



**INFORMATION SYSTEM ON OCCUPATIONAL EXPOSURE**

**General Distribution**

**July 2012**

**ISOE Information Sheet**

**North American Technical Center  
Information System on Occupational Exposure**

**North American Pressurized Water Reactor (PWR)  
2008 Occupational Dose Benchmarking Charts**

**NATC ISOE Information Sheet No. 08-4**

NATC ISOE Information Sheet No. 08-4 presents the North American Pressurized Water Reactor (PWR) occupational exposure results for FY 2008. Exposure categories per unit include refueling outage duration and dose, normal operations dose, and total dose.

The 2008 PWR charts are arranged in the following format:

**Table 1a-d: Outage Duration Quartiles**

**Table 2a-d : Outage Dose Quartiles**

**Table 3a-d : Normal Operation Dose Quartiles**

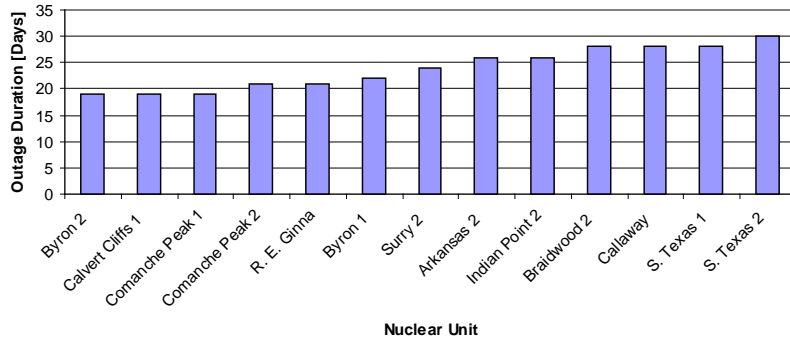
**Table 4a-d : Total Dose Quartiles**

**Table 5: 2008 PWR Occupation Dose Data**

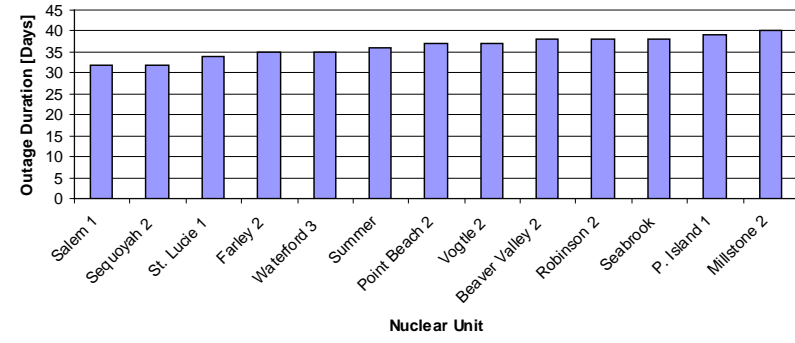
For reference, selected data for 2008 PWR collective dose per reactor unit is provided in the table below:

<b>Country</b>	<b>Collective Dose per Reactor (man.Sv)</b>
United States	0.68
Japan	1.57
France	0.66

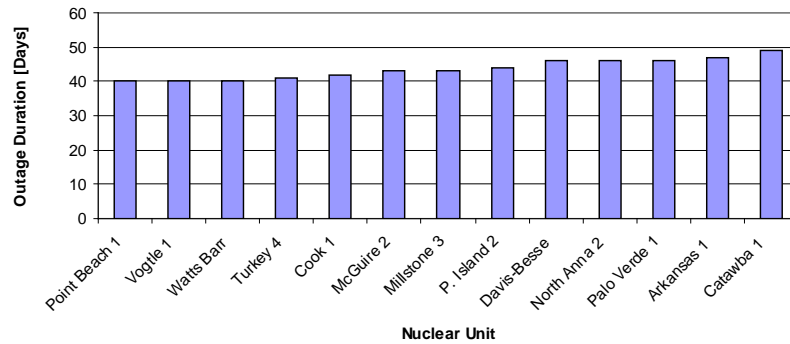
**Table 1a: Outage Duration - First Quartile**



