Table F-4. Vertical Head Differences in Nested Wells

June 1997 through March 2009

Final Remedial Investitation Report

Casmalia Resources Superfund Site

Casmalia, California

						June 1997				September 1997				December 1997				April 1998				June 1998			
Primary Well and Site Area	Aquifer Unit	Secondary Well	Aquifer Unit	Elevation of Screened Zone Midpoints (ft MSL)	Midpoint Elevation Difference	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)
A-Drainage																									
MW-18C	U	MW-18D	L	421.9-181.8	240.10	425.60	416.14	0.04	9.46	425.36	415.55	0.04	9.81	425.07	415.82	0.04	9.25	426.01	416.39	0.04	9.62	426.51	416.27	0.04	10.24
RP-100A	U	RP-101C	L	420.6-395.8	24.80	429.05	418.78	0.41	10.27	427.86	418.59	0.37	9.27	427.11	419.06	0.32	8.05	435.93	419.25	0.67	16.68	431.20	418.95	0.49	12.25
RP-73A-2	U	RP-73D	L	343.1-236.4	106.70	369.67	362.63	0.07	7.04	368.23	362.89	0.05	5.34	367.03	363.42	0.03	3.61	374.02	365.10	0.08	8.92	372.42	364.13	0.08	8.29
RP-73B	U	RP-73D	L	343.5-236.4	107.10	328.22	362.63	-0.32	-34.41	366.99	362.89	0.04	4.10	365.82	363.42	0.02	2.40	372.12	365.10	0.07	7.02	371.08	364.13	0.06	6.95
RP-108A	U	RP-108B	U	340.4-327.1	13.30	345.73	346.78	-0.08	-1.05	344.93	345.90	-0.07	-0.97	344.89	344.89	0.00	0.00	NE	349.44	NC	NC	ND	350.11	NC	NC
Median Vertical Head Difference: A-Drainage:									**7.04**				**5.34**				**3.61**				**9.27**				**9.27**
B-Drainage																									
RP-6B	U	RP-6C†	L	357-297.4	59.60	368.57	ND	NC	NC	367.40	310.34	0.96	57.06	366.84	310.11	0.95	56.73	375.17	309.04	1.11	66.13	373.74	309.69	1.07	64.05
RP-75A	U	RP-75B	U	324.1-295.6	28.50	334.40	328.22	0.22	6.18	334.29	328.07	0.22	6.22	334.54	327.98	0.23	6.56	335.51	329.76	0.20	5.75	335.98	ND	NC	NC
RP-75A	U	RP-75C	L	324.1-248	76.10	334.40	340.08	-0.07	-5.68	334.29	339.55	-0.07	-5.26	334.54	339.31	-0.06	-4.77	335.51	340.53	-0.07	-5.02	335.98	342.19	-0.08	-6.21
RP-75B	U	RP-75C	L	295.6-248	47.60	328.22	340.08	-0.25	-11.86	412.96	339.55	1.54	73.41	327.98	339.31	-0.24	-11.33	329.76	340.53	-0.23	-10.77	ND	342.19	NC	NC
Median Vertical Head Difference: B-Drainage:					**53.60**				**-5.68**				**31.64**				**0.90**				**0.37**				**28.92**
C-Drainage																									
C2M	U	C2B	L	415.75-361	54.75	417.35	410.84	0.12	6.51	415.75	410.19	0.10	5.56	418.40	408.43	0.18	9.97	420.44	413.42	0.13	7.02	418.69	414.13	0.08	4.56
MW-3BU	U	MW-5BL	L	464.4-392.9	71.50	499.24	ND	NC	NC	499.01	510.00	-0.15	-10.99	498.10	509.45	-0.16	-11.35	499.19	NE	NC	NC	ND	ND	NC	NC
MW-4BU	L	MW-4BL	L	469-392.9	76.10	488.93	480.36	0.11	8.57	484.21	479.17	0.07	5.04	482.96	477.96	0.07	5.00	484.58	479.51	0.07	5.07	490.13	481.28	0.12	8.85
MW-7C	U	MW-7D	L	367.1-289.1	78.00	400.62	409.44	-0.11	-8.82	400.40	409.26	-0.11	-8.86	400.47	406.39	-0.08	-5.92	408.79	408.64	0.00	0.15	408.37	404.35	0.05	4.02
RP-13B	U	MW-6D	L	414-239	175.00	426.03	427.13	-0.01	-1.10	425.08	427.13	-0.01	-2.05	424.23	427.06	-0.02	-2.83	426.27	427.68	-0.01	-1.41	428.68	427.46	0.01	1.22
