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**Mitman, Jeffrey**

**From:** Ferrante, Fernando  
**Sent:** Monday, December 28, 2009 2:26 PM  
**To:** Mitman, Jeffrey  
**Cc:** James, Lois  
**Subject:** Sensitivity Analysis  
**Attachments:** Breach Parameter Matrix.xls

Jeff,

This is my last version of the Excel sheet with an attempt to place the OFI data in some order. It becomes immediately apparent that there are some bigger subsets that were looked in more detail and a couple of smaller ones with less variation in the input. Additionally, some input parameters were barely varied at all (some are, in fact, constant throughout). I will look in more detail into these subsets and their comparison with each other outside of Excel, as I reached the limits of my experience in manipulating data in spreadsheets.

The larger subsets are:

**GROUP 1 FIXED VALUES:**

Keowee D/S Manning's number	Channel	0.035	Immediate Tailrace	0.035	
Keowee U/S Manning's number	Reservoir Tributaries	0.035	Reservoir Channels	0.035	Im

**GROUP 2 FIXED VALUES:**

Keowee D/S Manning's number	Channel	0.025	Immediate Tailrace	0.07	
Keowee U/S Manning's number	Reservoir Tributaries	0.035	Reservoir Channels	0.025	Immediate Tailrace

**GROUP 3 FIXED VALUES:**

Keowee D/S Manning's number	Channel	0.02	Immediate Tailrace	0.07	
Keowee U/S Manning's number	Reservoir Tributaries	0.035	Reservoir Channels	0.02	Im

**GROUP 4 FIXED VALUES:**

Keowee Parameters	Side Slopes (1) Dam Both 1:1 (2) M Dam Both 1:5-1 (3) W 3:45:1, E 2:03:1	3
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**GROUP 5 FIXED VALUES:**

B-70

Keowee Parameters	Breach Bottom Width (M. Dam) (feet)	650
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Thank you,

Fernando Ferrante, Ph.D.  
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1	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
2	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
3	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
4	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
5	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
6	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
7	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
8	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
9	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
10	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
11	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
12	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
13	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
14	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
15	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
16	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
17	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
18	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5
19	0.035	0.035	0.035	0.035	0.035	1	1	0	2	815.5

1	500	670	1	4	940	2
1	500	670	1	4	940	2
1	500	670	2	4	940	2
1	500	670	1	3	940	2
1	500	670	2	3	940	2
1	500	670	1	4	940	2
1	500	670	1	3	940	2
1	500	670	1	4	940	2
1	500	670	1	3	940	2
1	500	670	2	3	940	2
1	500	670	1	4	940	2
1	500	670	1	3	940	2
1	500	670	1	4	940	2
1	500	670	1	3	940	2
1	500	670	1	3	940	1
1	500	670	1	4	940	1
1	500	670	1	3	940	3
1	500	670	1	4	940	3
1	500	670	1	3	940	1
1	500	670	1	4	940	1
1	500	670	2	4	940	1

250	800	1108	830.7	792.5	819.5	n/a
500	800	1110	833.1	799.1	819.6	n/a
500	800	1110	837.8	800.9	820.6	n/a
500	800	1110	838.4	800.3	821	n/a
500	800	1110	841.1	801.5	821.2	n/a
600	800	1110	834.5	800.7	819.7	n/a
600	800	1110	840	802.1	821.1	n/a
500	825	1110	831.7	796	819.4	n/a
500	825	1110	835.9	797.1	820.5	n/a
500	825	1110	838	798.1	820.9	n/a
600	825	1110	833.2	797.6	819.7	n/a
600	825	1110	837.7	799	820.8	n/a
500	825	1110	835.6	797.1	820.5	n/a
500	825	1110	831.5	796	819.3	n/a
500	825	1110	837.3	798.3	820.8	n/a
500	825	1110	832.4	796.8	819.4	n/a
500	800	1110	838.1	800.3	820.9	n/a
500	800	1110	832.9	798.7	819.6	n/a
500	800	1110	837.5	800.3	820.5	n/a