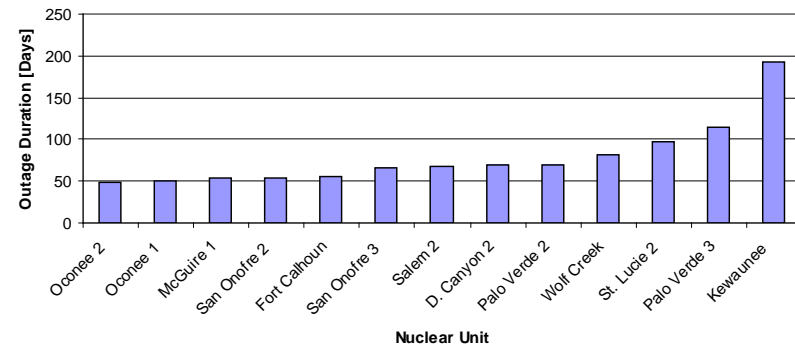
**Table 1b: Outage Duration - Second Quartile**



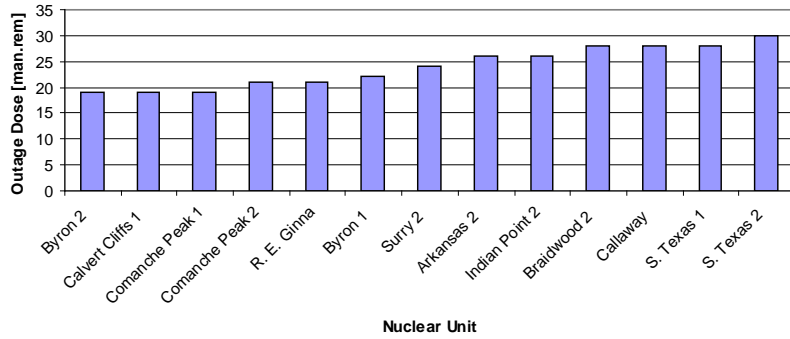
**Table 1c: Outage Duration - Third Quartile**



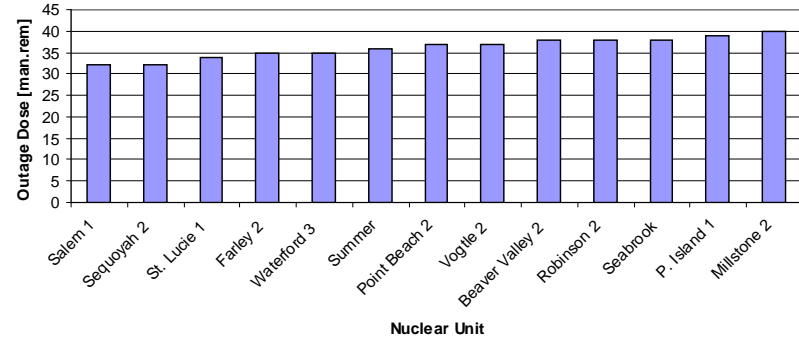
**Table 1d: Outage Duration - Fourth Quartile**



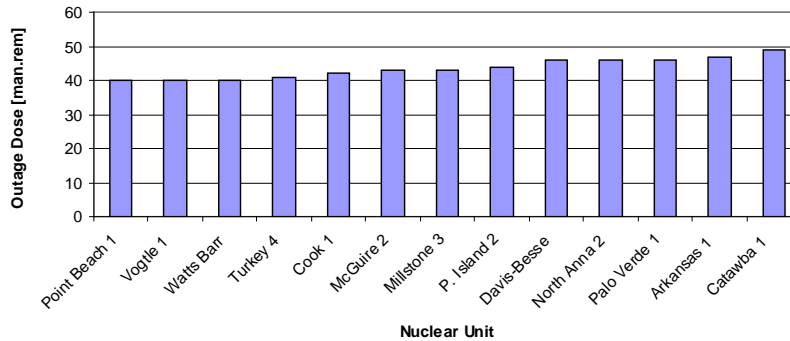
**Table 2a: Outage Dose - First Quartile**