RP-100A	U	RP-24D	L	420.6-309	111.60	429.05	427.78	0.01	1.27	427.86	427.72	0.00	0.14	427.11	ND	NC	NC	435.93	ND	NC	NC	431.20	ND	NC	NC
RP-72B	U	RP-72D†	L	329.2-239.9	89.30	365.53	359.93	0.06	5.60	365.12	359.47	0.06	5.65	365.18	359.50	0.06	5.68	365.12	359.38	0.06	5.74	ND	361.83	NC	NC
RP-72A	U	RP-72D†	L	347.6-239.9	107.70	359.46	359.93	0.00	-0.47	359.53	359.47	0.00	0.06	359.67	359.50	0.00	0.17	357.97	359.38	-0.01	-1.41	356.73	361.83	-0.05	-5.10
Median Vertical Head Difference: C-Drainage:									**1.27**				**0.10**				**0.17**				**2.61**				**4.02**
North-Drainage																									
RP-109B	U	RP-109D†	L	423.9-308	115.90	453.75	453.60	0.00	0.15	453.16	453.60	0.00	-0.44	452.48	452.36	0.00	0.12	453.77	NE	NC	NC	455.72	ND	NC	NC
RP-110B	U	RP-110D	L	420.2-329.5	90.70	439.97	439.86	0.00	0.11	439.76	439.86	0.00	-0.10	439.64	439.64	0.00	0.00	440.71	440.99	0.00	-0.28	441.08	440.45	0.01	0.63
RP-41A	U	RP-41B†	L	472-445.4	26.60	473.11	474.98	-0.07	-1.87	473.18	474.76	-0.06	-1.58	472.77	473.85	-0.04	-1.08	473.11	473.89	-0.03	-0.78	475.52	476.09	-0.02	-0.57
RP-41B	L	RP-41D†	L	445.4-239.6	205.80	474.98	NE	NC	NC	474.76	NE	NC	NC	473.85	NE	NC	NC	473.89	NE	NC	NC	476.09	NE	NC	NC
RP-41A	U	RP-41D†	L	472-239.6	232.40	473.11	NE	NC	NC	473.18	NE	NC	NC	472.77	NE	NC	NC	473.11	NE	NC	NC	475.52	NE	NC	NC
RGPZ-2B†	L	RGPZ-2C†	L	704-621.6	82.40	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-2C†	L	RGPZ-2D†	L	621.6-536.2	85.40	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-2B†	L	RGPZ-2D	L	704-536.2	167.80	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11B†	L	RGPZ-11C†	L	610.6-533.7	76.90	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11C†	L	RGPZ-11D	L	533.7-467.7	66.00	NE	ND	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11B†	L	RGPZ-11D	L	610.6-467.7	142.90	NE	ND	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-12C†	L	RGPZ-12D†	L	507.5-416	91.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-13C†	L	RGPZ-13D†	L	501.7-444.2	57.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
Median Vertical Head Difference: North-Drainage (excluding RP-70D):					**76.90**				**0.11**				**-0.44**				**0.00**				**-0.53**				**0.03**
Recharge Areas																									
RP-16C	L	RP-16D†	L	544.1-473.4	70.70	ND	ND	NC	NC	690.41	NE	NC	NC	679.40	609.56	0.99	69.84	689.67	610.46	1.12	79.21	685.83	609.62	1.08	76.21
RP-63C	L	RP-63D	L	606-515.6	90.40	628.46	603.72	0.27	24.74	627.91	603.59	0.27	24.32	627.47	603.87	0.26	23.60	628.56	604.35	0.27	24.21	628.64	604.04	0.27	24.60
RP-33C†	L	RP-33D	L	412.1-361	51.10	NE	426.90	NC	NC	428.87	426.48	0.05	2.39	428.99	426.50	0.05	2.49	429.39	433.80	-0.09	-4.41	429.22	433.28	-0.08	-4.06
Median Vertical Head Difference: Recharge Areas:					**70.70**				**24.74**				**13.36**				**23.60**				**24.21**				**24.60**
Interior Zone 1																									
