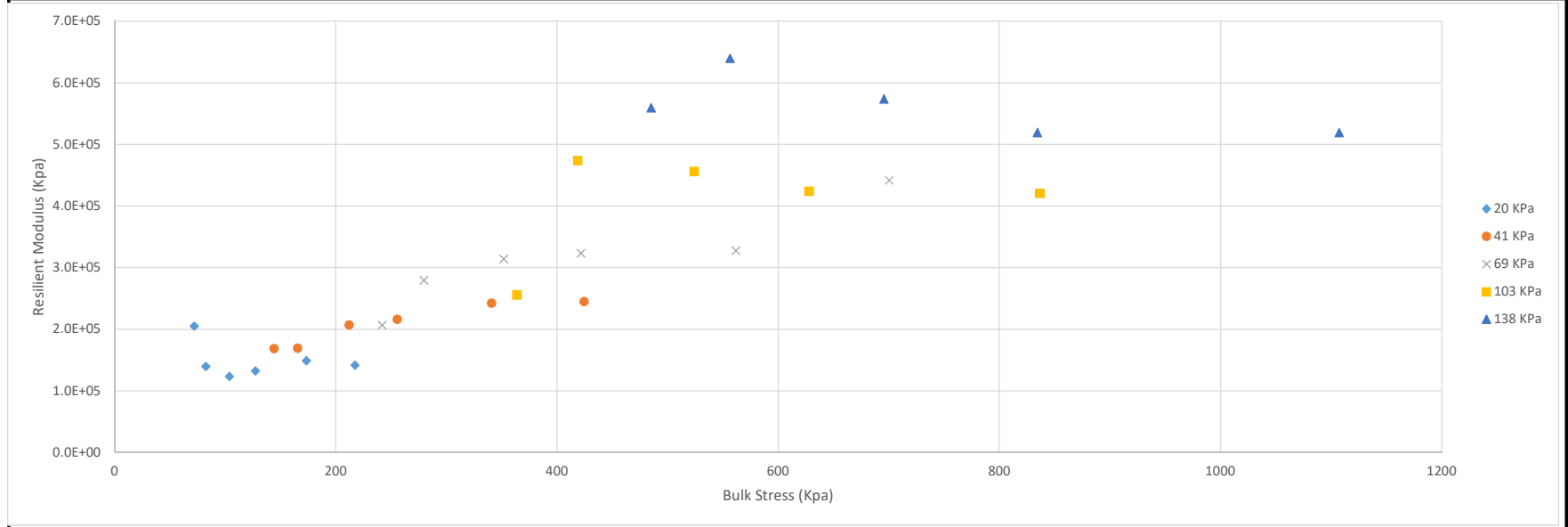
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.7	19.7	34.8	53.1	70.9	20.2	41.1	72.4
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	2.05E+05	1.69E+05	2.07E+05	2.56E+05	5.60E+05	1.40E+05	1.69E+05	2.79E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	107.9	142.3	41.5	87.6	144.6	213.3	281.5	64.9
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	4.74E+05	6.40E+05	1.23E+05	2.07E+05	3.14E+05	4.56E+05	5.74E+05	1.32E+05
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	131.2	214.4	317.3	420.2	111.1	216.5	354.6	525.8
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	2.16E+05	3.23E+05	4.24E+05	5.19E+05	1.49E+05	2.42E+05	3.27E+05	4.21E+05
Sequence No.	25	26	27	28	29	30	K1	1137
Cyclic Stress (KPa)	693.3	155.1	300.1	493.3			K2	1.234
Confining Pressure (KPa)	138.0	20.7	41.4	69.0			K3	-0.9964
Resilient Modulus (MPa)	5.19E+05	1.41E+05	2.45E+05	4.41E+05			MR	189
Tested By	Amin Mneina						R2	0.93
Reviewd By	Dr. Ahmed Shalaby							

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Pavement Research Group

Resilient Modulus Test Summary

Sample ID	UGM-3(6.9)	Project	MI Drainable Base
Replicate #	OMC+2%	Sampled by	MI
Date Tested	5/7/2018	Soil Type	Gravel with 6.9% fines
Sample Dry Density	2018.21	Max. Dry Density (Kg/m3)	2053
Sample Moisture (%)	12.84	Optimum Moisture (%)	10.10%