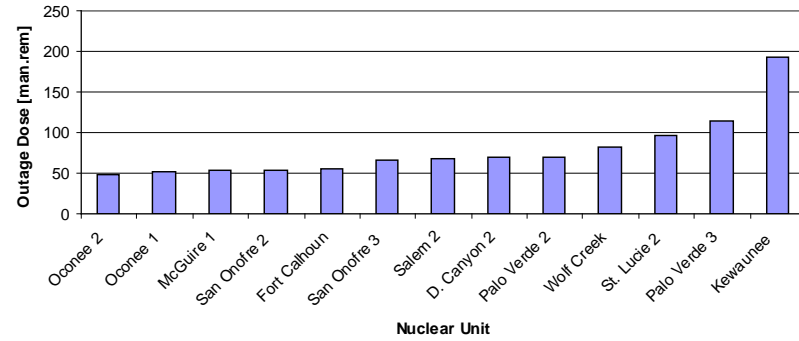
**Table 2b: Outage Dose - Second Quartile**

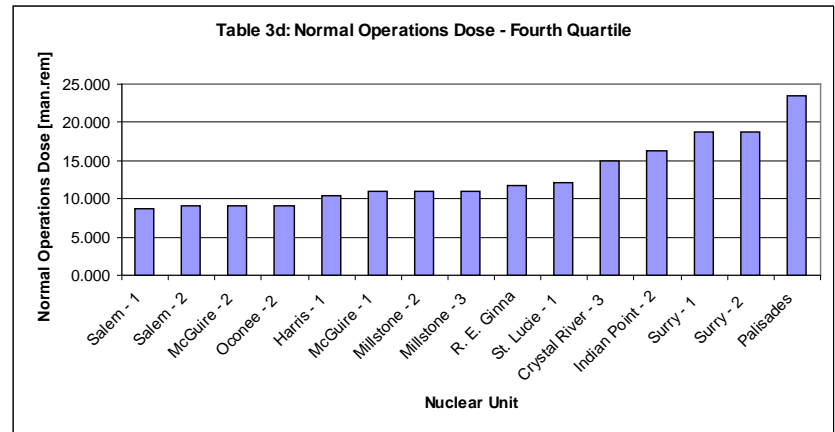
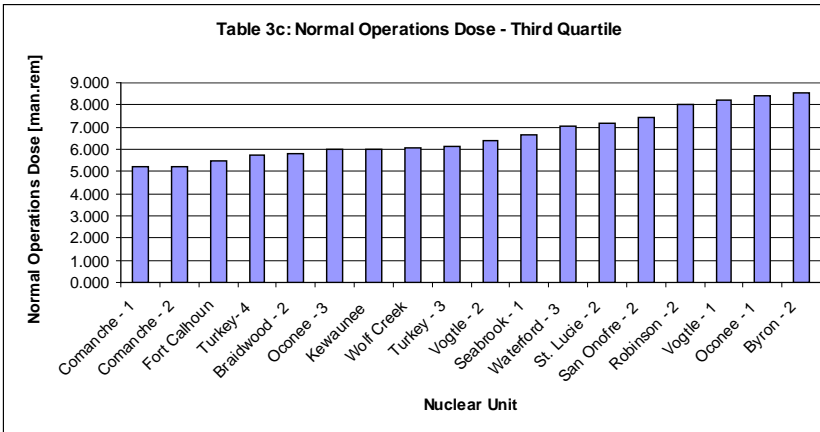
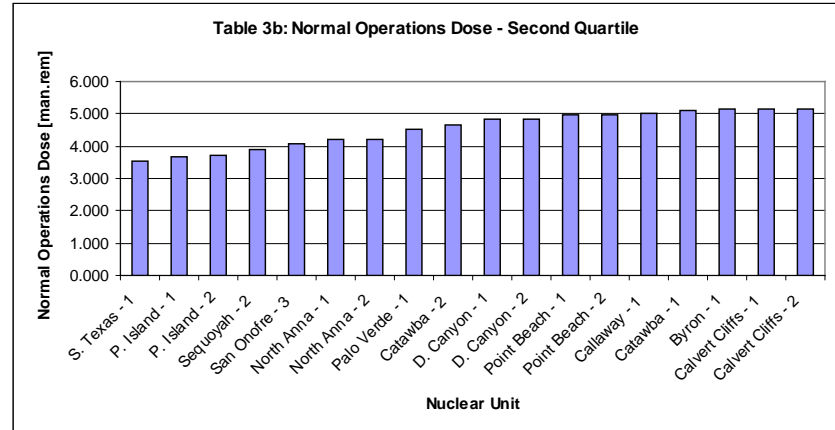
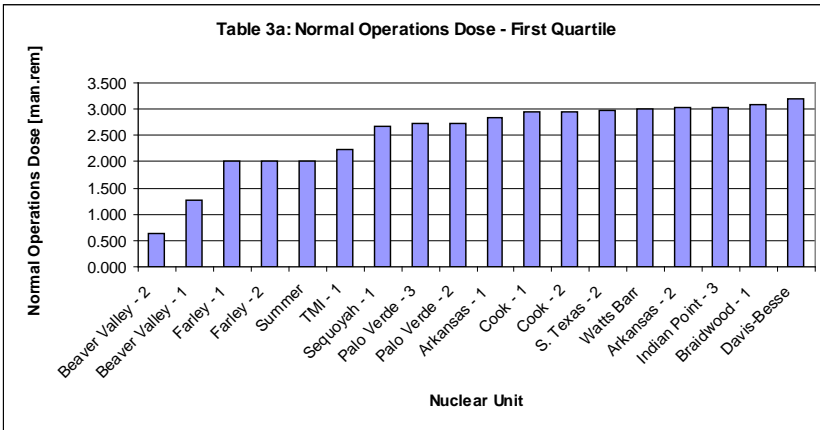


