DOCKETED	
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Project Title:	Willow Rock Energy Storage Center
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Document Title:	Willow Rock CURE Data Request 2 Response, Attachment DR136-1_Part 5_Appendix D
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Depth Elevation (MSL)				Estimated							Cone	ition of Discontinuities		1							1	Rock Mass Ratio	ıg (RMR) Classifica	ition								(Q-system			
From From Thickn	al ess Lithology	Strength of E		strength of D	ock Quality resignation		int Sets D	Discontinuity	Aperture		Ponnhnore			Weathering /		Groundwater	Strength of	Strength o		Spacing of		Apertur			Weathering /	Croundwater	Pack Mary PMD	Joint Set	Joint	Joint				Stress	Ovelno	Rock Mass Geologica
(ft) To (ft) To (ft) (ft)			toot Dool. In	ntact Rock (psi)	(RQD) Spacing ((ft)	1	Length (ft)	Thickness (mm)	Joint Roughness (Q)	(RMR)	Joint Alteration (Q)	Infilling (RMR)	Alteration	Joint Water (Q)	Conditions	Intact Rock Rating	Intact Ros		ting Discontinu s Rating		ating Rating		Filling Rating	Alteration Rating	Rating R	lating (RMR) Classification	Number (J _e)	Roughness Number (J.)	Alteration Number (J.	Reduction			Reduction Q-valt	Classification	Rating Strength (RMR _m) Index (GS
1752 1762 808 798 10	Qtz Monzonite	9,966			52 0.63	Two joint sets plus	andom joints	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	13	8	2	6	l	6	5	10	58 Fair Rock	6	1	1	1	2021	High Stress, Jointed Rock	4 2.167	Poor	63 58
1762 1772 798 788 10	Qtz Monzonite Otz Monzonite	17.020	R4	10,875	39 0.37	Two joint sets plus		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls	None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8	8	2	6	1	6	5	10	53 Fair Rock	6	1	1	1	2032		4 1.625	Poor	58 53
1772 1782 788 7/8 10 1782 1792 778 768 10	Qtz Monzonite Qtz Monzonite	17,820	R4	10,875	42 0.63	Two joint sets plus Two joint sets plus		10	Closed	Smooth, planar Smooth, planar	Smooth	Softening or low friction clay Unaltered joint walls	Soft filling <5mm None	Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8	8	2	6	i	6	5	10	53 Fair Rock	6	i	1	1	2055	High Stress, Jointed Rock High Stress, Jointed Rock	4 1.750	Poor	58 53
1792 1802 768 758 10	Qtz Monzonite		R4	10,875	56 0.40	Two joint sets plus		10	Closed	Smooth, planar	Smooth	Tightly healed, hard	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	8	2	6	1	6	5	10	58 Fair Rock	6	1	0.75	1	2067	High Stress, Jointed Rock	4 3.111	Poor	63 58
1802 1812 758 748 10 1812 1822 748 738 10	Qtz Monzonite Otz Monzonite		R4 R4	10,875 10.875	24 0.33 74 0.38	Two joint sets plus Two joint sets plus		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Tightly healed, hard Unaltered joint walls	Hard filling <5mm None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	8	2 2	6	i	6	5	10	41 Fair Rock 58 Fair Rock	6	1	0.75	1	2078	High Stress, Jointed Rock High Stress, Jointed Rock	4 1.333	Poor	46 41 63 58
1822 1832 738 728 10	Qtz Monzonite	10,296		.,	61 0.56	Two joint sets plus		10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	13	8	2	6	1	6	5	10	58 Fair Rock	6	1	1	1	2101	High Stress, Jointed Rock	4 2.542	Poor	63 58
1832 1842 728 718 10 1842 1852 718 708 10	Diorite Diorite / Otz Monzonit	12,474	R5	25,375	15 0.43 29 0.20	Two joint sets plus Two joint sets plus		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Unaltered joint walls	None None	Unaltered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	7	12	3 8	8 8	2 2	6	1 1	6	6	10	49 Fair Rock 58 Fair Rock	6	1	1	1	2113 2124	High Stress, Jointed Rock Medium Stress	4 0.625 1 4.833	Very Poor Fair	54 49 63 58
1852 1862 708 698 10	Qtz Monzonite		R4	10,875	25 0.38	Two joint sets plus	andom joints	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8	8	2	6	i	6	5	10	53 Fair Rock	6	1	i	1	2136	High Stress, Jointed Rock	4 1.042	Poor	58 53
1862 1872 698 688 10	Qtz Monzonite Otz Monzonite	18,920	D.4	10.875	50 0.45	Two joint sets plus Two joint sets plus		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	13	8	2	6	1	6	5	10	63 Good Rock	6	1	1	1	2147	High Stress, Jointed Rock High Stress, Jointed Rock	2 4.167	Fair	68 63
1882 1892 678 668 10	Qtz Monzonite		R4	10,875	16 0.33	Two joint sets plus		10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	3	8	2	6	i	6	5	10	48 Fair Rock	6	i	i	i	2170	High Stress, Jointed Rock	4 0.667	Very Poor	53 48
1892 1902 668 658 10	Qtz Monzonite Otz Monzonite		R3	4,550 4,550	10 0.56	Two joint sets plus		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Slightly altered joint walls Unaltered joint walls	None None	Moderately altered Unaltered	Dry excavations or minor inflow (humid or a few drips) Medium inflow, occasional outwash of joint fillings (many drips/"rain"	Dump	0	4	3	8	2	6	1	6	3	10	43 Fair Rock	6	1	2	1	2182	High Stress, Jointed Rock High Stress, Jointed Rock	14 0.060	Extremely Poor Very Poor	48 43
1912 1912 648 638 10	Qtz Monzonite Qtz Monzonite		R4	10,875	51 0.33	Two joint sets plus Two joint sets plus		10	Closed	Smooth, planar Smooth, planar	Smooth	Slightly altered joint walls	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	8	2	6	i	4	5	10	56 Fair Rock	6	i	2	1	2193	High Stress, Jointed Rock	4 1.063	Poor	61 56
1922 1932 638 628 10	Qtz Monzonite		R4	10,875	71 0.77	Two joint sets plus		10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	10	2	6	1	6	5	10	60 Fair Rock	6	1	1	1	2216	High Stress, Jointed Rock	4 2.958	Poor	65 60
1932 1942 628 618 10 1942 1952 618 608 10	Qtz Monzonite Otz Monzonite	17,783	R4	10.875	61 0.53 56 0.56	Two joint sets plus Two joint sets plus		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Slightly altered joint walls Slightly altered joint walls	Hard filling <5mm Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	7	13	8 8	2 2	6	1 1	4	5	10	61 Good Rock 56 Fair Rock	6	1	2 2	1	2228	High Stress, Jointed Rock High Stress, Jointed Rock	2 2.542 4 1.167	Poor	66 61
1952 1962 608 598 10	Qtz Monzonite		R4	10,875	34 0.20	Two joint sets plus	andom joints	10	Closed	Smooth, planar	Smooth	Tightly healed, hard	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8	8	2	6	i	4	5	10	51 Fair Rock	6	1	0.75	1	2251	High Stress, Jointed Rock	4 1.889	Poor	56 51
1962 1972 598 588 10	Qtz Monzonite Otz Monzonite	8,654	D.4	10.875	11 0.22	Two joint sets plus Two joint sets plus		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Unaltered joint walls	None	Unaltered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	3	8	2	6	1	6	6	10	49 Fair Rock	6	1	1	1	2262 2274	High Stress, Jointed Rock High Stress, Jointed Rock	6 0.306	Very Poor	54 49
1982 1992 578 568 10	Qtz Monzonite		R4	10,875	52 0.67	Two joint sets plus		10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	10	2	6	i	6	5	10	60 Fair Rock	6	i	i	i	2285	High Stress, Jointed Rock	4 2.167	Poor	65 60
1992 2002 568 558 10	Qtz Monzonite Otz Monzonite	20.405	R4	10,875	82 0.77	Three joir Three joir		10	Closed	Smooth, planar Smooth, planar	Smooth	Tightly healed, hard Unaltered joint walls	Hard filling <5mm	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	17	10	2	6	1	4	5	10	62 Good Rock	9	1	0.75	1	2297	High Stress, Jointed Rock High Stress, Jointed Rock	4 3.037	Poor Fair	67 62
2002 2012 538 548 10 2012 2022 548 538 10	Qtz Monzonite Qtz Monzonite	20,405	R4	10,875	77 0.43	Three joir		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Tightly healed, hard	Hard filling <5mm Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	17	8	2	6	i	4	5	10	60 Fair Rock	9	i	0.75	1	2308	High Stress, Jointed Rock	4 2.852	Poor	65 60
2022 2032 538 528 10	Qtz Monzonite	12.102	R4	10,875	70 0.77	Three joir		10	Closed	Smooth, planar	Smooth Smooth	Slightly altered joint walls	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	10	2	6	1	4	5	10	58 Fair Rock	9	1	2	1	2331	High Stress, Jointed Rock	4 0.972	Very Poor	63 58
2032 2042 528 518 10 2042 2052 518 508 10	Qtz Monzonite Otz Monzonite	12,102	R4	10.875	96 1.11	Three joir Three joir		10	Closed	Smooth, planar Smooth, planar	Smooth	Tightly healed, hard Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	20 20	15	2 2	6	i	6	5	10	72 Good Rock 67 Good Rock	9	1	0.75	1	2343	High Stress, Jointed Rock High Stress, Jointed Rock	4 3.704	Poor	77 72 67
2052 2062 508 498 10	Qtz Monzonite	20,834		.,	94 1.43	Three joir	sets	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	20	10	2	6	1	6	5	10	72 Good Rock	9	1	1	1	2366	High Stress, Jointed Rock	2 5.222	Fair	77 72
2062 2072 498 488 10	Qtz Monzonite Otz Monzonite	17,449	P.4	10.875	78 0.91 78 0.67	Three joir Three joir		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Slightly altered joint walls	None Soft filling <5mm	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	7	17	10	2	6	1 1	6	5	10	69 Good Rock	9	1	1 2	1	2377	High Stress, Jointed Rock High Stress, Jointed Rock	2 4.333	Fair	74 69
2082 2092 478 468 10	Qtz Monzonite		R4	10,875	81 0.59	Three joir	sets	10	Closed	Smooth, planar	Smooth	Tightly healed, hard	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Dump	0	7	17	8	2	6	i	6	5	10	62 Good Rock	ý	i	0.75	i	2400	High Stress, Jointed Rock	4 3.000	Poor	67 62
2092 2102 468 458 10	Qtz Monzonite Otz Monzonite	16,552	D.4	10,875	77 1.25	Three joir Three joir		10	Closed	Smooth, planar Slickensided, planar	Smooth Slickensided	Tightly healed, hard Slightly altered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	17	10	2	6	1 0	6	5	10	69 Good Rock 63 Good Rock	9	1 0.5	0.75	1	2412 2423	High Stress, Jointed Rock High Stress, Jointed Rock	2 5.704 4 0.549	Fair Very Poor	74 69
2112 2122 448 438 10	Qtz Monzonite		R5	25,375	51 0.38	Three joir		10	Closed	Smooth, planar	Smooth	Tightly healed, hard	Hard filling <5mm	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	12	13	8	2	6	1	4	6	10	62 Good Rock	9	1	0.75	i	2435	Medium Stress	1 7.556	Fair	67 62
2122 2132 438 428 10	Qtz Monzonite Otz Monzonite	24.510	R4	10,875	64 0.53	Three joir		10	Closed Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	8	2	6	1	6	5	10	58 Fair Rock	9	1	1	1	2446	High Stress, Jointed Rock High Stress, Jointed Rock	4 1.778	Poor Fair	63 58
2132 2142 428 418 10 2142 2152 418 408 10	Qtz Monzonite Qtz Monzonite	24,510	R4	10,875	48 0.67	Three joir		10	Closed	Smooth, planar Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8	10	2	6	i	6	5	10	55 Fair Rock	9	i	i	1	2458	High Stress, Jointed Rock	4 1.333	Poor	60 55
2152 2162 408 398 10	Qtz Monzonite		R4	10,875	41 0.34	Three joir	sets	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Dump	0	7	8	8	2	6	1	6	5	10	53 Fair Rock	9	1	1	1	2481	High Stress, Jointed Rock	4 1.139	Poor	58 53
2162 2172 398 388 10	Qtz Monzonite Otz Monzonite	5,610			68 0.40	Three joir Three joir		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	4	0	13	8	2 2	6	1	6	5	10	53 Fair Rock 55 Fair Rock	9	1	1	1	2492	High Stress, Jointed Rock High Stress, Jointed Rock	2 1.167 12 0.630	Very Poor	58 53 60 55
2182 2192 378 368 10	Qtz Monzonite	-,	R4	10,875	74 0.40	Three joir	sets	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	o o	7	13	8	2	6	1	6	5	10	58 Fair Rock	9	i	i	i	2515	High Stress, Jointed Rock	4 2.056	Poor	63 58
2192 2202 368 358 10	Qtz Monzonite Otz Monzonite	13,136	P.4	10.875	91 0.67	Three joir Three joir		10	Closed	Smooth, undulating Smooth, undulating	Slightly rough Slightly rough	Unaltered joint walls Slightly altered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	7	7	20	10	2	6	3	6	5	10	69 Good Rock	9	2	1 2	1	2527 2538	High Stress, Jointed Rock High Stress, Jointed Rock	4 5.056	Fair	74 69