LCW-3	U	RP-96C-2	L	515.9-472.1	43.80	ND	461.65	NC	NC	493.57	459.81	0.77	33.76	491.68	459.54	0.73	32.14	499.31	463.56	0.82	35.75	501.59	465.65	0.82	35.94
RG-10B	U	RP-29D	L	652.34-502	150.34	ND	585.06	NC	NC	NE	584.52	NC	NC	ND	ND	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RG-1B	U	RG-1C†	L	420.21-363.28	56.93	ND	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	407.48	407.48	0.00	0.00	NE	NE	NC	NC
RG-4B	U	RGPZ-4C	L	563.27-490.42	72.85	ND	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	566.11	NE	NC	NC	NE	NE	NC	NC
RG-9B†	U	RP-95D	L	503.06-261.7	241.36	NE	500.27	NC	NC	NE	NE	NC	NC	ND	500.68	NC	NC	NE	500.86	NC	NC	NE	499.59	NC	NC
WP-3S	L	WP-3D†	L	509.58-424.91	84.67	504.68	ND	NC	NC	503.77	NE	NC	NC	502.50	NE	NC	NC	505.19	NE	NC	NC	504.22	NE	NC	NC
RP-14B	U	RP-14D	L	526-379	147.00	527.34	509.95	0.12	17.39	526.24	509.87	0.11	16.37	528.41	NE	NC	NC	532.09	509.79	0.15	22.30	528.30	489.97	NC	NC
RP-3C	L	RP-3D	L	509-454.5	54.50	538.73	540.89	-0.04	-2.16	537.58	538.64	-0.02	-1.06	537.33	538.32	-0.02	-0.99	540.71	538.21	0.05	2.50	540.89	551.57	-0.20	-10.68
RP-2B†	U	RP-2C	L	620-478	142.00	618.31	593.20	0.18	25.11	617.42	593.18	0.17	24.24	617.66	593.14	0.17	24.52	625.96	595.33	0.22	30.63	NE	NE	NC	NC
RP-2C	L	RP-2D	L	478-414.5	63.50	593.20	NE	NC	NC	593.18	541.07	0.82	52.11	593.14	541.89	0.81	51.25	595.33	542.45	0.83	52.88	NE	540.82	NC	NC
RP-3B	U	RP-3D†	L	532-454.5	77.50	535.15	540.89	-0.07	-5.74	535.07	538.64	-0.05	-3.57	535.66	538.32	-0.03	-2.66	536.43	538.21	-0.02	-1.78	535.51	551.57	-0.21	-16.06
RP-3B	U	RP-3C	L	532-509	23.00	535.15	538.73	-0.16	-3.58	535.07	537.58	-0.11	-2.51	535.66	537.33	-0.07	-1.67	536.43	540.71	-0.19	-4.28	535.51	540.89	-0.23	-5.38
RP-55C	L	RP-55C-2	L	452-435	17.00	506.72	NE	NC	NC	506.76	506.59	0.01	0.17	NE	506.39	NC	NC	NE	506.68	NC	NC	507.01	506.83	0.01	0.18
PZ-P18-2A†	U	PZ-P18-2B†	U	459.2-447.2	12.00	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
PZ-PA5-2A†	U	PZ-PA5-2C	U	455.49-433.03	22.46	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
PZ-PA5-3A	U	PZ-PA5-3C	U	455.82-433.36	22.46	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-3C†	L	RGPZ-3D†	L	464.2-430.4	33.80	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-6B	L	RGPZ-6C	L	446.4-377.7	68.70	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-6C†	L	RGPZ-6D†	L	377.7-310.2	67.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-6B	L	RGPZ-6D†	L	446.4-310.2	136.20	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-7C†	L	RGPZ-7D†	L	369.6-322.6	47.00	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
SW-15	U	RP-3D	L	538.2-454.5	83.70	ND	540.89	NC	NC	NE	538.64	NC	NC	NE	538.32	NC	NC	NE	538.21	NC	NC	NE	551.57	NC	NC
WP-4S	U	WP-4D	L	400.42-325.42	75.00	415.18	403.93	0.15	11.25	413.86	403.78	0.13	10.08	414.39	404.16	0.14	10.23	NE	408.98	NC	NC	NE	NE	NC	NC
Median Vertical Head Difference: Interior Zone 1:									**4.55**				**10.08**				**10.23**				**12.40**				**-5.38**