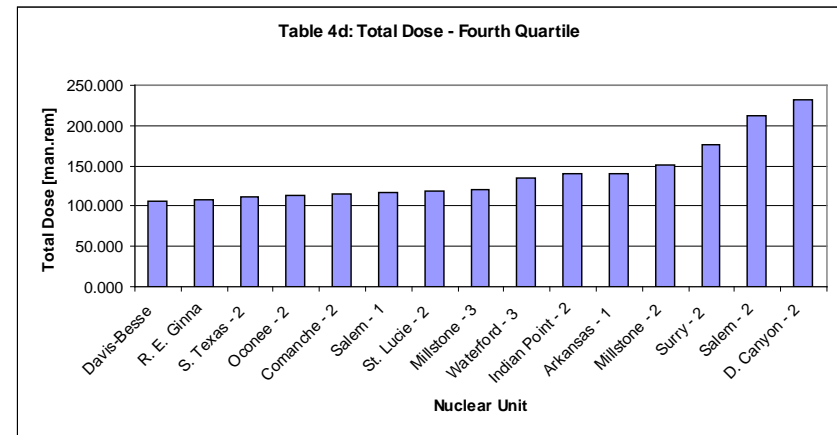
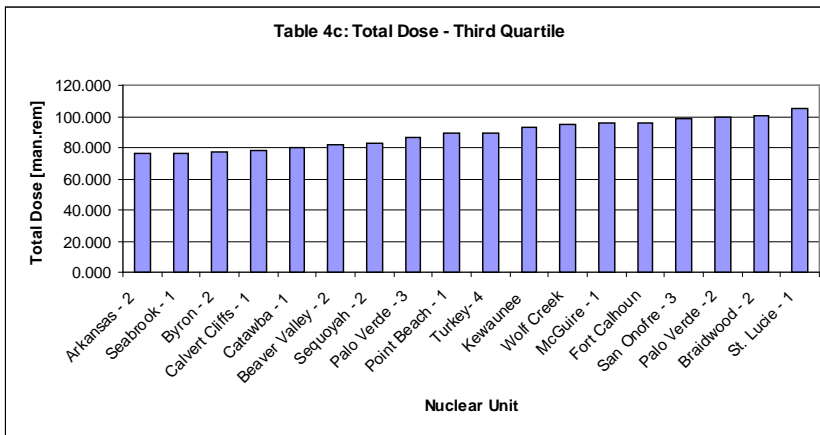
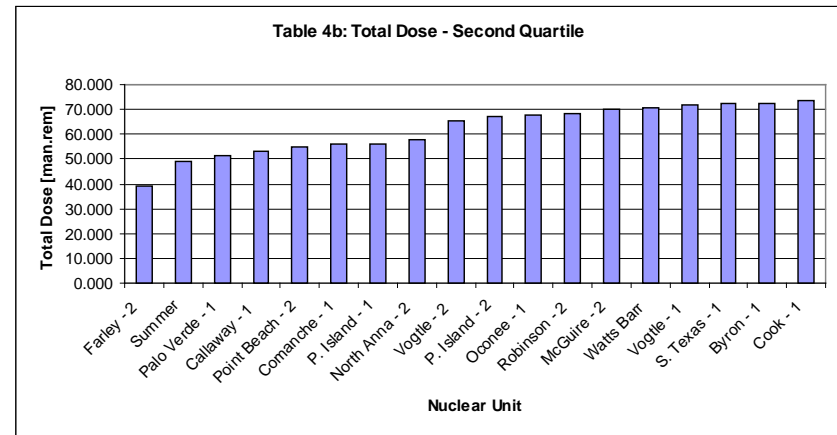
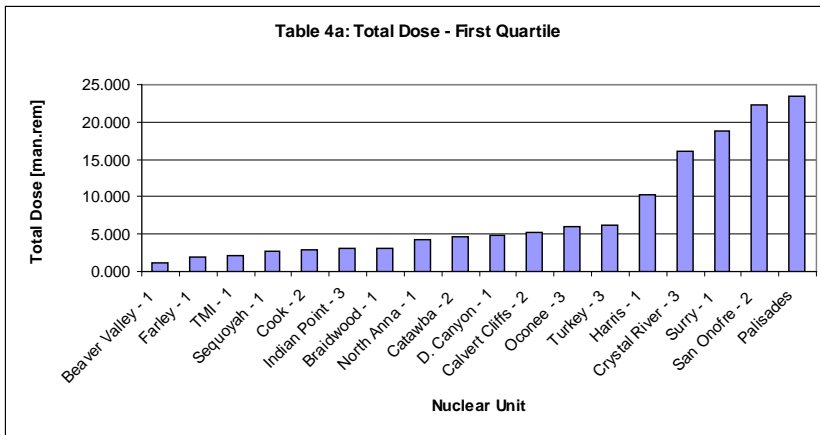
**Table 2c: Outage Dose - Third Quartile**