2212 2222 348 338 10	Qtz Monzonite	13,570		.,	94 1.00	Three joir		10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	ó	20	10	2	6	í	6	5	10	67 Good Rock	ý	î	î	i	2550	High Stress, Jointed Rock	4 2.611	Poor	72 67
2222 2232 338 328 10	Qtz Monzonite Qtz Monzonite	18 172	R4	10,875	92 0.71	Three joir Three joir		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	0	7	20	10	2	6	1	6	5	10	67 Good Rock	9	1	1	1	2561 2573	High Stress, Jointed Rock High Stress, Jointed Rock	4 2.556	Poor	72 67 63 58
2242 2252 318 308 10	Qtz Monzonite	19,149			81 1.11	Three joir	sets	10	Closed	Smooth, planar	Smooth	Slightly altered joint walls	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	17	10	2	6	i	4	5	10	67 Good Rock	ý	i	2	i	2584	High Stress, Jointed Rock	2 2.250	Poor	72 67
2252 2262 308 298 10	Qtz Monzonite Otz Monzonite	6.820	R3	4,550	72 0.59 38 0.33	Three joir Three joir		10	Closed	Smooth, undulating Smooth, planar	Slightly rough Smooth	Unaltered joint walls Slightly altered joint walls	None Hard filling <5mm	Unaltered Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Dump	0	4	13	8	2	6	3	6	6	10	58 Fair Rock	9	2	1	1	2596	High Stress, Jointed Rock High Stress, Jointed Rock	16 1.000	Poor Very Poor	63 58
2272 2282 288 278 10	Qtz Monzonite	0,820	R4	10,875	18 0.43	Three joir		10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	3	8	2	6	i	6	6	10	49 Fair Rock	9	i	1	1	2619	High Stress, Jointed Rock	6 0.333		54 49
2282 2292 278 268 10	Qtz Monzonite Otz Monzonite	500	R4	10,875	84 0.67	Three joir Three joir		10	Closed Closed	Smooth, planar Smooth, planar	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	17	10	2	6	1	6	6	10	65 Good Rock	9	1	1	1	2630	High Stress, Jointed Rock High Stress, Jointed Rock	6 1.556 20 0.156	Poor Very Poor	70 65
2302 2312 258 248 10	Otz Monzonite	382	R4	10.875	71 0.56	Three joir		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Slightly altered joint walls Unaltered joint walls	Hard filling <5mm None	Moderately altered Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	8	2	6	i	6	6	10	59 Fair Rock	9	i	1	1	2653	High Stress, Jointed Rock	6 1,315	Poor	64 59
2312 2322 248 238 10	Qtz Monzonite	2,442		.,	68 0.25	Three joir		10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	2	0	13	8	2	6	1	6	6	10	54 Fair Rock	9	1	1	1	2665	High Stress, Jointed Rock	20 0.378	Very Poor	59 54
2322 2332 238 228 10 2332 2342 228 218 10	Qtz Monzonite Otz Monzonite	2,990 3.805			56 0.91 51 0.56	Three joir Three joir		10	Closed Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Unaltered joint walls	None None	Unaltered Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	2 4	0	13	10	2 2	6	1 1	6	6	10	56 Fair Rock 56 Fair Rock	9	1	1	1	2676 2688	High Stress, Jointed Rock High Stress, Jointed Rock	20 0.311	Very Poor Very Poor	61 56
2342 2352 218 208 10	Qtz Monzonite	16,170			64 0.33	Three joir	sets	10	Closed	Smooth, undulating	Slightly rough	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	13	8	2	6	3	6	6	10	66 Good Rock	9	2	i	i	2699	High Stress, Jointed Rock	2 7.111	Fair	71 66
2352 2362 208 198 10 2362 2372 198 188 10	Qtz Monzonite Otz Monzonite	22,117			39 0.48	Three joir Three joir		10	Closed Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Unaltered joint walls	None None	Unaltered Slightly weathered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8	8	2	6	1	6	6	10	59 Fair Rock 63 Good Rock	9	1	1	1	2711 2722	High Stress, Jointed Rock High Stress, Jointed Rock	2 2.167 2 2.833	Poor	64 59
2372 2382 188 178 10	Qtz Monzonite	20,900	R4	10,875	17 0.48	Three joir		10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	3	8	2	6	i	6	6	10	49 Fair Rock	9	i	i	1	2734	High Stress, Jointed Rock	6 0.315	Very Poor	54 49
2382 2392 178 168 10	Qtz Monzonite	12,604	D.4	10.875	71 0.40	Three joir		10	Closed	Smooth, planar	Smooth	Slightly altered joint walls	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	13	8	2	6	1	4	5	10	56 Fair Rock	9	1	2	1	2745 2757	High Stress, Jointed Rock	4 0.986 6 0.778	Very Poor	61 56
2402 2412 158 158 10 2402 2412 158 148 10	Qtz Monzonite Otz Monzonite		R4	10,875	42 0.40 59 0.34	Three joir Three joir		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	8	2 2	6	l i	6	5	10	55 Fair Rock 58 Fair Rock	9	1	i	1	2757	High Stress, Jointed Rock High Stress, Jointed Rock	6 1.093	Very Poor Poor	63 58
2412 2422 148 138 10	Qtz Monzonite	5,349			70 0.83	Three joir	sets	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	4	0	13	10	2	6	i	6	6	10	58 Fair Rock	9	i	i	1	2780	High Stress, Jointed Rock	14 0.556	Very Poor	63 58
2422 2432 138 128 10 2432 2442 128 118 10	Qtz Monzonite Otz Monzonite	28,182	R4	10,875	67 0.91 85 0.63	Three joir Three joir		10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Unaltered joint walls	None None	Unaltered Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	0 7	13	10	2 2	6	1	6	6	10	66 Good Rock 63 Good Rock	9	1	1	1	2791	Medium Stress High Stress Tointed Rock	1 7.444 6 1.574	Fair	71 66 68 63
2442 2452 118 108 10	Qtz Monzonite	27,060			80 0.77	Three joir	sets	10	Closed	Rough, irregular, planar	Slightly rough	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	ó	17	10	2	6	3	6	6	10	72 Good Rock	ý	1.5	i	i	2814	High Stress, Jointed Rock	2 6.667	Fair	77 72
2452 2462 108 98 10 2462 2472 98 89 10	Qtz Monzonite Qtz Monzonite	11,914	p.4	10.875	56 0.36	Three joir Three joir		10	Closed Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Tightly healed, hard	None Hard filling <5mm	Unaltered Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	7	0 7	13	8	2	6	1	6	6	10	59 Fair Rock	9	1	0.75	1	2826 2837	High Stress, Jointed Rock High Stress, Jointed Rock	6 1.037	Poor	64 59
2472 2482 88 78 10	Qtz Monzonite Qtz Monzonite	19,778	104	14,010	42 0.43	Three joir		10	Closed	Smooth, planar Smooth, planar	Smooth	Unaltered joint walls	None None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	ó	8	8	2	6	i	6	5	10	58 Fair Rock	9	i	1	i	2849	High Stress, Jointed Rock	2 2.333	Poor	63 58
2482 2492 78 68 10	Qtz Monzonite		R4	10,875 10,875	51 0.40	Three joir	sets	10	Closed Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	8	2	6	1	6	5	10	58 Fair Rock	9	1	1	1	2860 2872	High Stress, Jointed Rock	6 0.944 6 0.574	Very Poor	63 58
2502 2512 58 48 10	Qtz Monzonite Qtz Monzonite		R4	10,875	31 0.59 16 0.29	Three joir Three joir		10 10	Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	0	7	8 3	8	2	6	i	6	5	10	48 Fair Rock	9	i	i	1	2872	High Stress, Jointed Rock High Stress, Jointed Rock	6 0.574	Very Poor Very Poor	53 48
2512 2522 48 38 10	Qtz Monzonite	23,472			49 0.56	Three joir		10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8	8	2	6	1	6	5	10	58 Fair Rock	9	1	- 1	1	2895	High Stress, Jointed Rock	2 2.722	Poor	63 58

Part	Depth Ele	levation (MSL)				Fet	mated Pack		1			Condition of Discontinuities													ion			- 1)-system			-		
To To To To To To To To	From F	From	Interval Thickness	Lithology	Strength of Intact Rock				Number of Joint Sets	Discontinuity	ne	Roughness			Weathering /			Strength of	Strength of	r			Aperture	Discontinuity E	Discontinuity W	Weathering / Groundw	Rock Mass	RMR	Joint Set		Joint					Ocyalne	Rock Mass	Geolo
Column C	(ft) To (ft)	(ft) To (ft)	(ft)		(psi)				9		ss Joint Roughness	(RMR)	Joint Alteration (Q)	Infilling (RMR)		Joint Water (Q)	Conditions			RQD Ratin		ti Length Rating		Roughness Rating	Filling Rating		(RMR)	Classification	Number (Ja)				Stress Condition		Q-value Ch	essification	Rating (RMR ₁₉)	Stren Index
Column C	1750 1760 8	820 810	10	Qtz Monzonite	24,860	D4 1	72	1.25		ts 10 Closed		Smooth			Slightly altered		Damp	12	0 7	13	10	2	6	1	2	5 10	61	Good Rock	6	!	2	1 2018	Medium Stress	1	6.000	Fair	66	61
1	1770 1780 8	800 790	10	Qtz Monzonite	14,036		69	0.71	Two joint sets plus random join	ts 10 Closed	Smooth, plana	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	ó	13	10	2	6	i	6	5 10	60	Fair Rock	6	i	i	1 2041	High Stress, Jointed Rock	2		Fair	65	64
1	1780 1790 7	790 780	10											None				0	7	13	8	2	6	1	6	5 10	58		6	1	0.75			4			63	59
1	1800 1810 7	770 760	10	Qtz Monazite		R4 1	,875 30	0.43				Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)		0	7	8	8	2	6	i	6	6 10	54	Fair Rock	6	i	1	1 2076	High Stress, Jointed Rock	4		Poor	59	5
1	1810 1820 7	760 750	10														Damp	0	7	13	8	2	6	3	4	6 10	59	Fair Rock	6	1.5				4	5.417		64	5
No. Column Colu	1830 1840 7	740 730	10			R4 1	,875 14											0	7	3	8	2	6	1	4	6 10	47	Fair Rock	6	i				4			52	4
No. 19	1840 1850 7	730 720	10		16.000	R4 1	,875 45	0.24					Unaltered joint walls	None		Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8	8	2	6	1	6	6 10	54	Fair Rock	6	1	1			4			59	5
No.	1860 1870 7	710 700	10		4,686		27											4	0	8	8	2	6	1	6	0 10	45	Fair Rock	6	i	1			12			50	4
No.	1870 1880 7	700 690	10		16,610		48										Damp	12	0	8	8	2	6	1	6	6 10	59	Fair Rock	6	2	1			2			64	5
A	1890 1900 6	680 670	10		17,182	R4 1	L875 19							Hard filling <5mm			Damp	0	7	3	8	2	6	1	4	6 10	47	Fair Rock	6	2	2			4			52	4
1	1900 1910 6	670 660	10			R4 1	,875 10											0	7	3	8	2	6	1	4	6 10	47	Fair Rock	6	1	2	1 2191		4	0.208		52	4
No.	1910 1920 6	650 640	10											Hard filling <5mm			Damp	0	7	3	8	2	6	1 1	4	3 10	44	Fair Rock	6	i	2			4			49	- 3
No.	1930 1940 6	640 630	10	Qtz Monazite		R4 1	,875 10	0.32			Smooth, plana	Smooth	Unaltered joint walls	None		Dry excavations or minor inflow (humid or a few drips)		0	7	3	8	2	6	1	6	6 10	49	Fair Rock	6	1	1	1 2225	High Stress, Jointed Rock	4	0.417	ery Poor	54	4
No.	1940 1950 6 1950 1960 6	620 620	10		18,272	R4 1	(875 43 23									Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	3	8	2 2	6	3	4	6 10	50 54	Fair Rock Fair Rock	6	3	2			2	2.688		55	5
1	1960 1970 6	610 600	10		19,250		80					Smooth		None			Damp	12	0	17	8	2	6	1	6	6 10	68	Good Rock	6	1	1			2			73	
Second Column Col	1970 1980 6	590 580	10		14,146 25,410		55 87							None None				12	0	13	8	2 2	6	1 1	6	6 10	61	Good Rock Good Rock	6	2	1			1			66	
No. 10 10 10 10 10 10 10 1	1990 2000	580 570	10	Qtz Monazite		R4 1	,875 95	0.83	Three joint sets	10 Closed	Smooth, plana	Smooth	Slightly altered joint walls	Hard filling <5mm		Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	20	10	2	6	1	4	6 10	66	Good Rock	9	1	2			4	1.319	Poor	71	
Street	2000 2010 5 2010 2020 5	570 560 560 550	10 10		26,655	R4 1	.875 50							Hard filling <5mm None				12 0	7	20 13	10	2 2	6	1 3	6	6 10	71 61	Good Rock Good Rock	9	3	1	1 2306 1 2317		4			76 4 66	
State Column Co	2020 2030	550 540	10					0.56			Rough or irregular, ur					Dry excavations or minor inflow (humid or a few drips)		0	7	13	8	2	6	3	6	6 10	61	Good Rock	9	3	1		High Stress, Jointed Rock	4	6.167		66	
March Marc	2030 2040 2	530 520	10		27 231	R4 1				10 Closed							Damp	12	0	20	10	2	6	1 1	2	6 10	69	Fair Rock Good Rock	9	1	2			4			60	
No. Cont.	2050 2060 5	520 510	10	Qtz Monazite		R4 1	,875 100	0.59	Three joint sets		Smooth, undulat		Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	20	8	2	6	i	6	6 10	66	Good Rock	9	2	1	1 2363	High Stress, Jointed Rock	4	5.556	Fair	71	
Secondary Company Co	2060 2070 5 2070 2080 5	510 500 500 490	10 10		22,671 25,454		100 95										Damp Damp	12 12	0	20 20	15	2 2	6	1 1	6	6 10	78 73	Good Rock Good Rock	9	1 2	1			2			83 78	
20 10 10 10 10 10 10 10	2080 2090 4	490 480	10			R4 1	,875 92		Three joint sets		Rough or irregular, ur	lulating Slightly rou	gh Slightly altered joint walls			Dry excavations or minor inflow (humid or a few drips)		0	7	20	15	2	6	3	2	6 10	71	Good Rock	9	3	2			4	3.833	Poor	76	
1	2090 2100 4	480 470 470 460	10		16,566		100			10 Closed 10 Closed							Damp	12	0	20	10	2 2	6	1 1	6	6 10	73 78	Good Rock Good Rock	9	1	1			2			78 4 83	