Total Lower Wells: 22 51

Total Upper Wells: 34 5

Notes:
NC = Head difference and vertical gradient not calculated due to non-equilibrium.
ND = No Data
ND* = Unreliable water level measurement
NE = Non-Equilibrium
† Wells that have historically or periodically exhibited non-equilibrium

Table F-4. Vertical Head Differences in Nested Wells

June 1997 through March 2009

Final Remedial Investitation Report

Casmalia Resources Superfund Site

Casmalia, California

						October 1998				January 1999				April 1999				July 1999				November 1999			
Primary Well and Site Area	Aquifer Unit	Secondary Well	Aquifer Unit	Elevation of Screened Zone Midpoints (ft MSL)	Midpoint Elevation Difference	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)
A-Drainage																									
MW-18C	U	MW-18D	L	421.9-181.8	240.10	426.16	416.22	0.04	9.94	425.93	416.33	0.04	9.60	426.01	416.39	0.04	9.62	426.10	416.25	0.04	9.85	426.30	416.84	0.04	9.46
RP-100A	U	RP-101C	L	420.6-395.8	24.80	429.25	418.87	0.42	10.38	428.59	418.64	0.40	9.95	435.93	419.25	0.67	16.68	430.05	418.82	0.45	11.23	427.46	418.32	0.37	9.14
RP-73A-2	U	RP-73D	L	343.1-236.4	106.70	370.70	364.41	0.06	6.29	369.70	364.72	0.05	4.98	374.02	365.10	0.08	8.92	370.92	365.18	0.05	5.74	369.41	366.37	0.03	3.04
RP-73B	U	RP-73D	L	343.5-236.4	107.10	369.54	364.41	0.05	5.13	368.43	364.72	0.03	3.71	372.12	365.10	0.07	7.02	369.45	365.18	0.04	4.27	368.05	366.37	0.02	1.68
RP-108A	U	RP-108B	U	340.4-327.1	13.30	NE	348.34	NC	NC	NE	347.61	NC	NC	NE	349.44	NC	NC	NE	348.04	NC	NC	346.31	347.79	-0.11	-1.48
Median Vertical Head Difference: A-Drainage:									**8.11**				**7.29**				**9.27**				**7.80**				**3.04**
B-Drainage																									
RP-6B	U	RP-6C†	L	357-297.4	59.60	372.87	309.46	1.06	63.41	372.95	309.27	1.07	63.68	375.17	309.04	1.11	66.13	372.65	NE	NC	NC	370.32	309.05	1.03	61.27
RP-75A	U	RP-75B	U	324.1-295.6	28.50	335.52	329.53	0.21	5.99	335.16	NE	NC	NC	335.51	329.76	0.20	5.75	334.88	329.31	0.20	5.57	335.36	329.53	0.20	5.83
RP-75A	U	RP-75C	L	324.1-248	76.10	335.52	341.11	-0.07	-5.59	335.16	340.50	-0.07	-5.34	335.51	340.53	-0.07	-5.02	334.88	340.30	-0.07	-5.42	335.36	340.54	-0.07	-5.18
RP-75B	U	RP-75C	L	295.6-248	47.60	329.53	341.11	-0.24	-11.58	NE	340.50	NC	NC	329.76	340.53	-0.23	-10.77	329.31	340.30	-0.23	-10.99	329.53	340.54	-0.23	-11.01
Median Vertical Head Difference: B-Drainage:					**53.60**				**52.23**				**29.17**				**0.37**				**-5.42**				**0.33**
C-Drainage																									
C2M	U	C2B	L	415.75-361	54.75	417.40	412.67	0.09	4.73	416.93	413.59	0.06	3.34	420.44	413.42	0.13	7.02	417.58	412.69	0.09	4.89	416.79	411.61	0.09	5.18
MW-3BU	U	MW-5BL	L	464.4-392.9	71.50	500.05	NE	NC	NC	NE	NE	NC	NC	499.19	NE	NC	NC	499.17	NE	NC	NC	499.00	510.74	-0.16	-11.74
MW-4BU	L	MW-4BL	L	469-392.9	76.10	487.38	481.04	0.08	6.34	484.52	479.84	0.06	4.68	484.58	479.51	0.07	5.07	484.28	478.97	0.07	5.31	483.57	478.43	0.07	5.14
