

	effective thickness (m)	thickness (m) (cover)	log Ksat (cm/s)	Ksat (cm/s)	Ksat (m/yr)	geometric mean for RESRAD units (m/yr)	bulk density (g/cm2)	mean bulk density of combined unit	porosity (generally based on theta sat)	avg porosity for each unit	van Genuchten n	
						formula = L/[sum(Li)/sum(Ki )]		formula =sum[Li*densityi] /Ltotal				
cover		7.26										
Qbt3	27.432	20.172	-4.29	5.13E-05		1.62E+01		1.27		0.37		2.16 median from (Springer et al. 2005, 098534); from Table 6, Qbt3 at TA-21
Qbt2	24.384	24.384	-3.66	2.20E-04		6.94E+01		1.40		0.42		2.10 median from Appendix E - 2008 Area G PA/CA (Tables III-2 through III-7)
Qbt1v	19.812	19.812	-3.92	1.13E-04		3.57E+01		1.18		0.50		1.70 median from Appendix E - 2008 Area G PA/CA (Tables III-2 through III-7)
Qbt1g	30.48	30.48	-3.89	1.40E-04		4.42E+01		1.14		0.45		1.70 median from Appendix E - 2008 Area G PA/CA (Tables III-2 through III-7)
Unit 1		94.848				3.34E+01		1.25	1.24	0.44	0.44	
Qct	32.004	32.004		1.30E-04		4.10E+01		1.20		0.50		1.50 median from Appendix E - 2008 Area G PA/CA (Tables III-2 through III-7)
Unit 2		32.004				4.10E+01			1.20		0.50	
Qbo	52.4256	52.4256	-4.51	2.20E-04		6.94E+01		1.20		0.44		1.80 median from Appendix E - 2008 Area G PA/CA (Tables III-2 through III-7)
Qbog	4.2672	4.2672		1.47E-04		4.64E+01		0.80		0.67		4.00 median from Appendix E - 2008 Area G PA/CA (Table 4) = 1.5e-13 m2
Unit 3		56.6928				6.69E+01			1.17		0.46	
Puye	135.636	135.636		4.03E-05		1.27E+01		1.61		0.21		Att III - Hydraulic Properties for MDA T, Table 8 - draft report by Levitt and Stauffer
Unit 4		135.636				1.27E+01			1.61		0.21	2.30

From Dan Strobridge based on geologic model

Wellid	depth	thickness (ft)	zone	thickness (m)
R-60	0	10	Qu	3.048
R-60	10	90	Qbt3	27.432
R-60	100	80	Qbt2	24.384
R-60	180	65	Qbt1v	19.812
R-60	245	100	Qbt1g	30.48
R-60	345	105	Qct	32.004
R-60	450	172	Qbof	52.4256
R-60	622	14	Qbog	4.2672
R-60	636	244	Tvt2	74.3712
R-60	880	513	Tpf	156.3624
R-60	1393 ??		Tjfp	#VALUE!
water table	1325			

Table X-3. Comparison of Average Volumetric Water Contents by Geologic Unit from the MDA C Phase I and Phase II Investigations.  
From Brent's appendix

Unit	Phase I (%)	Phase II (%)	Phase II n samples	Se - Phase II	m=1-(1/n)	Se**0.5	1-Se**1/m	1-"p"*m	k = "O"*Q**2 (krel using vg- Mualem formatio n)	equivalent "b parameter " at these conditions	k=s**(2b+ 3)	k assuming equiv b = 1. for "Unit 1)	
Qbt3	8	7	12	0.19	0.537037	0.4349588	0.954967	0.0244422	2.60E-04	0.9790852	2.60E-04	2.42E-04	9.33E-01
Qbt2	8	8	7	0.19	0.5238095	0.4364358	0.9578157	0.0223232	2.17E-04	1.042887	2.17E-04	2.51E-04	1.15E+00
Qbt1g	12	12	17	0.24	0.4117647	0.4898979	0.9687537	0.0129864	8.26E-05	1.793799	8.26E-05	7.96E-04	9.64E+00
Qbt1v	6	8	14	0.18	0.4117647	0.421637	0.9849244	0.0062353	1.64E-05	1.6897066	1.64E-05	1.78E-04	1.08E+01
Qct	/	13	14	0.26	0.3333333	0.509902	0.982424	0.0058933	1.77E-05	2.5611755	1.77E-05		
Qbo	/	10	37	0.23	0.4444444	0.4767313	0.9643359	0.0160107	1.22E-04	1.5405536	1.22E-04		
Tpf				0.2	0.5652174	0.4472136	0.942009	0.0332026	4.93E-04	0.8657238	4.93E-04		

I want to estimate the "b parameter" based on the relevant van Genuchten properties and the average moisture content reported by Brent.

Using the eqn:  $k=s^{**}(2b+3)$ . Solve for b:  $b=1/2*[\ln(k)/\ln(s)-3]$