1	2110 2120 4	460 450	10	Qtz Monazite							Rough or irregular, ur	lulating Slightly rou	gh Unaltered joint walls			Dry excavations or minor inflow (humid or a few drips)		0	4	20	10	2	6	3	6	3 10	64	Good Rock	9	3	1		High Stress, Jointed Rock	16			69	
20 10 10 10 10 10 10 10	2120 2130 4	450 440 440 430	10		25,939													12	4	20	10	2 2	6	1 1	2	1 10	68	Good Rock	9	1	2			16			62 73	
10 10 10 10 10 10 10 10	2140 2150 4	430 420	10			R3 4	550 100	1.11	Three joint sets	10 Closed	Smooth, plana		Unaltered joint walls	None			Damp	0	4	20	10	2	6	1	6	1 10	60	Fair Rock	9	1	1			16	0.694		65	
20 20 20 20 20 20 20 20	2150 2160 4	420 410 400	10		23.626	R3 4	350 95 80										Damp	12	0	17	10	2 2	6	1 1	4	1 10	63	Good Rock	9	1	2			2	2.222		65	
200 100	2170 2180 4	400 390	10			R4 1		0.77	Three joint sets		Smooth, undulat		Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	10	2	6	1	6	6 10	61	Good Rock	9	2	1		High Stress, Jointed Rock	4			66	-
200 201	2180 2190 3 2190 2200 3	380 380	10		29,590		100						Unaltered joint walls Unaltered joint walls	None None		Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)		12	0	20	15	2 2	6	1 1	6	6 10	78 78	Good Rock Good Rock	9	1	1			1 1			83	-
220 230 340	2200 2210 3	370 360	10	Qtz Monazite		R4 1	,875 100	1.43	Three joint sets	10 Closed	Smooth, plana	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)		0	7	20	10	2	6	1	6	6 10	68	Good Rock	9	1	1		High Stress, Jointed Rock	4		Poor	73	
200 200	2210 2220 3 2220 2230 3	360 350 350 340	10 Q 10		20,384		78 50										Damp Damp	12 4	0	17	10	2 2	6	3	6 2	6 10 5 10	72 53	Good Rock Fair Rock	9	3 2	1 2			10			77 58	
250 250 10 10 10 10 10 10 10	2230 2240 3	340 330	10											None	Moderately altered			0	4	8	10	2	6	1	6	3 10	50	Fair Rock	9	1	1		High Stress, Jointed Rock	16			55	
250 250	2250 2260 3	320 320	10		3.872	R3	.530 53			10 Closed							Damp	4	0	13	8	2	6	1 1	2	1 10	48	Fair Rock	9	1	2			20			52	- 2
200 200	2260 2270 3	310 300	10	Qtz Monzonite							Smooth, undulat		Unaltered joint walls	None		Dry excavations or minor inflow (humid or a few drips)		0	4	8	8	2	6	1	6	3 10	48		9	2	1		High Stress, Jointed Rock	16	0.556		53	
200 2310 230	2280 2290 2	300 290 290 280	10		1,628	R3 4	.550 58 37		Three joint sets Three joint sets				d Unaltered joint walls	None None			Damp	2	0	8	8	2 2	6	0	6	3 10	45	Fair Rock Fair Rock	9	0.5	0.75			20			58 50	
220 220 220 220 230 200	2290 2300 2	280 270	10					0.63				Smooth		Soft filling <5mm		Dry excavations or minor inflow (humid or a few drips)		0	4	8	8	2	6	1	2	3 10	44	Fair Rock	9	1	0.75			16	0.380		49	
230 240 250 250 10 Corp. Managaming 250	2310 2320 2	260 250	10		21,714	K4 I	21										Damp	12	ó	3	8	2	6	3	6	3 10	53	Fair Rock	9	3	1	1 2662		2			58	
2.20 2.20	2320 2330 2	250 240	10					0.42									Damp	0	7	3	8	2	6	1	6	6 10	49	Fair Rock	9	1	1			6			54	
230 230	2340 2350 2	230 220	10		21,408		62											12	0	13	10	2	6	3	6	5 10	67	Good Rock	9	3	1			2			72	
230 230 230 190 100	2350 2360 2	220 210	10 (Qtz Monzonite/ Diorite				0.45		10 Closed	Smooth, plana		Tightly healed, hard	Soft filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	8	2	6	1	2	5 10	54	Fair Rock	9	1	0.75		High Stress, Jointed Rock	6	1.506	Poor	59	
230 290 90 190 190 10 170 100 170 100 170 100 170 100 170 100 170 100 170 100 170 100 170 100 170 100 170 100 170 100 170 100 170 100 170 17	2370 2380 2	200 200	10		3,146	K4 I	70		Three joint sets					None				2	ó	13	8	2	6	0	6	5 10	52	Fair Rock	9	0.5	1			20			57	
2410 2410	2380 2390	190 180	10 (9,099		62		Three joint sets		Smooth, plana	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	13	10	2	6	1	6	5 10	60	Fair Rock	9	1	1		High Stress, Jointed Rock	8			65	
241 240 240 160 150 160 160 160 160 160 160 160 160 160 16	2400 2410 1	170 160	10		3,344	R4 1	L875 45										Damp	0	7	8	10	2	6	1	4	3 10	51	Fair Rock	9	4	0.75			6			56	
240 240 120 130 10 Cgr. Memoration 2 Dyc. Cgr. Moration 2 Dyc. Cgr. Mora	2410 2420 1	160 150	10											None				0	7	8	8	2	6	1	6	5 10	53		9	1	1			6			58	
240 240 10 12 10 10 Cgr Mannonine 1 20 22 22 22 22 22 22 22 22 22 22 22 22	2420 2430 I 2430 2440 I	140 130	10]			0.40		10 Closed	Smooth, plana			None		Dry excavations or minor inflow (humid or a few drips)		0	7	3	8	2 2	6	1	6	5 10	48 48		9	i	i		High Stress, Jointed Rock	6			53	4
240 2470 10 10 10 10 Qr. Monrounite a Fair Rock 2 10 10 10 Qr. Monrounite a Fair Rock 2 10 Qr.	2440 2450 1	130 120	10	Qtz Monzonite	20,262		25	0.45	Three joint sets		Rough or irregular, ur	lulating Slightly rou	gh Slightly altered joint walls		Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8	8	2	6	3	2	5 10	56	Fair Rock	9	3	2		High Stress, Jointed Rock	2	2.083	Poor	61	
270 2400 100 90 10 Care Monomonie 1 250 100 100 Que Monomonie 1 250 High Stress, Journal Rock 1 1 1 286 High Stress, Journal Rock 1 1 1 1 286 High Stress, Journal Rock 1 1 1 1 1 286 High Stress, Journal Rock 1 1 1 1 1 286 High Stress, Journal Rock 1 1 1 1 1 1 286 High Stress, Journal Rock 1 1 1 1 1 1 1 286 High Stress, Journal Rock 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2450 2460 1	110 110	10		3,410	R3 4	.550 25 10										Damp	2	0	3	8	2 2	6	0	6	5 10	50 42	Fair Rock Fair Rock	9	1.5	1			20		remely Poor	47	4
2404 2500 80 70 10 Qx Monazonite 1,3/60 8 0.33 Three joint sets: 10 Closed Smooth, planare Smooth Unlatered joint walls None Slightly altered Dy excurvations or mining frustry (humid or a few dripp) Dump 4 0 3 8 2 6 6 1 6 5 10 45 Fair Rock 9 1 1 1 1 2809 High Stress, Lotented Rock 2 0 0.484 Extremely Poor 1 50 2510 1250 10 1250 10 1250 10 10 1250 10 1250 10 10 1250 10 1250 10 10 1250 10 1250 10 10 1250 10 1250 10 10 1250 10 1250 10 1250 10 1250 10 10 1250 1	2470 2480 1	100 90	10	Qtz Monzonite	1				Three joint sets		Rough or irregular, ur	lulating Slightly rou	gh Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)		0	4	3	8	2	6	3	6	5 10	47		9	3	1		High Stress, Jointed Rock	18	0.185		52	
2500 2510 250	2480 2490 2490 2500	80 70	10		3,760	R3 4	250 I8 8	0.36										4	0	3	8	2 2	6	1	6	5 10	45 45	Fair Rock Fair Rock	9	1	1		High Stress, Jointed Rock High Stress, Jointed Rock	18 20	0.222 0.044 Ext		50 50	- 4
	2500 2510	70 60	10	Qtz Monzonite	4,136		30	0.20	Three joint sets	10 Closed	Smooth, plana	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	4	0	8	8	2	6	1	6	6 10	51	Fair Rock	9	1	1	1 2881	High Stress, Jointed Rock	20	0.167	ery Poor	56	5
	2510 2520 2520 2530	50 40	10	Qtz Monzonite Qtz Monzonite	4,720		10 10			10 Closed 10 Closed		Smooth Smooth		None None	Stightly altered Slightly altered		Damp Damp	4	0	3	8	2 2	6	1	6	5 10	48 45	Fair Rock Fair Rock	9	1	1		High Stress, Jointed Rock High Stress, Jointed Rock	18	0.185 0.062 Ext	remely Poor	53	41
		· · ·		-								-						•	•		•	•	•		•		-		_									_

Depth Elevation (?	MSL)				Estimated							Con	dition of Discontinuities										Rock N	Mass Rating (R	MR) Classifica	tion									Q-sys	stem				
From From	Interval Thickness	Lithology	Strength of Intact Rock	Estimated Strength of	Strength of Intact Rock		racture	Number of Joint Sets	Discontinuity	Aperture		Ronehness			Weathering	1	Groundwater	Streng		ength of		cing of Disc	scontinuity	Aperture	Discontinuity	Discontinuity	Weathering	Groundws	Rock Mass	RMR	Joint Set	Joint	Joint	Joint Water			Stress	Occulue	Rock M	ass Geological
(ft) To (ft) (ft) To	o (ft)		(psi)	Intact Rock	Intact Rock (psi)	(RQD) Spa	icing (ft)		Length (ft)	Thickness (mm)	Joint Roughness (Q)	(RMR)	Joint Alteration (Q)	Infilling (RMR)	Alteration	Joint Water (Q)	Conditions	Intact		act Rock RQ Rating		ontinuiti Rating	Length Rating	Thickness Rating	Roughness Rating	Filling Rating	Alteration Rating	Rating	(RMR)	Classification	Number (Ja	Roughness Number (J.)	Alteration Number (J.	Reduction (J _w)	Vertical Stress (psi)	Stress Condition	Reduction Factor (SRF)	Q-value Classificat	ion Rating	Strength Index (GSI)
1751 1761 819	809 10	Qtz Monzonite		R3	4,550	16	0.40	Two joint sets plus random joints	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	0	-	4	3	8	2	6	1	6	5	10	45	Fair Rock	6	1	1	1	2019	High Stress, Jointed Rock	12	0.222 Very Poo	or 50	45
1761 1771 809	799 10	Qtz Monzonite Qtz Monzonite	19.800	R4	10,875	20	0.42	Two joint sets plus random joints Two joint sets plus random joints	10	Closed Closed	Rough, irregular, planar Rough or irregular, undulating	Slightly rough	h Unaltered joint walls h Unaltered joint walls	None None	Slightly altere Slightly altere	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	3	8	2	6	3	6	5	10	50	Fair Rock	6	1.5	1	1	2031 2042	High Stress, Jointed Rock High Stress, Jointed Rock	4	1.250 Poor	55	50
1781 1781 799	779 10	Otz Monzonite	19,800	R4	10.875	24 22	0.34	Two joint sets plus random joints Two joint sets plus random joints	10	Closed	Smooth, planar	Singntity rough Smooth	Unaltered joint walls Unaltered joint walls	None	Moderately alter	Dry excavations or minor inflow (numid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	3	8	2	6	1	6	3	10	46	Fair Rock	6	1	i	i	2042	High Stress, Jointed Rock	4	0.000 Fair 0.917 Very Pos	or 51	46
1791 1801 779	769 10	Qtz Monzonite		R4	10,875		0.33	Two joint sets plus random joints	10	Closed		Slightly rough	h Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	3	8	2	6	3	6	5	10	50	Fair Rock	6	3	1	1	2065	High Stress, Jointed Rock	4	2.125 Poor	55	50
1801 1811 769	759 10	Qtz Monzonite Qtz Monzonite		R4	10,875 10,875		0.33	Two joint sets plus random joints Two joint sets plus random joints	10	Closed Closed	Rough, irregular, planar Rough or irregular, undulating	Slightly rough	h Unaltered joint walls h Slightly altered joint walls	None Soft filling <5mm	Slightly altere Moderately alte	Dry excavations or minor inflow (humid or a few drips) d Dry excavations or minor inflow (humid or a few drips)	Damp	0	! I	7	3	8	2	6	3	6	5	10	50	Fair Rock	6	1.5	1	1	2077	High Stress, Jointed Rock High Stress, Jointed Rock	4	0.750 Very Poo	or 55	50
1821 1831 749	739 10	Qtz Monzonite		R4	10,875		1.00	Two joint sets plus random joints	10	Closed	Rough, irregular, planar	Slightly rough	h Slightly altered joint walls	Soft filling <5mm	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	8	10	2	6	3	2	5	10	53	Fair Rock	6	1.5	2	i	2100	High Stress, Jointed Rock	4	1.031 Poor	58	53
1831 1841 739	729 10	Qtz Monzonite	14,797				0.71	Two joint sets plus random joints	10	Closed	Rough, irregular, planar		h Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	12	2	0	8	10	2	6	3	6	5	10	62	Good Rock	6	1.5	1	1	2111	High Stress, Jointed Rock	2	5.875 Fair	67	62
1841 1851 729 1851 1861 719	719 10	Qtz Monzonite Otz Monzonite	9.636	R4	10,875		0.63	Two joint sets plus random joints Two joint sets plus random joints	10	Closed Closed	Rough or irregular, undulating Rough or irregular, undulating		h Unaltered joint walls h Slightly altered joint walls	None Soft filling <5mm	Unaltered Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0 7		7	3	8	2	6	3 2	6	6	10	51 47	Fair Rock	6	3 3	1 2	1	2123	High Stress, Jointed Rock High Stress, Jointed Rock	4	2.875 Poor 0.938 Very Poo	56	51
1861 1871 709	699 10	Qtz Monzonite	20,108			21	0.42	Two joint sets plus random joints	10	Closed	Smooth, undulating	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	2	0	3	8	2	6	1	6	6	10	54	Fair Rock	6	2	ī	i	2146	High Stress, Jointed Rock	2	3.500 Poor	59	54
1871 1881 699 1881 1891 689	689 10	Qtz Monzonite Diorite/ Otz Monzonite	19,360	24	10.875		0.48	Two joint sets plus random joints	10	Closed	Smooth, planar Smooth, undulating	Smooth	Unaltered joint walls	None None	Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	2	0	3	8	2	6	1	6	6	10	54	Fair Rock	6	1	1	1	2157	High Stress, Jointed Rock High Stress, Jointed Rock	2	1.167 Poor	59	54