**Table 2d: Outage Dose - Fourth Quartile**







**Table 5: 2008 PWR Occupation Dose Data**

<b>Nuclear Unit</b>	<b>Outage Start Date</b>	<b>Outage End Date</b>	<b>Outage Duration (Days)</b>	<b>Outage Dose</b>	<b>Normal Operation</b>	<b>Other Shutdowns</b>	<b>Total Dose</b>	<b>NRC Values (Total Site Dose)</b>
Arkansas - 1	10/26/2008	12/12/2008	47	137.785	2.843		140.628	
Arkansas - 2	3/16/2008	4/10/2008	26	73.218	3.032		76.250	196.047
Beaver Valley - 1					1.257		1.257	
Beaver Valley - 2	4/14/2008	5/21/2008	38	80.976	0.643		81.619	83.394
Braidwood - 1					3.084		3.084	
Braidwood - 2	4/20/2008	5/17/2008	28	94.262	5.820		100.082	103.18
Byron - 1	3/23/2008	4/14/2008	22	67.353	5.134		72.487	
Byron - 2	10/5/2008	10/24/2008	19	68.902	8.525		77.427	140.809
Callaway - 1	10/10/2008	11/17/2008	28	47.962	5.030		52.992	45.738
Calvert Cliffs - 1	2/22/2008	3/13/2008	19	72.660	5.169		77.829	
Calvert Cliffs - 2					5.169		5.169	74.149
Catawba - 1	5/3/2008	6/21/2008	49	75.321	5.087		80.408	
Catawba - 2					4.672		4.672	85.08
Comanche - 1	9/27/2008	10/16/2008	19	50.670	5.250		55.920	
Comanche - 2	3/29/2008	4/16/2008	21	109.013	5.250		114.263	168.836
Cook - 1	3/26/2008	5/6/2008	42	65.103	2.940	5.467	73.510	
Cook - 2					2.950		2.950	76.46
Crystal River - 3					15.000	1.110	16.110	16.11
D. Canyon - 1					4.842		4.842	
D. Canyon - 2	2/3/2008	4/12/2008	69	226.298	4.842		231.140	235.034
Davis-Besse	12/30/2008	2/14/2009	46	103.396	3.204		106.600	106.603
Farley - 1					2.000		2.000	
Farley - 2	10/19/2008	11/22/2008	35	36.833	2.000		38.833	40.833
Fort Calhoun	4/19/2008	6/12/2008	55	89.470	5.469	1.291	96.230	96.155