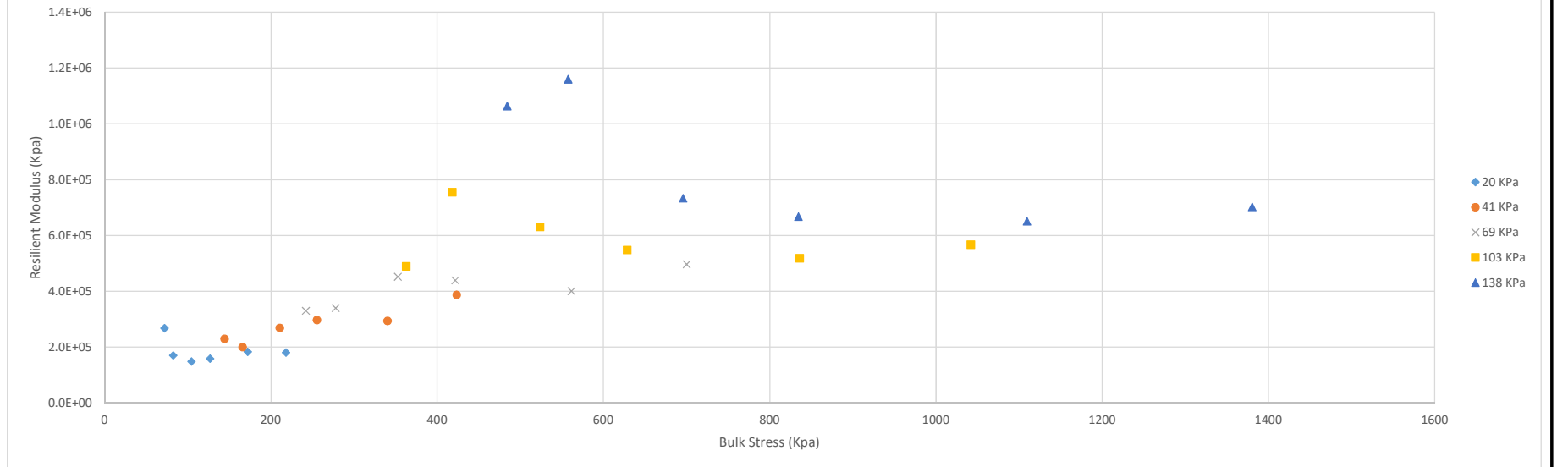
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.7	19.7	34.8	53.1	70.9	20.2	41.1	72.4
Confining Pressure (KPa)	20.7	41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	1.01E+05	1.24E+05	1.82E+05	2.88E+05	4.27E+05	9.00E+04	1.17E+05	1.90E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	107.9	142.3	41.5	87.6	144.6	213.3	281.5	64.9
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	2.90E+05	4.26E+05	8.03E+04	1.34E+05	2.28E+05	3.78E+05	4.51E+05	9.39E+04
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	131.2	214.4	317.3	420.2	111.1	216.5	354.6	525.8
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	1.38E+05	2.30E+05	3.66E+05	4.13E+05	1.08E+05	1.74E+05	2.45E+05	3.39E+05
Sequence No.	25	26	27	28	29	30	K1	689
Cyclic Stress (KPa)	693.3	155.1	300.1	493.3	730.7	964.9	K2	1.322
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-0.9272
Resilient Modulus (MPa)	2.08E+07	2.50E+07	3.36E+08	4.31E+06	2.13E+07	3.78E+07	MR	125
Tested By	Amin Mneina						R2	0.97
Review By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-3(7.1)	Project	MI Drainable Base
Replicate #	1	Sampled by	MI
Date Tested	1/2/2018	Soil Type	Limestone with 7.1% fines
Sample Dry Density	2262.87	Max. Dry Density (Kg/m ³)	2226
Sample Moisture (%)	6.58	Optimum Moisture (%)	6.90%