1881 1891 689	679 10 669 10	Diorite/ Qtz Monzonite Diorite/ Otz Monzonite	e e	R4 R4	10,875		0.59	Two joint sets plus random joints Two joint sets plus random joints	10	Closed	Smooth, undulating Smooth, undulating	Smooth	Unaltered joint walls Unaltered joint walls	None None	Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	3	8	2	6	1	6	6	10	54 49	Fair Rock	6	2 2	1	1 1	2169 2180	High Stress, Jointed Rock High Stress, Jointed Rock	4	3.000 Poor 0.833 Very Poo	59 54	54 49
1901 1911 669	659 10	Qtz Monzonite	7,909				0.53	Two joint sets plus random joints	10	Closed	Rough or irregular, undulating		h Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	7		0	13	8	2	6	3	6	6	10	61	Good Rock	6	3	1	1	2192	High Stress, Jointed Rock	6	4.667 Fair	66	61
1911 1921 659	649 10	Qtz Monzonite Otz Monzonite	32.098	R4	10,875		0.56	Two joint sets plus random joints Two joint sets plus random joints	10	Closed	Smooth, planar Rough or irregular, undulating	Smooth	Tightly healed, hard h Unaltered joint walls	Hard filling <5mn None	Unaltered Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	,	7	8	8	2	6	1	4	6	10	52	Fair Rock	6	1 2	0.75	1	2203	High Stress, Jointed Rock Medium Stress	4	1.556 Poor 15,000 Good	57	52
1931 1941 639	629 10	Qtz Monzonite Qtz Monzonite	32,098	R3	4,550		0.48	Two joint sets plus random joints Two joint sets plus random joints	10	Closed	Smooth, planar	Singntity rough Smooth	Slightly altered joint walls	Hard filling <5mn	Highly altere	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0		4	13	10	2	6	1	4	1	10	51	Fair Rock	6	1	2	i	2226	High Stress, Jointed Rock	14	0.339 Very Poo	or 56	51
1941 1951 629	619 10	Qtz Monzonite		R4	10,875	10	0.45	Two joint sets plus random joints	10	Closed	Discontinuous joints	Slightly rough	h Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	3	8	2	6	3	6	5	10	50	Fair Rock	6	4	1	1	2238	High Stress, Jointed Rock	4	1.667 Poor	55	50
1951 1961 619	609 10 500 10	Qtz Monzonite Otz Monzonite		R4 R4	10,875 10,875		0.48	Two joint sets plus random joints Two joint sets plus random joints	10	Closed	Smooth, planar Smooth, undulating	Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	3	8	2	6	1	6	5	10	48	Fair Rock	6	1 2	1	1 1	2249	High Stress, Jointed Rock High Stress, Jointed Rock	4	0.417 Very Poor	or 53	48
1971 1981 599	589 10	Qtz Monzonite		R4	10,875	90	1.67	Two joint sets plus random joints	10	Closed	Rough or irregular, undulating	Slightly rough	h Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	20	10	2	6	3	6	5	10	69	Good Rock	6	3	i	i	2272	High Stress, Jointed Rock	4	11.250 Good	74	69
1981 1991 589	579 10	Qtz Monzonite		R4 R4	10,875 10,875		0.83	Two joint sets plus random joints	10	Closed	Rough or irregular, undulating	Slightly rough	h Unaltered joint walls	None	Moderately alte		Damp	0		7	13	10	2	6	3	6	3	10	60	Fair Rock	6	3	1	1 1	2284 2295	High Stress, Jointed Rock	4	8.375 Fair	65	60
2001 2011 569	559 10	Qtz Monzonite Otz Monzonite		R4	10,875		0.67	Three joint sets Three joint sets	10	Closed	Smooth, planar Smooth, planar	Smooth	Unaltered joint walls Unaltered joint walls	None None	Moderately alter Slightly altere		Damp	0		7	3	8	2	6	1	6	5	10	48	Fair Rock	9	1	i	i	2307	High Stress, Jointed Rock High Stress, Jointed Rock	4	1.306 Poor 0.278 Very Poor	or 53	48
2011 2021 559	549 10	Qtz Monzonite	20,362			30	0.32	Three joint sets	10	Closed	Rough, irregular, planar	Slightly rough	h Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	12	2	0	8	8	2	6	3	6	5	10	60	Fair Rock	9	1.5	i	i	2318	High Stress, Jointed Rock	2	2.500 Poor	65	60
2021 2031 549	539 10	Qtz Monzonite Otz Monzonite		R4 R3	10,875 4,550	50	1.00	Three joint sets Three joint sets	10	Closed Closed	Smooth, planar Smooth, planar	Smooth Smooth	Unaltered joint walls	None None	Moderately alte Highly altero	d Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	0	. I	7	13	10	2	6	1	6	3	10	58	Fair Rock	9	1	1	1	2330	High Stress, Jointed Rock High Stress, Jointed Rock	4	1.389 Poor 0.397 Very Poor	63	58
2041 2051 529	519 10	Qtz Monzonite		R3	10,875		0.31	Three joint sets	10	Closed	Discontinuous joints	Slightly rough	h Unaltered joint walls	None	Moderately alte		Damp	0		7	3	8	2	6	3	6	3	10	48	Fair Rock	9	4	1	i	2353	High Stress, Jointed Rock	4	1.111 Poor	53	48
2051 2061 519	509 10	Qtz Monzonite		R4	10,875		0.33	Three joint sets	10	Closed	Discontinuous joints	Slightly rough	h Unaltered joint walls	None	Moderately alte	d Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	3	8	2	6	3	6	3	10	48	Fair Rock	9	4	1	1	2364	High Stress, Jointed Rock	4	1.111 Poor	53	48
2061 2071 509	499 10	Qtz Monzonite Otz Monzonite	23,100	R4	10,875		0.43	Three joint sets Three joint sets	10	Closed Closed	Smooth, undulating Rough, irregular, planar	Smooth Slightly rough	Unaltered joint walls b Unaltered joint walls	None None	Moderately alte Moderately alte		Damp	0	,	7	3	8	2	6	1 2	6	3 3	10	46	Fair Rock	9	1.5	1	1	2376	High Stress, Jointed Rock High Stress, Jointed Rock	4	0.944 Very Poor	or 51	46
2081 2091 489	479 10	Qtz Monzonite	25,100	R4	10,875		0.34	Three joint sets	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Moderately alte		Damp	0		7	3	8	2	6	í	6	3	10	46	Fair Rock	ý	1	i	i	2399	High Stress, Jointed Rock	4	0.278 Very Poo	or 51	46
2091 2101 479	469 10	Qtz Monzonite		R3	4,550		0.34	Three joint sets	10	Closed	Rough or irregular, undulating	Slightly rough	h Unaltered joint walls	None	Highly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	0		4	3	8	2	6	3	6	1	10	43	Fair Rock	9	3	1	1	2410	High Stress, Jointed Rock	14	0.262 Very Poo	or 48	43
2101 2111 469	459 10 449 10	Qtz Monzonite Otz Monzonite	27,676				0.48	Three joint sets Three joint sets	10	Closed Closed	Rough or irregular, undulating Discontinuous joints	Slightly rough Slightly rough	h Unaltered joint walls h Unaltered joint walls	None None	Moderately alter Slightly altere		Damp	13	,	0	8	8	2	6	3	6	5	10	53 60	Fair Rock	9	4	1	1 1	2422	High Stress, Jointed Rock Medium Stress	4	3.250 Poor 12.000 Good	58	60
2121 2131 449	439 10	Qtz Monzonite		R4	10,875		0.45	Three joint sets	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	3	8	2	6	1	6	5	10	48	Fair Rock	9	1	i	i	2445	High Stress, Jointed Rock	4	0.278 Very Poo	or 53	48
2131 2141 439	429 10	Qtz Monzonite Qtz Monzonite		R4 R4	10,875 10,875		0.53	Three joint sets Three joint sets	10	Closed Closed	Rough or irregular, undulating Discontinuous joints	Slightly rough	h Unaltered joint walls h Unaltered joint walls	None None	Slightly altere Slightly altere		Damp	0	·	7	8	8	2	6	3	6	5	10	55	Fair Rock	9	3	1	1	2456	High Stress, Jointed Rock High Stress, Jointed Rock	4	2.500 Poor 1.111 Poor	60	55
2151 2161 419	409 10	Otz Monzonite		R4 R3	4,550		0.37	Three joint sets	10	Closed	Discontinuous joints Discontinuous ioints	Slightly rough	h Unaltered joint walls	None	Moderately alter		Damp	0		4	3	8	2	6	3	6	3	10	45	Fair Rock	9	4	i	i	2408	High Stress, Jointed Rock	16	0.278 Very Pos	or 50	45
2161 2171 409	399 10	Qtz Monzonite		R3	4,550		0.29	Three joint sets	10	Closed	Discontinuous joints	Slightly rough	h Unaltered joint walls	None	Moderately alte	d Dry excavations or minor inflow (humid or a few drips)	Damp	0		4	3	8	2	6	3	6	3	10	45	Fair Rock	9	4	1	1	2491	High Stress, Jointed Rock	16	0.278 Very Poo	or 50	45
2171 2181 399	389 10	Qtz Monzonite Qtz Monzonite		R3	4,550 10,875		0.29	Three joint sets Three joint sets	10	Closed	Discontinuous joints Smooth, planar	Slightly rough	h Unaltered joint walls Unaltered joint walls	None None	Moderately alte Unaltered	d Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	. I	4	3	8	2	6	3	6	3	10	45	Fair Rock	9	4	1	1	2502 2514	High Stress, Jointed Rock High Stress, Jointed Rock	16	0.361 Very Poo	or 50	45
2191 2201 379	369 10	Qtz Monzonite	4,180				0.37	Three joint sets	10	Closed	Rough or irregular, undulating	Slightly rough	h Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	4		ó	3	8	2	6	3	6	6	10	48	Fair Rock	ý	3	i	i	2525	High Stress, Jointed Rock	18	0.185 Very Poo	or 53	48
2201 2211 369	359 10	Qtz Monzonite		R4	10,875		0.56	Three joint sets	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	3	8	2	6	1	6	6	10	49	Fair Rock	9	1	1	1	2537	High Stress, Jointed Rock	4	0.278 Very Poo	or 54	49
2211 2221 359	349 10	Qtz Monzonite Otz Monzonite	16,257				0.40	Three joint sets Three joint sets	10	Closed	Rough or irregular, undulating Smooth, planar	Slightly rough	h Tightly healed, hard Unaltered joint walls	Hard filling <5mn None	Moderately alter Slightly altere	d Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	2	0	13	8	2	6	3	4	3	10	61	Good Rock	9	3	0.75	1	2548 2560	High Stress, Jointed Rock High Stress, Jointed Rock	2	11.333 Good 2.778 Poor	66	61
2231 2241 339	329 10	Qtz Monzonite	30,470			35	0.33	Three joint sets	10	Closed	Rough or irregular, undulating		h Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	2	0	8	8	2	6	3	6	6	10	61	Good Rock	ý	3	i	i	2571	Medium Stress	î	11.667 Good	66	61
2241 2251 329	319 10	Qtz Monzonite Otz Monzonite	17 006	R4	10,875		0.53	Three joint sets Three joint sets	10	Closed	Smooth, planar Rough or irregular, undulating	Smooth	Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	8	8	2	6	1	6	5	10	53	Fair Rock	9	1	1	1	2583 2594	High Stress, Jointed Rock	6	0.537 Very Poo	or 58	53
2261 2271 309	299 10	Otz Monzonite	17,006	R4	10,875		0.83	Three joint sets	10	Closed Closed	Rough or irregular, undulating Rough or irregular, undulating	Slightly rough	h Slightly altered joint walls Unaltered joint walls	Soft filling <5mm None	Slightly aftere	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	8	10	2	6	3	6	5	10	57	Fair Rock	9	3	1	i	2606	High Stress, Jointed Rock High Stress, Jointed Rock	6	2.222 Poor	62	57
2271 2281 299	289 10	Qtz Monzonite	19,470				0.56	Three joint sets	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	12	2	0	8	8	2	6	1	6	5	10	58	Fair Rock	9	1	1	1	2617	High Stress, Jointed Rock	2	2.056 Poor	63	58
2281 2291 289	279 10	Qtz Monzonite Qtz Monzonite		R4	10,875 10,875		0.48	Three joint sets Three joint sets	10	Closed	Smooth, undulating Smooth, planar	Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altere Slightly altere	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	8	8	2	6	1	6	5	10	53	Fair Rock	9	2	1	1	2629	High Stress, Jointed Rock High Stress, Jointed Rock	6	1.185 Poor 0.259 Very Poor	58	53
2301 2311 269	259 10	Qtz Monzonite	15,290			30	1.00	Three joint sets	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	15	2	0	8	10	2	6	i	6	5	10	60	Fair Rock	ý	i	i	i	2652	High Stress, Jointed Rock	4	0.833 Very Poo	or 65	60
2311 2321 259	249 10	Qtz Monzonite	24 552	R4	10,875		0.59	Three joint sets	10	Closed Closed	Smooth, undulating Rough or irregular, undulating	Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altere	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	.	7	8	8	2	6	1	6	5	10	53	Fair Rock	9	2	1	1 1	2663 2675	High Stress, Jointed Rock High Stress, Jointed Rock	6	1.556 Poor	58	53
2321 2331 249	239 10	Qtz Monzonite Qtz Monzonite	24,332	R4	10,875		0.59	Three joint sets Three joint sets	10	Closed	Rough or irregular, undulating Rough or irregular, undulating	Slightly rough	h Unaltered joint walls	None	Slightly altere Slightly altere		Damp	0		7	8	8	2	6	3	6	5	10	55	Fair Rock	9	3	i	i	2686	High Stress, Jointed Rock	6	2.111 Poor	60	55
2341 2351 229	219 10	Qtz Monzonite		R4	10,875	35	0.56	Three joint sets	10	Closed	Rough or irregular, undulating	Slightly rough	h Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	8	8	2	6	3	6	5	10	55	Fair Rock	9	3	1	1	2698	High Stress, Jointed Rock	6	1.944 Poor	60	55
