

Local Sensitivity Analysis Summary - 10 ppb BDCM single 1/4 Liter Drink							Summarized 2/21/15		
Cv	Calv	AUCv	MBDCM	Local Sensitivity Analysis					
Parameter	Rank	Parameter	Rank	Parameter	Rank	Parameter	Rank		
fqg	High	fqg	High	fqg	High	kabdc	High	Response: CvBDCM	
v1cbdc	High	v1cbdc	High	rqpc	High	pgbdc	High	Parameter	Rank
km1bdc	High	km1bdc	High	qpc	High	fqg	High	fqg	1.39
plbdc	High	plbdc	High	plbdc	High	rqpc	High	rqpc	-1.3
rqpc	High	rqpc	High	v1cbdc	High	qpc	High	qpc	1.3
qpc	High	pbbdc	High	km1bdc	High	fvgi	High	v1cbdc	-1
kabdc	High	qpc	High	kabdc	High	fvk	Med	km1bdc	1
pgbdc	High	kabdc	High	pgbdc	High	deadspace	Low	plbdc	-0.99
fvk	High	pgbdc	High	fvgi	High	v1cbdc	Low	kabdc	0.92
fvgi	High	fvgi	High	fvk	Med	km1bdc	Low	pgbdc	-0.77
pppbdc	Med	fvk	Med	fvbd	Med	fvl	Low	fvgi	-0.75
fqf	Med	pppbdc	Med	deadspace	Med	plbdc	Low	fvk	-0.54
fql	Med	fqf	Med	fql	Med	fql	Low	fvbd	-0.48
deadspace	Med	fql	Med	pppbdc	Low	pppbdc	Low	deadspace	-0.41
prpbdc	Med	deadspace	Med	prpbdc	Low	pbbdc	Low	pppbdc	-0.37
fvbd	Med	prpbdc	Med	fqf	Low	fqf	Low	fql	0.35
pbbdc	Low	fvbd	Med	pbbdc	Low	prpbdc	Low	fqf	-0.33
fvl	Low	fvl	Low	fvl	Low	fvbd	Low	prpbdc	0.23
fqk	Low	fqk	Low	fqk	Low	fvf	Low	pbbdc	0.19
fvf	Low	fvf	Low	pkbdc	Low	fqk	Low	fvl	-0.11
qsksa	Low	qsksa	Low	fvf	Low	pkbdc	Low	fqk	0.07
pfbdc	Low	pfbdc	Low	qsksa	Low	qsksa	Low	fvf	0.05
pkbdc	Low	pkbdc	Low	pskbdc	Low	pfbdc	Low	qsksa	-0.03
fsask	Low	fsask	Low	lsk	Low	pskbdc	Low	pfbdc	-0.03
lsk	Low	lsk	Low	pfbdc	Low	lsk	Low	pkbdc	-0.03
pskbdc	Low	pskbdc	Low	fsask	Low	fsask	Low	fsask	-0.02
vfcbdc	Low	vfcbdc	Low	vfcbdc	Low	vfcbdc	Low	lsk	0.02
vlum	Low	vlum	Low	vlum	Low	vlum	Low	pskbdc	0.01
pwsbdc	None	pwsbdc	None	pwsbdc	None	pwsbdc	None	vfcbdc	>0.01
kbdc	None	kbdc	None	kbdc	None	kbdc	None	vlum	>0.01
airexchang	None	airexchang	None	airexchang	None	airexchang	None		
volshwr	None	volshwr	None	volshwr	None	volshwr	None	¹ Parameters are ranked according to the results of a sensitivity analysis (1994, i.e. high – SC>0.5, low – SC<0.5). A Monte Carlo simulation was used to rank the parameters.	
qw	None	qw	None	qw	None	qw	None		
temp	None	temp	None	temp	None	temp	None		
kola	None	kola	None	kola	None	kola	None		

Parameter Ranking – Oral exposure, single 0.25 L drink of water containing 10 ppb BDCM¹

Response: Calv		Response: AUCv		Response: MBDCM	
Parameter	Rank	Parameter	Rank	Parameter	Rank
fqq	1.39	rqpco	-1.46	kabdcem	0.93
rqpco	-1.35	qpc	1.46	pgbdcm	-0.8
qpc	1.3	fqq	1.46	fqq	0.79
v1cbdcem	-1	plbdcm	-1	fvgi	-0.79
km1bdcm	1	v1cbdcem	-1	qpc	0.79
plbdcm	-0.99	km1bdcm	1	rqpco	-0.79
pbbdcem	0.95	kabdcem	0.94	deadspace	-0.25
kabdcem	0.92	pgbdcm	-0.84	v1cbdcem	0.05
pgbdcm	-0.77	fvgi	-0.83	km1bdcm	-0.05
fvgi	-0.75	fvbd	-0.6	fv1	0.04
fvbd	-0.48	fvk	-0.48	plbdcm	0.01
deadspace	-0.41	deadspace	-0.46	fql	>0.01
pppbdcem	-0.37	fql	0.35	pppbdcem	>0.01
fql	0.35	pppbdcem	-0.14	pbbdcem	>0.01
fqf	-0.33	prpbdcem	-0.14	fqf	>0.01
prpbdcem	0.23	fqf	-0.1	prpbdcem	>0.01
fv1	-0.11	pbbdcem	0.07	fvbd	>0.01
fqk	0.07	fv1	0.07	fvf	>0.01
fvf	0.05	fqk	0.06	fqk	>0.01
qsksa	-0.03	pkbdcm	-0.03	fvk	>0.01
pfbdcem	-0.03	fvf	0.02	pkbdcm	>0.01
pkbdcm	-0.03	qsksa	>0.01	qsksa	>0.01
fvk	-0.03	pskbdcm	>0.01	pfbdcem	>0.01
fsask	-0.02	lsk	>0.01	pskbdcm	>0.01
lsk	0.02	pfbdcem	>0.01	lsk	>0.01
pskbdcm	0.01	fsask	>0.01	fsask	>0.01
vfcbdcm	>0.01	vfcbdcm	>0.01	vfcbdcm	>0.01
vlum	>0.01	vlum	>0.01	vlum	>0.01