MW-7C	U	MW-7D	L	367.1-289.1	78.00	409.12	408.59	0.01	0.53	408.07	406.94	0.01	1.13	408.79	408.64	0.00	0.15	408.85	407.39	0.02	1.46	407.28	409.24	-0.03	-1.96
RP-13B	U	MW-6D	L	414-239	175.00	426.34	427.51	-0.01	-1.17	425.34	427.51	-0.01	-2.17	426.27	427.68	-0.01	-1.41	425.60	427.70	-0.01	-2.10	425.02	427.74	-0.02	-2.72
RP-100A	U	RP-24D	L	420.6-309	111.60	429.25	ND	NC	NC	428.59	ND	NC	NC	435.93	ND	NC	NC	430.05	ND	NC	NC	427.46	428.80	-0.01	-1.34
RP-72B	U	RP-72D†	L	329.2-239.9	89.30	363.25	359.66	0.04	3.59	ND	358.82	NC	NC	365.12	359.38	0.06	5.74	363.26	NE	NC	NC	363.31	359.35	0.04	3.96
RP-72A	U	RP-72D†	L	347.6-239.9	107.70	357.00	359.66	-0.02	-2.66	356.98	358.82	-0.02	-1.84	357.97	359.38	-0.01	-1.41	356.77	NE	NC	NC	357.44	359.35	-0.02	-1.91
Median Vertical Head Difference: C-Drainage:									**2.06**				**5.14**				**2.61**				**3.18**				**-1.63**
North-Drainage																									
RP-109B	U	RP-109D†	L	423.9-308	115.90	454.63	NE	NC	NC	453.75	NE	NC	NC	453.77	NE	NC	NC	454.67	NE	NC	NC	454.88	454.11	0.01	0.77
RP-110B	U	RP-110D	L	420.2-329.5	90.70	440.83	440.76	0.00	0.07	440.63	440.90	0.00	-0.27	440.71	440.99	0.00	-0.28	440.45	440.49	0.00	-0.04	440.65	440.86	0.00	-0.21
RP-41A	U	RP-41B†	L	472-445.4	26.60	474.49	474.96	-0.02	-0.47	473.68	473.57	0.00	0.11	473.11	473.89	-0.03	-0.78	473.76	473.52	NC	NC	471.98	473.82	-0.07	-1.84
RP-41B	L	RP-41D†	L	445.4-239.6	205.80	474.96	NE	NC	NC	473.57	NE	NC	NC	473.89	NE	NC	NC	473.52	NE	NC	NC	473.82	NE	NC	NC
RP-41A	U	RP-41D†	L	472-239.6	232.40	474.49	NE	NC	NC	473.68	NE	NC	NC	473.11	NE	NC	NC	473.76	NE	NC	NC	471.98	NE	NC	NC
RGPZ-2B†	L	RGPZ-2C†	L	704-621.6	82.40	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-2C†	L	RGPZ-2D†	L	621.6-536.2	85.40	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-2B†	L	RGPZ-2D	L	704-536.2	167.80	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11B†	L	RGPZ-11C†	L	610.6-533.7	76.90	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11C†	L	RGPZ-11D	L	533.7-467.7	66.00	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11B†	L	RGPZ-11D	L	610.6-467.7	142.90	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-12C†	L	RGPZ-12D†	L	507.5-416	91.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-13C†	L	RGPZ-13D†	L	501.7-444.2	57.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
Median Vertical Head Difference: North-Drainage (excluding RP-70D):					**76.90**				**-0.20**				**-0.08**				**-0.53**				**-0.04**				**-0.21**
Recharge Areas																									
RP-16C	L	RP-16D†	L	544.1-473.4	70.70	685.04	609.86	1.06	75.18	686.57	610.46	1.08	76.11	689.67	610.46	1.12	79.21	690.89	610.10	1.14	80.79	NE	NE	NC	NC
RP-63C	L	RP-63D	L	606-515.6	90.40	628.19	603.96	0.27	24.23	627.67	604.02	0.26	23.65	628.56	604.35	0.27	24.21	628.28	603.93	0.27	24.35	NE	NE	NC	NC
RP-33C†	L	RP-33D	L	412.1-361	51.10	429.16	432.99	-0.07	-3.83	429.27	432.76	-0.07	-3.49	429.39	433.80	-0.09	-4.41	429.45	434.09	-0.09	-4.64	NE	NE	NC	NC