2351 2361 219	209 10	Qtz Monzonite Otz Monzonite	22,308	P.4	10,875		1.00	Three joint sets Three joint sets	10	Closed Closed	Rough or irregular, undulating Smooth, planar	Slightly rough	h Unaltered joint walls Unaltered joint walls	None None	Slightly altere	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	2	0 7	13	10	2	6	3	6	5	10	67	Good Rock	9	3	1	1	2709	High Stress, Jointed Rock High Stress, Jointed Rock	2	11.833 Good 0.833 Very Poo	72	67 55
2371 2381 199	189 10	Qtz Monzonite Qtz Monzonite		R4	10,875		1.43	Three joint sets Three joint sets	10	Closed	Smooth, planar Rough or irregular, undulating		Unaltered joint walls h Unaltered joint walls	None None	Slightly altere		Damp	0		7	13	10	2	6	3	6	5	10	62	Good Rock	9	3	1	i	2721	High Stress, Jointed Rock High Stress, Jointed Rock	6	0.833 Very Poor 3.444 Poor	67	62
2381 2391 189	179 10	Qtz Monzonite	25,960			77	1.25	Three joint sets	10	Closed	Rough or irregular, undulating		h Slightly altered joint walls	Soft filling <5mm	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	12	2	0	17	10	2	6	3	2	5	10	67	Good Rock	9	3	2	1	2744	High Stress, Jointed Rock	2	6.417 Fair	72	67
2391 2401 179	169 10	Qtz Monzonite Otz Monzonite		R4	10,875 10,875		1.25	Three joint sets Three joint sets	10	Closed	Smooth, planar Smooth, undulating	Smooth	Slightly altered joint walls Unaltered joint walls	Soft filling <5mm	Slightly altere	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	17	10	2	6	1	2	5	10	60	Fair Rock	9	1 2	2	1 1	2755	High Stress, Jointed Rock High Stress, Jointed Rock	6	0.778 Very Poor	or 65	60
2411 2421 159	149 10	Qtz Monzonite Qtz Monzonite	22,286	10.4		63	0.83	Three joint sets	10	Closed	Smooth, undulating Smooth, planar	Smooth	Unaftered joint walls Unaftered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	2	ó	13	10	2	6	i	6	5	10	65	Good Rock	9	1	i	i	2778	High Stress, Jointed Rock High Stress, Jointed Rock	2	3.500 Poor	70	65
2421 2431 149	139 10	Qtz Monzonite		R4	10,875		0.67	Three joint sets	10	Closed	Smooth, undulating	Smooth	Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	8	10	2	6	1	6	5	10	55	Fair Rock	9	2	1	1	2790	High Stress, Jointed Rock	6	1.667 Poor	60	55
2431 2441 139	129 10 119 10	Qtz Monzonite Otz Monzonite	14,006	R4	10,875	91 68	0.71	Three joint sets Three joint sets	10	Closed Closed	Rough or irregular, undulating Rough or irregular, undulating	Slightly rough	h Tightly healed, hard h Unaltered joint walls	Soft filling <5mm None	Slightly altere	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0 7		7	20	10	2	6	3	6	5	10	65	Good Rock	9	3	0.75	1 1	2801 2813	High Stress, Jointed Rock High Stress, Jointed Rock	6	6.741 Fair 5.667 Fair	70 67	65
2451 2461 119	109 10	Qtz Monzonite	3,542				0.71	Three joint sets	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	2		0	13	10	2	6	í	6	5	10	55	Fair Rock	ý	1	i	i	2824	High Stress, Jointed Rock	20	0.344 Very Poo	or 60	55
2461 2471 109	99 10	Qtz Monzonite	7,179				0.83	Three joint sets	10	Closed	Rough or irregular, undulating		h Unaltered joint walls	None	Slightly altere	Dry excavations or minor inflow (humid or a few drips)	Damp	4	. 1	0	8	10	2	6	3	6	5	10	54	Fair Rock	9	3	1	1	2836	High Stress, Jointed Rock	10	1.567 Poor	59	54
2471 2481 99 2481 2491 89	89 10 79 10	Qtz Monzonite Otz Monzonite	26,840	R4	10.875	25 17	0.48	Three joint sets Three joint sets	10	Closed	Rough or irregular, undulating Rough or irregular, undulating		h Unaltered joint walls h Unaltered joint walls	None None	Slightly altere Slightly altere	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	4	7	3	8	2 2	6	3	6	5	10	60 50	Fair Rock Fair Rock	9	3	l i	1 1	2847 2859	High Stress, Jointed Rock High Stress, Jointed Rock	6	4.167 Fair 0.944 Very Pos	65 55	50
2491 2501 79	69 10	Diorite/ Qtz Monzonit	e	R4	10,875		0.33	Three joint sets	10	Closed	Discontinuous joints	Slightly rough	h Unaltered joint walls	None	Moderately alte	d Dry excavations or minor inflow (humid or a few drips)	Damp	0		7	3	8	2	6	3	6	3	10	48	Fair Rock	9	4	i	i	2870	High Stress, Jointed Rock	6	0.741 Very Poo	or 53	48
2501 2511 69	59 10	Diorite Diorite			24,587 24,587		0.25	Three joint sets Three joint sets	10	Closed Closed	Smooth, planar	Smooth Slightly rough	Unaltered joint walls Unaltered joint walls	None None	Slightly altere		Damp	0		0	3	8	2	6	1	6	5	10	41	Fair Rock	9	1	1	1 1	2882 2893	High Stress, Jointed Rock High Stress, Jointed Rock	2	0.556 Very Poo 0.833 Very Poo	or 46	41
2521 2531 49	39 10	Diorite			24,587	10	0.20	Three joint sets Three joint sets	10	Closed	Rough, irregular, planar Smooth, undulating	Smooth	h Unaltered joint walls Unaltered joint walls	None None	Moderately alte Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0		0	3	8	2	6	1	6	6	10	41	Fair Rock	9	2	1	i	2893 2905	High Stress, Jointed Rock High Stress, Jointed Rock	2	1.111 Poor	ur 46 47	41
	•												•																	•							•			

Part	Depth Eleva	tion (MSL)	1		T	T T					Condition of D	iscontinuities								Re	ck Mass Rating (RMR) Classificatio	on							Q-syst	tem			
Part		Interva	I Litholom		ted Strength of	Rock Quality Fractu		m	Aperture					W 4 1 1		Groundwater	Strength of	Strength of	Spacing	of Discontinu	it Aperture Discontinuit Dis	scontinuit Weat	thering /	Roo	k Mass RMR	Inima Coa					Stress		Rock Mass Geologie
No.	(ft) To (ft) From (ft)	To (ft) (ft)	ss Lithology		Pock Intact Rock	Designation Spacing (RQD)	(ft) Number of Joint Sets	y Length (ft)		Joint Roughness (Q)	(RMR)	Joint Alteration (Q)	Infilling (RMR)		Joint Water (Q)	Conditions								Rating R		Number (I)				Stress Condition		Q-value Q-value Classification	Rating Strengt
Column	1746 1756 796	7 286.7 10	Oty Monarita	2.957			Two joint cate plus random joints	10	()	Smooth planar	Smooth	Unaltered joint walk	None	Uioble altered	Dry avanuations or minor inflant (humid or a few drive)	Damo	2	nanng 0	8 10	2	6 l	6	ıııııı	10	,	6	1	1 1	2014	High Street Tointed Book	20	0.400 Very Peer	51 46
No.	1756 1766 786.	776.7 10		3,752				10			Smooth		None			Damp	4	0	13 10	2	6 1	6	i	10		6	1	i i	2025		16	0.552 Very Poor	58 53
No.	1766 1776 776.	766.7 10		10.145 R2	1,270			10					None None				0 7	2	13 8	2	6 1	6	1	10	49 Fair Rock 57 Fair Rock	6	1 2	1 1			20		54 49
			Qtz Monzonite	8,078		57 0.43	Two joint sets plus random joints	10	Closed	Smooth, planar		Unaltered joint walls		Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	13 8	2	6 1	6	5			6	1	i i	2060	High Stress, Jointed Rock	6	1.583 Poor	63 58
1				4,440	4.660			10			Smooth						4	0	13 10	2	6 1	6	3			6	2	1 1			12		60 55
	1816 1826 726.	716.7 10		13,817	1,000			10					None				7	0	8 10	2	6 3	6	5	10	57 Fair Rock	6	3	i i			2		62 57
No. 19				R3	4,550			10			Slightly rough		None				0	4	13 8	2	6 3	6	3	10		6	3	1 1			12		60 55
No.				4,141 R2	1.270			10			Smooth Smooth		None None				0	2	8 8	2 2	6 1	6	3	10		6	1 2	1 1			20		53 48 51 46
No.				RI	450		Two joint sets plus random joints	10		Discontinuous joints				Highly altered	Dry excavations or minor inflow (humid or a few drips)		0	1	13 8	2	6 5	6	1	10		6	4	1 1	2140	High Stress, Jointed Rock	20		57 52
No No No No No No No No				1,694				10									2 2	0	3 8	2 2	6 5	6	3	10		6	4 4	1 1			20		r 50 45
1	1886 1896 656.	646.7 10	Qtz Monzonite	13,434			Two joint sets plus random joints	10		Smooth, undulating		Unaltered joint walls		Highly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	8 8	2	6 1	6	1			6	2	1 1	2175	High Stress, Jointed Rock	2	5.667 Fair	54 49
No.				RI	450 1.270			10									0	1 2	8 5	2	6 5	6	1 2	10	44 Fair Rock 45 Fair Rock	6	4	1 1			20		49 44
No.	1916 1926 626.	616.7 10	Qtz Monzonite		1,270	15 0.29	Two joint sets plus random joints	10	Closed	Smooth, planar		Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)		7	0	3 8	2	6 3	6	5	10		6	î	i i	2209	High Stress, Jointed Rock	4	0.625 Very Poor	55 50
No.				1,869	10.975			10			Smooth					Damp	2	0	3 8	2	6 1	6	5	10		6	1	1 1			20		r 48 43
No.	1946 1956 596.	586.7 10			10,875			10									4	ó	8 8	2	6 1	4	5	10		6					10	1.911 Poor	53 48
1								10									7	0	8 10	2	6 3	6	5	10		6	3	1 1			2		62 57
1								10									12	0	3 8	2	6 3	6	5	10		6	3	1 1			1		58 53 60 55
18 18 18 18 18 18 18 18				R3	4,550			10			Smooth		None				0	4	8 8	2	6 1	6	5	10	50 Fair Rock	6	4	1 1			14		55 50
1				11.546 R3	4,550			10			Smooth Smooth		None None			Damp	7	0	3 8	2 2	6 1	6	3	10		6	1	1 1			4		50 45
No.	2016 2026 526.	516.7 10	Qtz Monzonite	10,638		36 0.33	Two joint sets plus random joints	10	Closed	Rough or irregular, undulating		Unaltered joint walls		Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	8 8	2	6 1	6	3	10		6	3	i i	2324	High Stress, Jointed Rock	4	4.500 Fair	56 51
No.								10									12	0	3 8	2 2	6 1	6	3	10	51 Fair Rock 51 Fair Rock	6	2 3	1 1 1			2 4		56 51 56 51
No.								10	Closed	Rough or irregular, undulating			None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8 8	2	6 3	6	5			6	3	i i		High Stress, Jointed Rock	2	7.000 Fair	65 60
May								10									4	0	8 10	2	6 1	6	5	10		6	1	1 1			14		57 52
May	2076 2086 466.	456.7 10						10									4	0	13 8	2	6 1	6	5	10	55 Fair Rock	6	3	i i			12	2.083 Poor	60 55
No.				R2	1,270			10			Smooth					Damp	0	2	3 8	2	6 1	6	3	10		6	1	1 1			20		r 46 41
1								10			Smooth Smooth					Damp	12	0	13 10	2 2	6 1	6	6	10		6	2 2	0.75			4 2		71 66
1.5 1.5				R4				10								Damp	0	7	13 8	2	6 1	6	5	10		6	2	1 1		High Stress, Jointed Rock	4		63 58
1				11 994 R4	10,875			10									7	7 0	8 10	2 2	6 1	4	5			6	2 2	0.75			4 4		58 53 61 56
1	2146 2156 396.	386.7 10	Qtz Monzonite	R4	10,875	47 0.83	Two joint sets plus random joints	10	Closed	Rough, irregular, planar	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8 10	2	6 3	6	5	10		6	1.5	i i		High Stress, Jointed Rock	4	2.938 Poor	62 57
1								10									12	0	13 8	2	6 3	4	5	10	63 Good Rock 55 Enir Pock	6	3	0.75	2485		2		68 63
200 201								10			Smooth		None			Damp	12	0	8 8	2	6 1	6	5	10		6	1.5	i i	2508		2		63 58
2.50 1.50				R4	10,875			10								Damp	0	7	8 8	2	6 3	6	5	10	55 Fair Rock	6	3	1 1			4		60 55
20 20 20 20 20 20 20 20	2206 2216 336.	326.7 10				37 0.37	Two joint sets plus random joints	10									12	0	8 8	2	6 3	6	3	10	58 Fair Rock	6	3	1 1	2543		2	9.250 Fair	63 58
250 250				R2				10					None				0	2	8 8	2	6 3	6	1	10		6	4	1 1					51 46
250 250				R2				10									0	2	3 5	2	6 3	6	0	10	37 Poor Rock	6	4	1 1			20		42 37
250 250				R3	4,550			10								Damp	0	4	3 8	2	6 3	6	5	10		6	1.5	1 1	2589		16		52 47
250 250				10,475 R3	4.550			10								Damp	7	0 4	8 8	2 2	6 1	6	5	10		6	1 4	1 1 1	2600 2612		6		58 53 55 50
2506 2867 2877 2878 2867 2878 2879	2276 2286 266.		Qtz Monzonite	R3	4,550	25 0.50	Two joint sets plus random joints	10	Closed	Smooth, planar	Smooth	Unaltered joint walls		Moderately altered	Dry excavations or minor inflow (humid or a few drips)		0	4	8 8	2	6 1	6	3	10	48 Fair Rock	6	i	i i	2623	High Stress, Jointed Rock	16	0.260 Very Poor	53 48
216 216				13,453 R3	4,550			10 10									7 0	0 4	3 10 8 10	2 2	6 3	6	5	10		6	3 2	0.75			4 16		57 52 55 50
235 236 236 236 237			Qtz Monzonite	R3		10 1.00	Two joint sets plus random joints	10	Closed	Rough or irregular, undulating		Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	3 10	2	6 3	6	5			6	3	1 1	2658	High Stress, Jointed Rock	16	0.313 Very Poor	54 49
234 234 236	2316 2326 226.	216.7 10		24,617	4.550			10									12	0	8 8	2	6 3	6	5	10	60 Fair Rock 52 Fair Rock	6	4 3	1 1	2669		2		65 60
25 2 36 2 6 16 7 1 76 7 10		196.7 10	Qtz Monzonite	R4		21 0.45	Two joint sets plus random joints	10	Closed	Rough or irregular, undulating		Unaltered joint walls	None	Slightly altered	Medium inflow, occasional outwash of joint fillings (many drips/"rain"		0	7	3 8	2	6 3	6	5	7	47 Fair Rock	6	3	1 0.66	2692	High Stress, Jointed Rock	6	1.155 Poor	55 50