and shaded (dark to light as high, medium or low influence based on criteria proposed by Clewell et al. medium – 0.2<SC<0.5, and low SC<0.2. The highest absolute value of the SC achieved over the course of the link the parameters.

Local Sensitivity Analysis Summary - 10 ppb BDCM 10 min shower

Response: CvBDCM			Response: Calv			Response: AUCv			Response: MBDCM	
Parameter	Rank	category	Parameter	Rank	category	Parameter	Rank	category	Parameter	Rank
rqpc	1	high	rqpc	0.95	high	rqpc	0.79	high	qpc	1.27
qksa	-0.84	high	pbbdcm	0.95	high	fsask	0.75	high	volshwr	0.88
qpc	-0.82	high	qksa	-0.84	high	kbdcm	0.74	high	fql	0.74
fsask	0.78	high	volshwr	-0.83	high	qksa	0.73	high	fqq	0.66
fqq	-0.74	high	qpc	-0.82	high	pskbdcm	-0.72	high	fsask	0.55
kbdcm	0.7	high	fsask	0.78	high	lsk	-0.72	high	kbdcm	0.51
pskbdcm	-0.67	high	fqq	-0.74	high	fvbd	-0.52	high	rqpc	-0.51
lsk	-0.67	high	kbdcm	0.7	high	qpc	-0.5	high	kola	0.46
fvk	-0.49	med	lsk	0.62	high	fqq	-0.45	med	qw	0.41
volshwr	-0.45	med	pskbdcm	0.6	high	volshwr	-0.43	med	deadspace	-0.4
fql	-0.42	med	airexchange	-0.45	med	fql	-0.25	med	airexchange	-0.36
fvbd	-0.41	med	kola	0.44	med	prpbdc	-0.23	med	fvgi	-0.29
fqq	-0.4	med	fql	-0.42	med	kola	0.23	med	qksa	0.29
pppbdc	-0.32	med	fqq	-0.4	med	fqq	0.22	med	pgbdcm	-0.27
airexchange	-0.27	med	qw	0.39	med	airexchange	-0.22	med	pskbdcm	-0.26
deadspace	0.26	med	pppbdc	-0.32	med	qw	0.21	med	lsk	-0.26
prpbdc	0.25	med	deadspace	0.26	med	deadspace	0.16	low	prpbdc	-0.14
kola	0.24	med	prpbdc	0.25	med	fvl	0.12	low	pbbdcm	0.12
fqq	0.24	med	fvbd	-0.25	med	pkbdcm	-0.11	low	fvbd	0.1
qw	0.21	med	fvl	-0.13	low	pppbdc	-0.1	low	pppbdc	-0.08
pbbdcm	0.19	low	fqq	-0.07	low	fqq	-0.1	low	fqq	-0.08
fvl	0.13	low	fvgi	-0.06	low	pbbdcm	0.09	low	fvl	0.07
pkbdcm	-0.12	low	pfbdc	-0.04	low	fvk	-0.06	low	fqq	0.06
fvgi	-0.06	low	temp	0.03	low	fvgi	0.06	low	v1cbdc	0.06
pfbdc	-0.04	low	pkbdcm	-0.03	low	temp	0.02	low	km1bdcm	-0.06
temp	0.02	low	fvk	-0.02	low	fvf	>0.01	low	pkbdcm	-0.03
fvf	0.02	low	fvf	0.02	low	plbdcm	>0.01	low	temp	0.03

v1cbdcem	-0.01	low	v1cbdcem	-0.01	low	v1cbdcem	>0.01	low	fvk	-0.02
km1bdcm	0.01	low	km1bdcm	0.01	low	km1bdcm	>0.01	low	plbdcm	0.01
plbdcm	-0.01	low	plbdcm	-0.01	low	pfbdcem	>0.01	low	fvf	>0.01
pwsbdcm	>0.01	low	pwsbdcm	>0.01	low	pwsbdcm	>0.01	low	pfbdcem	>0.01
pgbdcm	>0.01	low	pgbdcm	>0.01	low	pgbdcm	>0.01	low	pwsbdcm	>0.01
vfcbdcm	>0.01	low	vfcbdcm	>0.01	low	vfcbdcm	>0.01	low	vfcbdcm	>0.01

¹Parameters are ranked and shaded (dark to light) as high, medium or low influence based on criteria proposed by Clewell et al. (1994) i.e. high – $SC > 0.5$, medium – $0.2 < SC < 0.5$, and low $SC < 0.2$. The highest absolute value of the SC achieved over the course of the sim was used to rank the parameters.

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