Median Vertical Head Difference: Recharge Areas:					**70.70**				**24.23**				**23.65**				**24.21**				**24.35**				**NC**
Interior Zone 1																									
LCW-3	U	RP-96C-2	L	515.9-472.1	43.80	495.69	462.98	0.75	32.71	493.83	462.30	0.72	31.53	499.31	463.56	0.82	35.75	497.23	463.19	0.78	34.04	NE	NE	NC	NC
RG-10B	U	RP-29D	L	652.34-502	150.34	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RG-1B	U	RG-1C†	L	420.21-363.28	56.93	429.72	406.02	0.42	23.70	429.08	387.58	0.73	41.50	431.99	407.48	0.43	24.51	430.13	383.38	0.82	46.75	NE	NE	NC	NC
RG-4B	U	RGPZ-4C	L	563.27-490.42	72.85	556.23	NE	NC	NC	556.37	NE	NC	NC	566.11	NE	NC	NC	556.30	NE	NC	NC	NE	NE	NC	NC
RG-9B†	U	RP-95D	L	503.06-261.7	241.36	NE	500.56	NC	NC	NE	500.72	NC	NC	NE	500.86	NC	NC	NE	500.56	NC	NC	NE	NE	NC	NC
WP-3S	L	WP-3D†	L	509.58-424.91	84.67	503.73	NE	NC	NC	502.78	NE	NC	NC	505.19	495.74	0.11	9.45	504.38	518.23	-0.16	-13.85	NE	NE	NC	NC
RP-14B	U	RP-14D	L	526-379	147.00	526.69	509.87	0.11	16.82	527.03	509.64	0.12	17.39	532.09	509.79	0.15	22.30	526.83	509.38	0.12	17.45	NE	NE	NC	NC
RP-3C	L	RP-3D	L	509-454.5	54.50	538.09	542.68	-0.08	-4.59	537.68	539.68	-0.04	-2.00	540.71	538.21	0.05	2.50	539.01	536.42	0.05	2.59	NE	NE	NC	NC
RP-2B†	U	RP-2C	L	620-478	142.00	618.17	595.65	0.16	22.52	NE	NE	NC	NC	625.96	595.33	0.22	30.63	619.68	595.23	0.17	24.45	NE	NE	NC	NC
RP-2C	L	RP-2D	L	478-414.5	63.50	595.65	541.57	0.85	54.08	NE	542.20	NC	NC	595.33	542.45	0.83	52.88	595.23	541.95	0.84	53.28	NE	NE	NC	NC
RP-3B	U	RP-3D†	L	532-454.5	77.50	535.12	542.68	-0.10	-7.56	535.02	539.68	-0.06	-4.66	536.43	538.21	-0.02	-1.78	535.32	536.42	-0.01	-1.10	NE	NE	NC	NC
RP-3B	U	RP-3C	L	532-509	23.00	535.12	538.09	-0.13	-2.97	535.02	537.68	-0.12	-2.66	536.43	540.71	-0.19	-4.28	535.32	539.01	-0.16	-3.69	NE	NE	NC	NC
RP-55C	L	RP-55C-2	L	452-435	17.00	NE	NE	NC	NC	NE	506.49	NC	NC	NE	506.68	NC	NC	NE	506.78	NC	NC	NE	NE	NC	NC
PZ-P18-2A†	U	PZ-P18-2B†	U	459.2-447.2	12.00	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
PZ-PA5-2A†	U	PZ-PA5-2C	U	455.49-433.03	22.46	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
PZ-PA5-3A	U	PZ-PA5-3C	U	455.82-433.36	22.46	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-3C†	L	RGPZ-3D†	L	464.2-430.4	33.80	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-6B	L	RGPZ-6C	L	446.4-377.7	68.70	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-6C†	L	RGPZ-6D†	L	377.7-310.2	67.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-6B	L	RGPZ-6D†	L	446.4-310.2	136.20	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-7C†	L	RGPZ-7D†	L	369.6-322.6	47.00	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
SW-15	U	RP-3D	L	538.2-454.5	83.70	NE	NE	NC	NC	NE	539.68	NC	NC	NE	538.21	NC	NC	NE	536.42	NC	NC	NE	NE	NC	NC
WP-4S	U	WP-4D	L	400.42-325.42	75.00	NE	NE	NC	NC	NE	NE	NC	NC	NE	408.98	NC	NC	NE	407.22	NC	NC	NE	NE	NC	NC
Median Vertical Head Difference: Interior Zone 1:									**19.67**				**7.69**				**22.30**				**17.45**				**NC**