21/2 21/2								10								Damp	12	0	8 10	2	6 3	6	5	10	62 Good Rock	6	1.5	1 1	2704		1		67 62
236 236 236 16.7 15.7 17.7 10 Cg. Manzonde 237.7 2 8.8 236 23.6 1.8 1 1 2.728 Modiment Serses 1 1 1 1 2.728 Modiment Served Served Modified Served Modifie	2366 2376 176.	166.7 10		35,122		8 0.59	Two joint sets plus random joints	10	Closed								12	0	3 8	2	6 3	6	5	10	55 Fair Rock	6	2	i	2727	Medium Stress	1	2.667 Poor	60 55
2 246 246 18.7 18.7 2.7 19.7 2.7 19.7 2.7 19.7 2.7 19.7 2.7 19.7 2.7 19.7 2.7 19.7 2.7 19.7 2								10				Unaltered joint walls		Slightly altered			12	0	8 8	2	6 1	6	5	10		6	3	1 1			1		63 58
240 246 1 18.7 1 18.7 1 7 10 Qx Monzonie 2 18.8 18.9 1 Very Poor 2 18.8 18.0 99 Very Poor 2 18.8 18.0 99 Very Poor 2 18.0 99 V				25,572 R4	10,875			10									0	7	8 10	2 2	6 3	6	5	10		6	3	1 1			6		62 57
2.42 3.46 1.16.7 10.6.7 10. Qx Monzonic 1.16.9 10.5 10.5 10. Qx Monzonic 1.16.9 10. Qx Monzonic 1.2. Smooth plant of program (house of see dept) 2.46 2.46 1.46 1.67 1.67 10. Qx Monzonic 1.2. Smooth plant of see dept) 2.46 2.46 1.46 1.46 1.46 1.46 1.46 1.46 1.46 1	2406 2416 136.			7,538			Two joint sets plus random joints	10		Rough or irregular, undulating	Slightly rough			Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	3 8	2	6 3	6	5	10	50 Fair Rock	6	3	1 1			10	0.900 Very Poor	55 50
2416 2466 246 346 50.7 86.7 10 Cgx Monzonice Bot 3 4 550 41 0.5 For Poor 1 1 Closed Bounds (handled regions washing Series (ha	2416 2426 126. 2426 2436 116			R4				10 10			Stightly rough Smooth					Damp	0	7 7	8 8 8	2 2	6 3	6	3	10		6	3	1 1			6		60 55
2.65 2.46 8.7 7 7.0 10 Qx Manzonie 16,272	2436 2446 106.		Qtz Monzonite	R3		34 0.56	Two joint sets plus random joints	10	Closed	Smooth, undulating		Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	8 8	2	6 1	6	3	10		6	2	i i	2807	High Stress, Jointed Rock	18	0.630 Very Poor	53 48
246 246 18.7 6.7 10 Qx Monrovie test plan radom joint 1 Qx Monrovi	2446 2456 96.7 2456 2466 86.7	86.7 10		R3	4,550 4,550			10									0	4 4	8 10	2 2	6 3	6	3	10	52 Fair Rock 48 Fair Pool	6	3	0.75			18		57 52 53 49
286 286 5.7 6.7 10 Qx Monrouse 16,977 45 2.00 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, chinned Book 4 5.25 Two joint regular part and hings [high Serves, hinted Book 4 5.25 Two joint regular part and hings [high Serves, hinted Book 4 5.25 Two joint regular part and hinted [hinted hinted hinte	2466 2476 76.7		Qtz Monzonite		4,550	38 2.00	Two joint sets plus random joints	10	Healed	Smooth, planar	Smooth	Tightly healed, hard	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8 15	2	6 1	4	5	10	63 Good Rock	6			2842	High Stress, Jointed Rock	4	2.111 Poor	68 63
2966 2506 46,7 36,7 10 Qvz Monzonie 19,615 64 1.25 Two joint sets plass random joints 10 Closed Smooth, planar Smooth Unabered joint walls None Slightly abered Dry excertations or minor influent (tunnid or a few drips) Damp 12 0 13 10 2 6 1 1 1 1 2876 High Stress, Jointed Rock 2 5.333 Fair 70 65	2476 2486 66.3	56.7 10						10									12	0	13 15	2	6 1	6	5			6	2	1 1			1 4	19.333 Good 5.625 Ent-	75 70
	2496 2506 46.7	36.7 10						10									12	0	13 10	2	6 1	6	5	10	65 Good Rock	6	1	i i			2		70 65
	2506 2516 36.7	26.7 10	Qtz Monzonite	11,507		47 0.08	Two joint sets plus random joints	10	Closed	Rough, irregular, planar	Smooth		None			Damp	7	0	8 5	2	6 1	6	5	10	50 Fair Rock	6	1.5	1 1	2888	High Stress, Jointed Rock	6	1.958 Poor	55 50

Depth Elevation (MSL)				Condition of Discontinuities Rock												ok Mare P-41-	ng (RMR) Classification								0	rtom								
Deptn Elevation (MSL)	1	Strength of		mated Rock	:			1		Condi	ion of Discontinuities	1			1 1				Rec	CK Mass Ratii	ng (KMR) Classification		1		_		1	1	Q-sy	stem				
From From Thicknes	ss Lithology			ngth of Qualit	ty Fracture	Number of Joint Sets	Discontinuit	Aperture		Roughness			Weathering /		Groundwater	Strength of	Strength of	Spacing					Groundwater		MR	Joint Set Joint	Joint	Joint Water	Estimated		Stress		Q-value	Rock Mass Geological
(ft) To (ft) (ft) To (ft) (ft)		(psi)	Intact Dook Intac	rt Rock Designat psi) (RQD	tion Spacing (f	1)	y Length (ft)	Inickness	Joint Roughness (Q)	(RMR)	Joint Alteration (Q)	Infilling (RMR)	Alteration	Joint Water (Q)	Conditions		Intact Rock RQI						Rating		ificatio N	Sumber (Ja) Roughnes	Alteration	Reduction	Vertical	Stress Condition	Reduction	Q-value C	lassification	Rating Strength (RMR ₀₀) Index (GSI)
1 '' 1 1 '' 1 1			'	psi) (KQD	"			(mm)		1 ` ′ 1						Rating	Rating	es Rati	ing Rating	Rating	Rating Ratin	ng Rating		(RMR)		Number (J) Number (Ja	(J _u)	Stress (psi)		Factor (SRF)			(RMR ₈₉) Index (GSI)
1745 1755 796.1 786.1 10	Qtz Monzonite	1,380		73	2.00	Two joint sets plus random joints	s 10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Highly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	2	0	13 15		6	1 6	1	10		r Rock	6 1	- 1	1	2013	High Stress, Jointed Rock	20		Very Poor	61 56
1755 1765 786.1 776.1 10	Qtz Monzonite / Pegmatite Dike	876		58	1.43	Two joint sets plus random joints	s 10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Decomposed	Dry excavations or minor inflow (humid or a few drips)	Damp	2	0	13 10		6	1 6	0	10		r Rock	6 1	1	1	2024	High Stress, Jointed Rock	20		Very Poor	55 50
1765 1775 776.1 766.1 10	Qtz Monzonite	567		48	5.00	Two joint sets plus random joints	s 10	Closed	Discontinuous joints	Slightly rough	Unaltered joint walls	None	Decomposed	Dry excavations or minor inflow (humid or a few drips)	Damp	1	0	8 15		6	3 6	0	10		r Rock	6 4	1	1	2036	High Stress, Jointed Rock	20	1.587	Poor	56 51
1775 1785 766.1 756.1 10 1785 1795 756.1 746.1 10	Qtz Monzonite	1 204	RI 4	450 43	10.00	Two joint sets plus random joints	s 10	Closed	Discontinuous joints	Slightly rough	Unaltered joint walls	None	Highly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	1	8 20 8 15			3 6	1 1	10		r Rock	6 4	1 !	1 :	2047	High Stress, Jointed Rock	20	1.436 0.387	Poor	62 57
1795 1805 746.1 736.1 10	Qtz Monzonite Otz Monzonite / Diorite	17.321		46	1.67	Two joint sets plus random joints Two joint sets plus random joints	s 10	Closed	Smooth, planar Rough, irregular, planar	Slightly rough Slightly rough	Unaltered joint walls Unaltered joint walls	None None	Moderately altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	12	0	13 10		0	3 6	3	10		r Rock d Rock	6 16	1 :	1 :	2039	High Stress, Jointed Rock High Stress, Jointed Rock	20	8.464	Very Poor Fair	70 55
1805 1815 736.1 726.1 10	Otz Monzonite / Permatite Dike	17,321	P4 10	1.875 84	2.00	Two joint sets plus random joints	10	Closed	Rough or irregular, undulating	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	2	17 15	2	0 6	5 6	5	10		d Rock	6 3	1 i	1 :	2082	High Stress, Jointed Rock	4	10.561	Good	78 73
1815 1825 726.1 716.1 10	Otz Monzonite	21.244		66	2.50	Two joint sets plus random joints	10	Closed	Rough or irregular, undulating	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	13 15	2	6	3 6	5	10		d Rock	6 3	l i	I i	2093	Medium Stress	l i l	33.050	Good	77 72
1825 1835 716.1 706.1 10	Qtz Monzonite / Pegmatite Dike	8.005		57	0.67	Two joint sets plus random joints	s 10	Closed	Rough, irregular, planar	Slightly rough	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	13 10	2	6	3 6	6	10		d Rock	6 1.5	i	l i	2105	High Stress, Jointed Rock	6	2.356	Poor	68 63
1835 1845 706.1 696.1 10	Otz Monzonite	32,797		65	1.67	Two joint sets plus random joints	s 10	Closed	Smooth, planar	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	13 10	2	6	3 6	5	10		d Rock	6 1	i	l i	2116	Medium Stress	î î	10.915	Good	72 67
1845 1855 696.1 686.1 10	Qtz Monzonite / Pegmatite Dike	. ,,,,,,	R4 10	0,875 73	1.43	Two joint sets plus random joints	s 10	Closed	Rough or irregular, undulating	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13 10	2	6	5 6	5	10	64 Good	d Rock	6 3	1	1	2128	High Stress, Jointed Rock	4	9.081	Fair	69 64
1855 1865 686.1 676.1 10	Qtz Monzonite / Diorite	13,486		75	1.67	Two joint sets plus random joints	s 10	Closed	Rough, irregular, planar	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	13 10	2	6	5 6	5	10	64 Good	d Rock	6 1.5	1	1	2139	High Stress, Jointed Rock	2	9.341	Fair	69 64
1865 1875 676.1 666.1 10	Qtz Monzonite	30,767		64	1.67	Two joint sets plus random joints	s 10	Closed	Rough, irregular, planar	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	13 10		6	5 6	5	10		d Rock	6 1.5	1	1	2151	Medium Stress	1	15.970	Good	74 69
1875 1885 666.1 656.1 10	Qtz Monzonite	19,328		37	1.67	Two joint sets plus random joints		Closed			Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8 10		6	3 6	3	10		r Rock	6 3	1	1	2162	High Stress, Jointed Rock	2	9.193	Fair	65 60
1885 1895 656.1 646.1 10	Qtz Monzonite),875 10	1.67	Two joint sets plus random joints	s 10	Closed	Rough or irregular, undulating	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	3 10		6	5 6	5	10		r Rock	6 3	1	1 1	2174	High Stress, Jointed Rock	4	1.228	Poor	59 54
1895 1905 646.1 636.1 10 1905 1915 636.1 626.1 10	Qtz Monzonite	10.194	R4 10	0,875 39	1.43	Two joint sets plus random joints	s 10	Closed	Rough or irregular, undulating	Rough	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8 10	2		5 6	3	10		r Rock	6 15	1 !	1 :	2185 2197	High Stress, Jointed Rock	4	4.848 2.313	Fair	62 57
1915 1925 626.1 616.1 10	Qtz Monzonite / Diorite Otz Monzonite	10,194	P4 10	1.875 39	0.43	Two joint sets plus random joints Two joint sets plus random joints		Closed	Rough, irregular, planar Rough, irregular, planar	Slightly rough Rough	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	,	2	8 8	2	0	5 6	1 3	10		r Rock	6 1.5	1 :	1 :	2208	High Stress, Jointed Rock High Stress, Jointed Rock	4	2.454	Poor Poor	60 55
1925 1935 616.1 606.1 10	Otz Monzonite			1.875 35	0.42	Two joint sets plus random joints	10	Closed	Discontinuous joints	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	1 '2	8 10	2	0 6	3 6	1 5	10		r Rock	6 4	1 i	1 :	2220	High Stress, Jointed Rock	7	5.807	Fair	62 57
1935 1945 6061 5961 10	Otz Monzonite	14.437	K-4 10	1,873 33	1.11	Two joint sets plus random joints	10	Closed	Smooth, undulating	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	2	6	8 10	2	0 6	3 6	1 5	10		r Rock	6 2	1 i	1 :	2231	High Stress, Jointed Rock		7.532	Fair	62 57
1945 1955 596.1 586.1 10	Otz Monzonite / Diorite	14,437	R4 10	1.875	3.33	Two joint sets plus random joints	s 10	Closed	Discontinuous ioints	Rough	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	ó	7	3 15	2	6	5 6	6	10		r Rock	6 4	i	l i	2243	High Stress, Jointed Rock	4	2.948	Poor	65 60
1955 1965 586.1 576.1 10	Qtz Monzonite		R4 10	0,875 21	2.50	Two joint sets plus random joints	s 10	Closed	Rough, irregular, planar	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	3 15	2	6	3 6	5	10	57 Fair	r Rock	6 1.5	1	1	2254	High Stress, Jointed Rock	4	1.300	Poor	62 57
1965 1975 576.1 566.1 10	Qtz Monzonite		R4 10	0,875 48	1.43	Two joint sets plus random joints	s 10	Closed	Rough or irregular, undulating	Rough	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8 10	2	6	5 6	3	10	57 Fair	r Rock	6 3	1	1	2266	High Stress, Jointed Rock	4	5.941	Fair	62 57
1975 1985 566.1 556.1 10	Qtz Monzonite	5,884		47	2.50	Two joint sets plus random joints	s 10	Closed	Rough or irregular, undulating	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	4	0	8 15	2	6	5 6	5	10	61 Good	d Rock	6 3	1	1	2277	High Stress, Jointed Rock	10	2.342	Poor	66 61