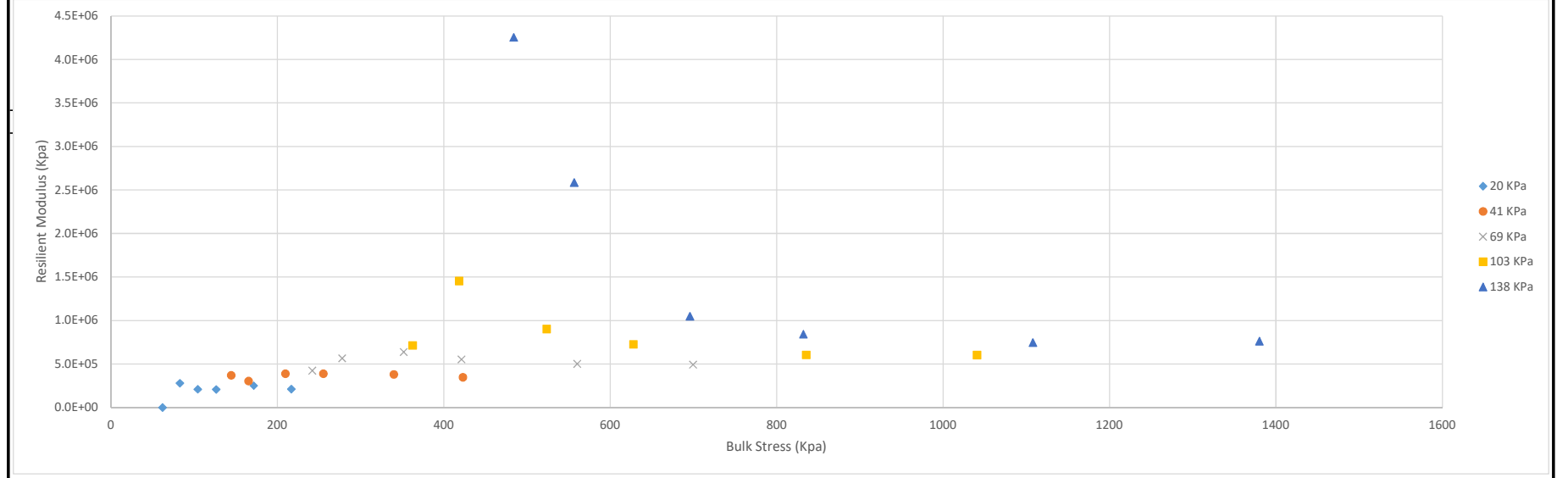
Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)	9.8	19.9	35.0	52.2	70.2	20.4	41.7	70.8
Confining Pressure (KPa)		41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)	267353.1	2.3E+05	3.3E+05	4.9E+05	1.1E+06	1.7E+05	2.0E+05	3.4E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	107.7	143.6	42.4	86.4	145.7	213.2	281.9	64.8
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	7.6E+05	1.2E+06	1.5E+05	2.7E+05	4.5E+05	6.3E+05	7.3E+05	1.6E+05
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	131.2	214.7	318.0	420.6	110.1	216.1	354.4	525.5
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	3.0E+05	4.4E+05	5.5E+05	6.7E+05	1.8E+05	2.9E+05	4.0E+05	5.2E+05
Sequence No.	25	26	27	28	29	30	K1	1388
Cyclic Stress (KPa)	695.4	156.1	299.3	493.1	731.4	966.4	K2	1.521
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-1.461
Resilient Modulus (MPa)	6.5E+05	1.8E+05	3.9E+05	5.0E+05	5.7E+05	7.0E+05	MR	237
Tested By	Amin Mneina						R2	0.93
Reviewed By	Dr. Ahmed Shalaby							

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Resilient Modulus Test Summary

Sample ID	UGM-3(7.1)	Project	MI Drainable Base
Replicate #	2	Sampled by	MI
Date Tested	1/2/2018.	Soil Type	Limestone with 7.1% fines
Sample Dry Density	2231.24	Max. Dry Density (Kg/m3)	2226
Sample Moisture (%)	6.22	Optimum Moisture (%)	6.90%



Sequence No.	1	2	3	4	5	6	7	8
Cyclic Stress (KPa)		20.4	35.1	52.2	70.1	20.9	41.4	70.8
Confining Pressure (KPa)		41.4	69.0	103.5	138.0	20.7	41.4	69.0
Resilient Modulus (MPa)		3.7E+05	4.2E+05	7.1E+05	4.3E+06	2.8E+05	3.0E+05	5.7E+05
Sequence No.	9	10	11	12	13	14	15	16
Cyclic Stress (KPa)	107.9	142.7	42.3	85.6	144.9	213.1	281.8	64.4
Confining Pressure (KPa)	103.5	138.0	20.7	41.4	69.0	103.5	138.0	20.7
Resilient Modulus (MPa)	1.5E+06	2.6E+06	2.1E+05	3.9E+05	6.4E+05	9.0E+05	1.0E+06	2.1E+05
Sequence No.	17	18	19	20	21	22	23	24
Cyclic Stress (KPa)	131.1	214.4	317.5	418.2	109.5	215.9	353.3	525.1
Confining Pressure (KPa)	41.4	69.0	103.5	138.0	20.7	41.4	69.0	103.5
Resilient Modulus (MPa)	3.9E+05	5.5E+05	7.3E+05	8.4E+05	2.5E+05	3.8E+05	5.0E+05	6.0E+05
Sequence No.	25	26	27	28	29	30	K1	831.2
Cyclic Stress (KPa)	694.0	154.7	298.8	492.4	730.3	966.2	K2	3.21
Confining Pressure (KPa)	138.0	20.7	41.4	69.0	103.5	138.0	K3	-4.026
Resilient Modulus (MPa)	7.5E+05	2.1E+05	3.5E+05	4.9E+05	6.0E+05	7.6E+05	MR	176
Tested By	Amin Mneina						R2	0.96
Reviewed By	Dr. Ahmed Shalaby							