Total Lower Wells: 22 51

Total Upper Wells: 34 5

Notes:
NC = Head difference and vertical gradient not calculated due to non-equilibrium.
ND = No Data
ND* = Unreliable water level measurement
NE = Non-Equilibrium
† Wells that have historically or periodically exhibited non-equilibrium

Table F-4. Vertical Head Differences in Nested Wells

June 1997 through March 2009

Final Remedial Investitation Report

Casmalia Resources Superfund Site

Casmalia, California

						March 2000				June 2000				September 2000				December 2000				March 2001			
Primary Well and Site Area	Aquifer Unit	Secondary Well	Aquifer Unit	Elevation of Screened Zone Midpoints (ft MSL)	Midpoint Elevation Difference	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)
A-Drainage																									
MW-18C	U	MW-18D	L	421.9-181.8	240.10	400.79	181.17	0.91	219.62	419.17	417.13	0.01	2.04	418.99	417.15	0.01	1.84	419.14	416.92	0.01	2.22	419.89	417.20	0.01	2.69
RP-100A	U	RP-101C	L	420.6-395.8	24.80	434.04	419.10	0.60	14.94	430.51	418.77	0.47	11.74	430.36	418.51	0.48	11.85	427.16	418.28	0.36	8.88	434.38	421.36	0.52	13.02
RP-73A-2	U	RP-73D	L	343.1-236.4	106.70	NE	NE	NC	NC	370.89	366.91	0.04	3.98	369.25	367.13	0.02	2.12	367.74	367.08	0.01	0.66	373.50	367.29	0.06	6.21
RP-73B	U	RP-73D	L	343.5-236.4	107.10	NE	NE	NC	NC	369.38	366.91	0.02	2.47	367.69	367.13	0.01	0.56	366.46	367.08	-0.01	-0.62	371.74	367.29	0.04	4.45
RP-108A	U	RP-108B	U	340.4-327.1	13.30	NE	NE	NC	NC	347.06	348.73	-0.13	26.23	345.90	347.49	-0.12	-1.59	345.10	346.74	-0.12	-1.64	348.16	351.01	-0.21	-2.85
Median Vertical Head Difference: A-Drainage:									**117.28**				**3.98**				**1.84**				**0.66**				**4.45**
B-Drainage																									
RP-6B	U	RP-6C†	L	357-297.4	59.60	NE	308.35	NC	NC	371.32	308.07	1.06	63.25	369.86	307.89	1.04	61.97	368.66	307.75	1.02	60.91	371.96	307.52	1.08	64.44
RP-75A	U	RP-75B	U	324.1-295.6	28.50	336.77	330.20	0.23	6.57	335.98	330.03	0.21	11.57	335.19	329.50	0.20	5.69	335.24	329.39	0.21	5.85	336.97	330.23	0.24	6.74
RP-75A	U	RP-75C	L	324.1-248	76.10	336.77	341.13	-0.06	-4.36	335.98	341.19	-0.07	4.48	335.19	340.76	-0.07	-5.57	335.24	340.44	-0.07	-5.20	336.97	341.13	-0.05	-4.16
RP-75B	U	RP-75C	L	295.6-248	47.60	330.20	341.13	-0.23	-10.93	369.38	341.19	0.59	7.16	329.50	340.76	-0.24	-11.26	329.39	340.44	-0.23	-11.05	330.23	341.13	-0.23	-10.90
Median Vertical Head Difference: B-Drainage:					**53.60**				**-4.36**				**9.36**				**0.06**				**0.33**				**1.29**
C-Drainage																									
C2M	U	C2B	L	415.75-361	54.75	NE	NE	NC	NC	418.52	413.41	0.09	7.55	417.44	412.49	0.09	4.95	416.90	411.65	0.10	5.25	420.87	414.08	0.12	6.79
MW-3BU	U	MW-5BL	L	464.4-392.9	71.50	NE	NE	NC	NC	499.20	NE	NC	NC	498.85	510.49	-0.16	-11.64	498.44	506.74	-0.12	-8.30	498.85	510.70	-0.17	-11.85
MW-4BU	L	MW-4BL	L	469-392.9	76.10	NE	NE	NC	NC	485.56	478.82	0.09	6.29	484.15	478.54	0.07	5.61	483.03	477.78	0.07	5.25	484.43	478.70	0.08	5.73
MW-7C	U	MW-7D	L	367.1-289.1	78.00	410.16	477.32	-0.86	-67.16	411.58	409.51	0.03	5.25	410.35	408.61	0.02	1.74	ND	NE	NC	NC	410.69	410.22	0.01	0.47
RP-13B	U	MW-6D	L	414-239	175.00	426.82	NE	NC	NC	425.93	427.93	-0.01	2.45	425.10	427.91	-0.02	-2.81	424.59	427.81	-0.02	-3.22	427.59	428.09	0.00	-0.50
RP-100A	U	RP-24D	L	420.6-309	111.60	434.04	428.83	0.05	5.21	430.51	428.82	0.02	3.84	430.36	428.86	0.01	1.50	427.16	428.64	-0.01	-1.48	434.38	428.65	0.05	5.73
RP-72B	U	RP-72D†	L	329.2-239.9	89.30	365.54	360.75	0.05	4.79	364.46	360.38	0.05	4.04	363.42	359.62	0.04	3.80	363.00	359.09	0.04	3.91	366.39	359.91	0.07	6.47
RP-72A	U	RP-72D†	L	347.6-239.9	107.70	357.67	360.75	-0.03	-3.08	357.13	360.38	-0.03	3.35	356.87	359.62	-0.03	-2.75	335.24	359.09	-0.22	-23.85	358.60	359.91	-0.01	-1.31
Median Vertical Head Difference: C-Drainage:									**0.86**				**4.04**				**1.62**				**-1.48**				**3.10**
North-Drainage																									