1985 1995 556.1 546.1 10	Qtz Monzonite		R4 10	0,875 44		Two joint sets plus random joints	s 10	Closed	Rough, irregular, planar	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8 15	2	6	5 6	5	10		d Rock	6 1.5	1	1	2289	High Stress, Jointed Rock	4	2.764	Poor	69 64
1995 2005 546.1 536.1 10	Qtz Monzonite	2,821		68	2.50	Two joint sets plus random joints	s 10	Closed	Rough, irregular, planar	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	2	0	13 15		6	5 6	5	10		d Rock	6 1.5	1	1	2300	High Stress, Jointed Rock	20	0.847	Very Poor	69 64
2005 2015 536.1 526.1 10	Qtz Monzonite	12,252		47	1.11	Two joint sets plus random joints		Closed	Rough, irregular, planar	Rough	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	8 10		6	5 6	3	10		r Rock	6 1.5	1	1	2312	High Stress, Jointed Rock	4	2.924	Poor	62 57
2015 2025 526.1 516.1 10 2025 2035 516.1 506.1 10	Qtz Monzonite Otz Monzonite	20,194 10,688		50	0.77	Two joint sets plus random joint: Two joint sets plus random joint:	s 10	Closed Closed	Discontinuous joints	Slightly rough	Unaltered joint walls Unaltered joint walls	None None	Moderately altered Unaltered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8 10	2	6	3 6	3	10		r Rock d Rock	6 4	1	1 1	2323	High Stress, Jointed Rock High Stress, Jointed Rock	2	16.523 3.790	Good Poor	65 60
2025 2035 516.1 506.1 10	Qtz Monzonite	14,204		20	0.67	Two joint sets plus random joint:	s 10	Closed	Rough, irregular, planar Rough, irregular, planar	Rough Rough	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (numid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	,	0	8 10	2	0	5 6	0	10		r Rock	6 1.5	1 :	1 :	2335	High Stress, Jointed Rock	4	3.438	Poor	70 65
2045 2055 4961 4861 10	Qtz Monzonite / Diorite	17,711		45	0.91	Two joint sets plus random joints	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8 8	2	0 6	1 6	6	10		r Rock	6 1	1 i	1 :	2358	High Stress, Jointed Rock	2	3,763	Poor	64 59
2055 2065 4861 4761 10	Otz Monzonite	14.628		66	3 33	Two joint sets plus random joints		Healed	Smooth, planar	Smooth	Tightly healed, hard	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	13 15	2	6	ili	5	10		d Rock	6 1	0.75	I i	2369	High Stress, Jointed Rock	2	7.338	Fair	73 68
2065 2075 476.1 466.1 10	Otz Monzonite	18,597		66	2.50	Two joint sets plus random joints	s 10	Closed	Smooth, undulating	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	13 15	2	6	3 6	5	10		d Rock	6 2	1	l i	2381	High Stress, Jointed Rock	2	10.992	Good	77 72
2075 2085 466.1 456.1 10	Qtz Monzonite		R4 10	0,875 70	1.00	Two joint sets plus random joints	s 10	Closed	Rough, irregular, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13 10	2	6	1 6	5	10	60 Fair	r Rock	6 1.5	1	1	2392	High Stress, Jointed Rock	4	4.394	Fair	65 60
2085 2095 456.1 446.1 10	Qtz Monzonite		R4 10	0,875 45	1.11	Two joint sets plus random joints	s 10	Closed	Rough or irregular, undulating	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8 10	2	6	3 6	5	10	57 Fair	r Rock	6 3	1	1	2404	High Stress, Jointed Rock	4	5.648	Fair	62 57
2095 2105 446.1 436.1 10	Qtz Monzonite / Pegmatite Dike	7,005		60	1.25	Two joint sets plus random joints		Closed	Rough or irregular, undulating	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	4	0	13 10		6	5 6	5	10		d Rock	6 3	1	1	2415	High Stress, Jointed Rock	8	3.758	Poor	66 61
2105 2115 436.1 426.1 10	Qtz Monzonite	1),875 29	0.67	Two joint sets plus random joints		Closed	Rough or irregular, undulating	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8 10	2	6	5 6	5	10		r Rock	6 3	1	1	2427	High Stress, Jointed Rock	4	3.575	Poor	64 59
2115 2125 426.1 416.1 10	Qtz Monzonite	22.54-	R4 10	0,875 39	0.83	Two joint sets plus random joints	s 10	Closed	Rough or irregular, undulating	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8 10	2	6	3 6	5	10		r Rock	6 3	1 !	1 !	2438	High Stress, Jointed Rock	4	4.856	Fair	62 57
2125 2135 416.1 406.1 10 2135 2145 406.1 396.1 10	Qtz Monzonite	23,549	D4 1	1875 34	0.91	Two joint sets plus random joints	s 10	Closed	Rough, irregular, planar	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8 10			5 6	,	10		d Rock	6 1.5	1 !	1 :	2450 2461	High Stress, Jointed Rock	2	5.355 2.124	Fair	69 64
2135 2145 406.1 396.1 10 2145 2155 396.1 386.1 10	Qtz Monzonite / Diorite Otz Monzonite	15.270	R4 10	1,875 34	0.71	Two joint sets plus random joints Two joint sets plus random joints	s 10	Closed	Rough, irregular, planar	Slightly rough	Unaltered joint walls	None None	Moderately altered Moderately altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8 10			3 6	3	10		r Rock d Rock	6 1.5	1 !	1 :	2461	High Stress, Jointed Rock High Stress, Jointed Rock	4	16,403	Poor Good	60 55
2145 2155 396.1 386.1 10	Qtz Monzonite	15,582		69		Two joint sets plus random joint:	s 10	Closed	Rough or irregular, undulating Smooth, planar	Rough Smooth	Unaltered joint walls Unaltered joint walls	None	Moderately altered Moderately altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	12	0	13 10		0	3 6	3	10		d Rock	6 3	1 :	1 :	2473	High Stress, Jointed Rock	2	5.716	Fair	12 67
2165 2175 376.1 366.1 10	Qtz Monzonite	17,410		40	0.91	Two joint sets plus random joints	s 10	Closed	Smooth, undulating	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8 10		0 6	1 6	6	10		d Rock	6 2	1 i	1 :	2496	High Stress, Jointed Rock	2	6.605	Fair	66 61
2175 2185 3661 3561 10	Otz Monzonite	14.116		66	0.91	Two joint sets plus random joints	10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	13 10		6	i 6	6	10		d Rock	6 1	l i	I i	2507	High Stress, Jointed Rock	4	2,740	Poor	66 61
2185 2195 356.1 346.1 10	Otz Monzonite	13,316	1 1	43	1.00	Two joint sets plus random joints		Closed	Rough, irregular, planar	Rough	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	8 10		1 6	5 6	6	10		r Rock	6 1.5	I i	I i	2519	High Stress, Jointed Rock	4	2.696	Poor	65 60
2195 2205 346.1 336.1 10	Qtz Monzonite	.,,,,,,	R4 10	0,875 52	1.25			Closed	Rough, irregular, planar	Rough	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13 10	2	6	5 6	6	10		d Rock	6 1.5	i	i	2530	High Stress, Jointed Rock	4	3.235	Poor	70 65
2205 2215 336.1 326.1 10	Qtz Monzonite	12,684	1	73	1.43	Two joint sets plus random joints	s 10	Closed	Rough or irregular, undulating	Slightly rough	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	13 10	2	6	3 6	6	10	63 Good	d Rock	6 3	1	1	2542	High Stress, Jointed Rock	4	9.088	Fair	68 63
2215 2225 326.1 316.1 10	Qtz Monzonite / Diorite	8,716	1	23	0.83	Two joint sets plus random joints	s 10	Closed	Rough or irregular, undulating	Slightly rough	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	3 10		6	3 6	6	10		r Rock	6 3	1	1	2553	High Stress, Jointed Rock	6	1.929	Poor	58 53
2225 2235 316.1 306.1 10	Qtz Monzonite	21,557	1	27	1.67	Two joint sets plus random joints	s 10	Closed	Rough or irregular, undulating	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8 10		6	5 6	5	10		d Rock	6 3	1	1	2565	High Stress, Jointed Rock	2	6.708	Fair	69 64
2235 2245 306.1 296.1 10	Qtz Monzonite	29,192		65	0.91	Two joint sets plus random joints		Closed	Rough or irregular, undulating	Rough	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	13 10	2	6	5 6	3	10		d Rock	6 3	1 1	1 1	2576	Medium Stress	1	32.475	Good	72 67
2245 2255 296.1 286.1 10	Qtz Monzonite	1		0,875 78	1.67	Two joint sets plus random joints	s 10	Closed	Rough, irregular, planar	Slightly rough	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	17 10	2	6	3 6	3	10		d Rock	6 1.5	1	1 1	2588	High Stress, Jointed Rock	6	3.248	Poor	69 64
2255 2265 286.1 276.1 10 2265 2275 276.1 266.1 10	Qtz Monzonite	12.700	R4 10	0,875 79		Two joint sets plus random joints	s 10	Closed	Rough or irregular, undulating	Rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	17 15	2	6	5 6	5	10		d Rock	6 3	1 1	1 !	2599 2611	High Stress, Jointed Rock	6	6.608	Fair	78 73
2205 2275 276.1 266.1 10	Qtz Monzonite	13,789	1	45	1.67	Two joint sets plus random joint: Two joint sets plus random joint:	s 10 s 10	Closed	Smooth, planar Rough or irregular, undulating	Smooth Rough	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	12	0	8 10	2	1 6	1 6	1 3	10	55 Fair	r Rock	6 1	1 :	1 :	2611	High Stress, Jointed Rock High Stress, Jointed Rock	4	1.885	Poor	60 55
22/3 2283 200.1 230.1 10	Qiz Monzonite	23,311		40	0.77	r wo joint sets pitts random joints	s 10	Closed	Rough of meguar, undulating	Kougn	Chancieu Joint Walls	ryone	Sugarry aftered	Dry excavations or minor inflow (numid or a few drips)	Damp	12	· ·	0 10			, ,	,	10	04 G00	u Rock	0 3			2022	riigii Siress, Jointed Rock	4	11,403	Good	07 64

Depth Elevation (MSL)	1		т т						Condition	of Discontinuities									Rock Mass	Rating (RMR) Clas	sification								Q-s	ystem			П	
Interva		Strength of Estimated		Rock Quality Fracti	Inc.		Aperture						1	Groundwater	Strength of S	itroneth of		Spacing of Di	continuit An	rture Discontin	uit Discontin	uit Weathering /	D.	ck Mass RN	ID.		oint Joint	Joint Water	Estimated		Street		Pock Mar	Caplanical
From (ft) To (ft) From (ft) To (ft) Thickne	ss Lithology	Intact Rock Strength o (psi) Intact Roc	Intact Rock E	Designation Spacing		Discontinui v Length (ft	Thickness	Joint Roughness (Q)	Roughness (RMR)	Joint Alteration (Q)	Infilling (RMR)	Weathering / Alteration	Joint Water (Q)	Conditions	Intact Rock I	ntact Rock RQ	QD Rating	Discontinuiti y	Length This	kness y Roughn	ess y Filling	g Alteration Grou	ndwater	tating Classif		Joint Set Ros	ghness Alteratio	Reduction		Stress Condition	Reduction	Q-value Q-value Classification	Rating	Strength
(11)		(400)	(psi)	(RQD)		y Length (it	(mm)		(KMK)			Atteration			Rating	Rating		es Rating	Rating Ra	ting Rating	Rating	Rating	tung (RMR) II		Nun	iber (J _r) Number ((J _n)	Stress (psi)		Factor (SRF)	Crassification	(RMR ₈₉)	Index (GSI)
1750 1760 798.8 788.8 10	Qtz Monzonite	1,264		70 1.6			Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	2	0	13	10	2	6 1	6	3	10	53 Fair		6	1 1	1	2018	High Stress, Jointed Rock	20	0.583 Very Poor	58	53
1760 1770 788.8 778.8 10	Qtz Monzonite	1,376		76 5.00	Two joint sets plus random jo		Closed	Discontinuous joints	Slightly rough	Unaltered joint walls	None	Highly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	2	0	17	15	2	6 3	6		10		Rock	6	4 1	1	2030	High Stress, Jointed Rock	20	2.533 Poor	67	62
1770 1780 778.8 768.8 10 1780 1790 768.8 758.8 10	Qtz Monzonite Otz Monzonite	1,162		76 0.16 60 0.16			Closed	Discontinuous joints Discontinuous joints	Slightly rough Slightly rough	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	2	0	17	5	2	6 3	6		10		Rock	6	4 1	1 1	2041	High Stress, Jointed Rock High Stress, Jointed Rock	20	2.533 Poor 2.000 Poor	61	56
1790 1800 758.8 748.8 10	Otz Monzonite	14.532		66 1.4			Closed	Rough or irregular, undulating	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	13	10	2	6 3	6	5	10		Rock	6	3 1	1 :	2064	High Stress, Jointed Rock	20	16.500 Good	72	67
1800 1810 748.8 738.8 10	Qtz Monzonite	4,844		58 1.2			Closed	Smooth, undulating	Smooth	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	4	0	13	10	2	6 1	6	3	10	55 Fair	Rock	6	2 1	i	2076	High Stress, Jointed Rock	12	1.611 Poor	60	55
1810 1820 738.8 728.8 10	Qtz Monzonite	12,788		42 0.83	Two joint sets plus random jo	ints 10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	8	10	2	6 1	6	5	10	55 Fair	Rock	6	1 1	1	2087	High Stress, Jointed Rock	2	3.500 Poor	60	55
1820 1830 728.8 718.8 10	Qtz Monzonite	R3	4,550	32 3.3	Two joint sets plus random jo		Closed	Smooth, undulating	Smooth	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	8	15	2	6 1	6	3	10	55 Fair	Rock	6	2 1	1	2099	High Stress, Jointed Rock	12	0.889 Very Poor	60	55