Nuclear Unit	Outage Start Date	Outage End Date	Outage Duration (Days)	Outage Dose	Normal Operation	Other Shutdowns	Total Dose	NRC Values (Total Site Dose)
Harris - 1					10.356		10.356	10.356
Indian Point - 2	3/26/2008	4/22/2008	26	123.465	16.218		139.683	139.683
Indian Point - 3					3.045		3.045	3.045
Kewaunee	3/29/2008	10/9/2008	192	86.927	6.007		92.934	92.951
McGuire - 1	9/20/2008	11/12/2008	54	84.872	10.969		95.841	
McGuire - 2	3/8/2008	4/13/2008	43	60.900	9.026		69.926	165.767
Millstone - 2	4/6/2008	5/15/2008	40	140.800	11.000		151.800	
Millstone - 3	10/11/2008	11/22/2008	43	110.067	11.000		121.067	272.867
North Anna - 1					4.190		4.190	
North Anna - 2	9/14/2008	10/29/2008	46	53.613	4.190		57.803	61.003
Oconee - 1	4/12/2008	6/1/2008	51	59.300	8.421		67.721	
Oconee - 2	10/25/2008	12/15/2008	49	103.500	9.108		112.608	
Oconee - 3					5.971		5.971	186.325
P. Island - 1	2/13/2008	3/23/2008	39	52.422	3.690		56.112	
P. Island - 2	9/19/2008	11/1/2008	44	63.625	3.716		67.341	126.723
Palisades					23.478		23.478	23.478
Palo Verde - 1	10/4/2008	11/19/2008	46	46.561	4.538		51.099	
Palo Verde - 2	3/29/2008	6/5/2008	69	96.423	2.731		99.154	
Palo Verde - 3	9/27/2007	1/19/2008	115	84.210	2.722		86.932	159.913
Point Beach - 1	10/4/2008	11/12/2008	40	83.174	4.987	0.685	88.846	
Point Beach - 2	4/5/2008	5/11/2008	37	49.872	4.988		54.860	144.021
R. E. Ginna	4/20/2008	5/11/2008	21	95.656	11.757		107.413	101.996
Robinson - 2	9/26/2008	11/2/2008	38	60.381	8.000		68.381	68.381
S. Texas - 1	3/29/2008	4/27/2008	28	68.704	3.522		72.226	
S. Texas - 2	10/4/2008	11/4/2008	30	108.606	2.976		111.582	187.295
Salem - 1	10/14/2008	11/14/2008	32	108.565	8.726		117.291	
Salem - 2	3/11/2008	5/8/2008	68	202.172	9.018	0.283	211.473	328.761
San Onofre - 2	11/26/2007	1/19/2008	54	14.738	7.461		22.199	

<b>Nuclear Unit</b>	<b>Outage Start Date</b>	<b>Outage End Date</b>	<b>Outage Duration (Days)</b>	<b>Outage Dose</b>	<b>Normal Operation</b>	<b>Other Shutdowns</b>	<b>Total Dose</b>	<b>NRC Values (Total Site Dose)</b>
San Onofre - 3	10/12/2008	12/18/2008	66	94.516	4.083		98.599	125.32
Seabrook - 1	4/1/2008	5/8/2008	38	69.637	6.630		76.267	74.992
Sequoyah - 1					2.665		2.665	
Sequoyah - 2	5/5/2008	6/5/2008	32	78.863	3.892		82.755	83.73
St. Lucie - 1	10/19/2008	11/21/2008	34	92.612	12.171		104.783	
St. Lucie - 2	9/30/2007	1/4/2008	97	110.963	7.142		118.105	112.234
Summer	4/25/2008	5/30/2008	36	47.091	2.000		49.091	49.091
Surry - 1					18.746		18.746	
Surry - 2	4/27/2008	5/20/2008	24	156.892	18.746		175.638	192.892
TMI - 1					2.219		2.219	2.219
Turkey - 3					6.142		6.142	
Turkey - 4	3/31/2008	5/10/2008	41	83.396	5.752		89.148	97.357
Vogtle - 1	3/16/2008	4/25/2008	40	63.759	8.227		71.986	
Vogtle - 2	9/14/2008	10/21/2008	37	59.218	6.419		65.637	137.62
Waterford - 3	4/26/2008	6/1/2008	35	127.162	7.059		134.221	134.221
Watts Barr	2/10/2008	3/20/2008	40	67.648	3.000		70.648	70.648
Wolf Creek	3/20/2008	6/22/2008	82	88.905	6.085		94.990	94.997