1830 1840 718.8 708.8 10 1840 1850 708.8 698.8 10	Qtz Monzonite	9,942 R3	4,550	41 3.3 47 3.3			Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	8	15	2	6 1	6	5	10	60 Fair	Rock	6	1 1	1	2110	High Stress, Jointed Rock	4	1.708 Poor 2.611 Poor	65	60
1850 1860 698.8 688.8 10	Qtz Monzonite Otz Monzonite	2.686	4,550	45 0.10			Closed	Discontinuous joints Discontinuous joints	Slightly rough Slightly rough	Unaltered joint walls Unaltered joint walls	None None	Moderately altered Highly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	2	0	8	15	2	6 3	6	3	10	57 Fair	Rock	6	4 1	1	2122	High Stress, Jointed Rock High Stress, Jointed Rock	20	2.611 Poor 1.500 Poor	48	43
1860 1870 688.8 678.8 10	Otz Monzonite	2,000 R3	4,550	51 2.51			Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	13	15	2	6 1	6	3	10	60 Fair	Rock	6	i I i	l i	2145	High Stress, Jointed Rock	12	0.708 Very Poor	65	60
1870 1880 678.8 668.8 10	Qtz Monzonite	R3	4,550	63 1.2:			Closed	Smooth, undulating	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	13	10	2	6 3	6	5	10	59 Fair	Rock	6	2 1	1	2156	High Stress, Jointed Rock	12	1.750 Poor	64	59
1880 1890 668.8 658.8 10	Qtz Monzonite	R3	4,550	56 2.00			Closed	Smooth, undulating	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	13	15	2	6 3	6	5	10	64 Good	Rock	6	2 1	1	2168	High Stress, Jointed Rock	12	1.556 Poor	69	64
1890 1900 658.8 648.8 10	Qtz Monzonite	10,538		36 1.43			Closed	Rough or irregular, undulating		Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	8	10	2	6 3	6	5	10	57 Fair	Rock	6	3 1	1	2179	High Stress, Jointed Rock	4	4.500 Fair	62	57
1900 1910 648.8 638.8 10 1910 1920 638.8 628.8 10	Qtz Monzonite Otz Monzonite	R4 R4	10,875 10,875	55 0.7° 48 1.2°			Closed	Rough, irregular, planar	Slightly rough	Unaltered joint walls	None None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	10	2	6 3	6		10	62 Good	Rock	6	1.5 1	1	2191 2202	High Stress, Jointed Rock High Stress, Jointed Rock	4	3.438 Poor 3.000 Poor	67	62
1920 1930 628.8 628.8 10	Otz Monzonite	12,360	10,875	29 0.7	Two joint sets plus random jo		Closed	Rough, irregular, planar Smooth, planar	Slightly rough Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	7	0	8	10	2	6 1	6	5	10	57 Fair	Rock	6	1.5	1	2202	High Stress, Jointed Rock	4	1.208 Poor	60	57
1930 1940 618.8 608.8 10	Otz Monzonite	R4	10.875	39 0.7			Healed	Rough, irregular, planar	Slightly rough	Tightly healed, hard	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	ó	7	8	10	2	6 3	4	5	10	55 Fair	Rock	6	1.5 0.75	i	2225	High Stress, Jointed Rock	4	3.250 Poor	60	55
1940 1950 608.8 598.8 10	Qtz Monzonite	R4	10,875	48 3.3	Two joint sets plus random jo	ints 10	Healed	Rough or irregular, undulating	Slightly rough	Tightly healed, hard	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8	15	2	6 3	4	5	10	60 Fair	Rock	6	3 0.75	1	2237	High Stress, Jointed Rock	4	8.000 Fair	65	60
1950 1960 598.8 588.8 10	Qtz Monzonite	17,498	1 1	32 1.00			Closed	Rough, irregular, planar	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	12	0	8	10	2	6 3	6	5	10	62 Good	Rock	6	1.5	1	2248	High Stress, Jointed Rock	2	4.000 Fair	67	62
1960 1970 588.8 578.8 10	Qtz Monzonite	R3	4,550	48 1.2:			Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	8	10	2	6 1	6	3	10	50 Fair	Rock	6	1 1	1	2260	High Stress, Jointed Rock	14	0.571 Very Poor	55	50
1970 1980 578.8 568.8 10 1980 1990 568.8 558.8 10	Diorite / Qtz Monzonite Otz Monzonite	9.962 R3	4,550	57 1.2: 47 0.9	Two joint sets plus random jo Two joint sets plus random io		Closed	Smooth, undulating Rough or irregular, undulating	Smooth Slightly rough	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	0	4	13	10	2	6 1	6	5	10	57 Fair	Rock	6	2 1	1	2271	High Stress, Jointed Rock High Stress, Jointed Rock	14	1.357 Poor 5.875 Fair	62	57
1990 2000 558.8 548.8 10	Otz Monzonite	9,902 R3	4,550	43 1.4			Closed	Rough, irregular, planar	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	6	4	8	10	2	6 3	6	5	10	54 Fair	Rock	6	15	1 1	2294	High Stress, Jointed Rock	14	0.768 Very Poor	59	5/
2000 2010 548.8 538.8 10	Otz Monzonite	R3	4,550	38 0.8	Two joint sets plus random is		Closed	Smooth, undulating	Smooth	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	8	10	2	6 1	6	3	10	50 Fair	Rock	6	2 1	i	2306	High Stress, Jointed Rock	14	0.905 Very Poor	55	50
2010 2020 538.8 528.8 10	Qtz Monzonite	12,028	1	43 1.2:	Two joint sets plus random jo	ints 10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	8	10	2	6 1	6	6	10	56 Fair	Rock	6	1 1	1	2317	High Stress, Jointed Rock	4	1.792 Poor	61	56
2020 2030 528.8 518.8 10	Diorite / Qtz Monzonite	R3	4,550	60 1.00			Healed	Smooth, planar	Smooth	Tightly healed, hard	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	13	10	2	6 1	4	5	10	55 Fair	Rock	6	1 0.75	1	2329	High Stress, Jointed Rock	14	0.952 Very Poor	60	55
2030 2040 518.8 508.8 10	Diorite / Qtz Monzonite	R3	4,550	38 1.00			Healed	Smooth, planar	Slightly rough	Tightly healed, hard	Hard filling >5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	8	10	2	6 3	2	5	10	50 Fair	Rock	6	1 0.75	1	2340	High Stress, Jointed Rock	14	0.603 Very Poor	55	50
2040 2050 508.8 498.8 10 2050 2060 498.8 488.8 10	Qtz Monzonite Otz Monzonite	R3 R3	4,550	51 1.6° 42 2.00			Healed Closed	Rough, irregular, planar Rough or irregular, undulating	Slightly rough Slightly rough	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	0	4	13	10	2	6 3	6	5	10	59 Fair	Rock	6	1.5	1	2352	High Stress, Jointed Rock High Stress, Jointed Rock	#DIV/0!	#N/A 1.500 Poor	64	59
2060 2070 488.8 478.8 10	Diorite / Otz Monzonite	R3	4,550	42 1.6			Closed	Rough or irregular, undulating		Tightly healed, hard	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	8	10	2	6 3	6	5	10	54 Fair	Rock	6	3 0.75	1 :	2375	High Stress, Jointed Rock	14	2.000 Poor	59	54
2070 2080 478.8 468.8 10	Diorite / Otz Monzonite	R4	10.875	74 3.3			Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	15	2	6 1	6	5	10	65 Good	Rock	6	1 1	i	2386	High Stress, Jointed Rock	4	3.083 Poor	70	65
2080 2090 468.8 458.8 10	Diorite / Qtz Monzonite	R4	10,875	62 2.50	Two joint sets plus random jo	ints 10	Closed	Discontinuous joints	Smooth	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	13	15	2	6 1	6	6	10	66 Good	Rock	6	4 1	1	2398	High Stress, Jointed Rock	4	10.333 Good	71	66
2090 2100 458.8 448.8 10	Qtz Monzonite	13,124		46 1.43			Healed	Rough, irregular, planar	Slightly rough	Tightly healed, hard	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	8	10	2	6 3	4	5	10	55 Fair	Rock	6	1.5 0.75	1	2409	High Stress, Jointed Rock	4	3.833 Poor	60	55
2100 2110 448.8 438.8 10	Qtz Monzonite	R4	10,875	33 0.7	Two joint sets plus random jo		Healed	Rough, irregular, planar	Slightly rough	Tightly healed, hard	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8	10	2	6 3	4	5	10	55 Fair	Rock	6	1.5 0.75	1	2421	High Stress, Jointed Rock	4	2.750 Poor	60	55
2110 2120 438.8 428.8 10 2120 2130 428.8 418.8 10	Qtz Monzonite Otz Monzonite	10,646 R4	10.875	63 1.6° 52 1.00			Closed	Rough, irregular, planar Smooth, planar	Slightly rough Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	7	0	13	10	2	6 3	6	5	10	62 Good	Rock	6	1.5	1	2432	High Stress, Jointed Rock High Stress, Jointed Rock	4 1	3.938 Poor 2.167 Poor	67	62
2130 2140 418.8 408.8 10	Otz Monzonite	R4	10,875	21 2.00			Closed	Discontinuous joints	Slightly rough	Unaltered joint walls	None	Unaltered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	3	15	2	6 3	6	6	10	58 Fair	Rock	6	4 1	1 :	2455	High Stress, Jointed Rock	4	3.500 Poor	63	58
2140 2150 408.8 398.8 10	Qtz Monzonite	R3	4,550	3 0.10			Closed	Discontinuous joints	Slightly rough	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	3	5	2	6 3	6	5	10	44 Fair	Rock	6	4 1	i	2467	High Stress, Jointed Rock	16	0.125 Very Poor	49	44
2150 2160 398.8 388.8 10	Qtz Monzonite	R3	4,550	25 2.50	Two joint sets plus random jo	ints 10	Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	8	15	2	6 1	6	5	10	57 Fair	Rock	6	1 1	1	2478	High Stress, Jointed Rock	16	0.260 Very Poor	62	57
2160 2170 388.8 378.8 10	Qtz Monzonite	R3	4,550	40 2.00			Closed	Rough, irregular, planar	Slightly rough	Unaltered joint walls	None	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	8	15	2	6 3	6	3	10	57 Fair	Rock	6	1.5	1	2490	High Stress, Jointed Rock	16	0.625 Very Poor	62	57
2170 2180 378.8 368.8 10	Qtz Monzonite	R3	4,550	57 1.6	Two joint sets plus random jo		Healed	Smooth, planar	Slightly rough	Tightly healed, hard	Hard filling <5mm	Moderately altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	13	10	2	6 3	4	3	10	55 Fair	Rock	6	1 0.75	1	2501	High Stress, Jointed Rock	16	0.792 Very Poor	60	55
2180 2190 368.8 358.8 10 2190 2200 358.8 348.8 10	Qtz Monzonite	R3	4,550 4,550	58 1.43 32 1.00	Two joint sets plus random jo		Healed	Rough, irregular, planar Smooth, planar	Rough Slightly rough	Tightly healed, hard	Hard filling <5mm None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	13	10	2	6 5	4	5	10	59 Fair	Rock Rock	6	1.5 0.75	1	2513	High Stress, Jointed Rock High Stress, Jointed Rock	16	1.208 Poor 0.333 Very Poor	64	59
2190 2200 358.8 348.8 10 2200 2210 348.8 338.8 10	Qtz Monzonite Otz Monzonite	R3 R3	4,550	61 2.50			Healed Closed	Smooth, planar Rough or irregular, undulating	Slightly rough Smooth	Unaltered joint walls Unaltered joint walls	None None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp Damp	ı ö	4	13	15	2	6 1	6	5	10	62 Good	Rock	6	3 1	1 1	2524 2536	High Stress, Jointed Rock High Stress, Jointed Rock	16	0.333 Very Poor 1.906 Poor	67	62
2210 2220 338.8 328.8 10	Qtz Monzonite	R3	4,550	53 1.00			Healed	Discontinuous joints	Slightly rough	Tightly healed, hard	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	13	10	2	6 3	4	5	10	57 Fair	Rock	6	4 0.75	i	2547	High Stress, Jointed Rock	16	2.944 Poor	62	57
2220 2230 328.8 318.8 10	Qtz Monzonite	R3	4,550	30 0.7	Two joint sets plus random jo		Healed	Discontinuous joints	Smooth	Tightly healed, hard	Hard filling <5mm	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	4	8	10	2	6 1	4	5	10	50 Fair	Rock	6	4 0.75	1	2559	High Stress, Jointed Rock	16	1.667 Poor	55	50
2230 2240 318.8 308.8 10	Qtz Monzonite	R4	10,875	41 0.7			Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	8	10	2	6 1	6	5	10		Rock	6	1 1	1	2570	High Stress, Jointed Rock	6	1.139 Poor	60	55
2240 2250 308.8 298.8 10	Qtz Monzonite	12,614	I	42 1.1			Closed	Smooth, planar	Smooth	Unaltered joint walls	None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	7	0	8	10	2	6 1	6	5	10	55 Fair		6	1 1	1	2582	High Stress, Jointed Rock	4	1.750 Poor	60	55
2250 2260 298.8 288.8 10 2260 2270 288.8 278.8 10	Qtz Monzonite Otz Monzonite	R4 R4	10,875	13 1.1 26 1.0	Two joint sets plus random jo Two joint sets plus random io		Closed	Rough, irregular, planar	Slightly rough	Unaltered joint walls	None None	Slightly altered	Dry excavations or minor inflow (humid or a few drips)	Damp	0	7	3	10	2	6 3	6	5	10	52 Fair	Rock	6	1.5	1 1	2593	High Stress, Jointed Rock High Stress, Jointed Rock	6	0.542 Very Poor 0.722 Very Poor	57	52
2270 2280 278.8 268.8 10	Otz Monzonite	13.064	10,875	19 1.0			Closed	Smooth, planar Discontinuous joints	Smooth	Unaltered joint walls Unaltered joint walls	None	Slightly altered Slightly altered	Dry excavations or minor inflow (humid or a few drips) Dry excavations or minor inflow (humid or a few drips)	Damp	7	ó	3	10	2	6 1	6	5	10	50 Fair	Rock	6	4 1	1 1	2605 2616	High Stress Jointed Rock	4	0.722 Very Poor 3.167 Poor	55	50
200 270.0 200.0 10	- Vir monounit	15,004		-2 1.1	. TO JOHN AND JAMES SHIROHI JO		Load	- Antonimious politis	, JAHATAN	CHIRCLE JOHN WHILE	11000	Jugany ancieu	,	L'anny	,	·	,	10	-		3			· 730					2010		-			