RP-109B	U	RP-109D†	L	423.9-308	115.90	453.93	454.21	0.00	-0.28	455.53	455.62	0.00	3.93	454.75	NE	NC	NC	453.92	NE	NC	NC	453.43	453.75	0.00	-0.32
RP-110B	U	RP-110D	L	420.2-329.5	90.70	ND	ND	NC	NC	ND	ND	NC	NC	440.85	440.95	0.00	-0.10	440.69	441.00	0.00	-0.31	441.27	441.47	0.00	-0.20
RP-41A	U	RP-41B†	L	472-445.4	26.60	ND	474.01	NC	NC	ND	ND	NC	NC	473.71	NE	NC	NC	472.70	NE	NC	NC	471.95	NE	NC	NC
RP-41B	L	RP-41D†	L	445.4-239.6	205.80	474.01	NE	NC	NC	NE	NE	NC	NC	475.42	NE	NC	NC	475.57	NE	NC	NC	475.62	NE	NC	NC
RP-41A	U	RP-41D†	L	472-239.6	232.40	NE	NE	NC	NC	NE	NE	NC	NC	473.71	NE	NC	NC	472.70	NE	NC	NC	471.95	NE	NC	NC
RGPZ-2B†	L	RGPZ-2C†	L	704-621.6	82.40	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-2C†	L	RGPZ-2D†	L	621.6-536.2	85.40	NE	NE	NC	NC	NE	NE	NC	NC	691.53	NE	NC	NC	689.65	NE	NC	NC	689.08	NE	NC	NC
RGPZ-2B†	L	RGPZ-2D	L	704-536.2	167.80	NE	NE	NC	NC	NE	NE	NC	NC	709.60	NE	NC	NC	NE	649.93	NC	NC	NE	649.86	NC	NC
RGPZ-11B†	L	RGPZ-11C†	L	610.6-533.7	76.90	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11C†	L	RGPZ-11D	L	533.7-467.7	66.00	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11B†	L	RGPZ-11D	L	610.6-467.7	142.90	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-12C†	L	RGPZ-12D†	L	507.5-416	91.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-13C†	L	RGPZ-13D†	L	501.7-444.2	57.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
Median Vertical Head Difference: North-Drainage (excluding RP-70D):					**76.90**				**-0.28**				**3.93**				**-0.10**				**-0.31**				**-0.26**
Recharge Areas																									
RP-16C	L	RP-16D†	L	544.1-473.4	70.70	NE	NE	NC	NC	692.52	606.13	1.22	8.56	694.78	606.37	1.25	88.41	693.99	606.79	1.23	87.20	695.26	606.91	1.25	88.35
RP-63C	L	RP-63D	L	606-515.6	90.40	NE	604.94	NC	NC	629.46	604.70	0.27	6.69	628.78	604.49	0.27	24.29	NE	604.49	NC	NC	629.97	604.83	0.28	25.14
RP-33C†	L	RP-33D	L	412.1-361	51.10	429.73	NE	NC	NC	429.73	435.47	-0.11	8.52	429.85	434.65	-0.09	-4.80	429.90	434.18	-0.08	-4.28	430.07	435.79	-0.11	-5.72
Median Vertical Head Difference: Recharge Areas:					**70.70**				**NC**				**8.52**				**24.29**				**41.46**				**25.14**
Interior Zone 1																									
LCW-3	U	RP-96C-2	L	515.9-472.1	43.80	330.20	461.52	-3.00	-131.32	498.90	464.00	0.80	10.58	497.55	461.86	0.81	35.69	NE	461.11	NC	NC	503.76	464.62	0.89	39.14
RG-10B	U	RP-29D	L	652.34-502	150.34	NE	NE	NC	NC	588.42	586.03	0.02	3.90	596.32	584.84	0.08	11.48	NE	584.65	NC	NC	599.32	586.71	0.08	12.61
RG-1B	U	RG-1C†	L	420.21-363.28	56.93	432.38	398.51	NC	NC	430.10	NE	NC	NC	429.91	NE	NC	NC	428.45	NE	NC	NC	433.17	438.45	-0.09	-5.28
RG-4B	U	RGPZ-4C	L	563.27-490.42	72.85	561.07	NE	NC	NC	554.37	NE	NC	NC	552.25	NE	NC	NC	552.11	NE	NC	NC	562.51	557.04	0.08	5.47
RG-9B†	U	RP-95D	L	503.06-261.7	241.36	NE	499.28	NC	NC	522.32	499.44	0.09	2.07	516.57	NE	NC	NC	513.52	499.18	0.06	14.34	523.57	499.72	0.10	23.85
WP-3S	L	WP-3D†	L	509.58-424.91	84.67	505.38	NE	NC	NC	505.01	NE	NC	NC	503.77	NE	NC	NC	503.72	NE	NC	NC	505.66	NE	NC	NC
RP-14B	U	RP-14D	L	526-379	147.00	NE	NE	NC	NC	527.57	509.66	0.12	3.47	526.60	509.91	0.11	16.69	525.86	NE	NC	NC	533.37	509.55	0.16	23.82
RP-3C	L	RP-3D	L	509-454.5	54.50	NE	537.49	NC	NC	540.28	529.42	0.20	9.71	NE	529.95	NC	NC	NE	529.89	NC	NC	NE	533.57	NC	NC
RP-2B†	U	RP-2C	L	620-478	142.00	NE	NE	NC	NC	620.76	594.48	0.19	4.19	617.58	594.29	0.16	23.29	617.01	594.16	0.16	22.85	635.82	594.07	0.29	41.75
RP-2C	L	RP-2D	L	478-414.5	63.50	NE	NE	NC	NC	594.48	542.20	0.82	8.53	594.29	542.45	0.82	51.84	594.16	542.77	0.81	51.39	594.07	542.70	0.81	51.37
RP-3B	U	RP-3D†	L	532-454.5	77.50	536.50	537.49	-0.01	-0.99	535.41	529.42	0.08	6.83	535.17	529.95	0.07	5.22	534.94	529.89	0.07	5.05	536.66	533.57	0.04	3.09
RP-3B	U	RP-3C	L	532-509	23.00	536.50	NE	NC	NC	535.41	540.28	-0.21	23.50	535.17	NE	NC	NC	534.94	NE	NC	NC	536.66	NE	NC	NC
RP-55C	L	RP-55C-2	L	452-435	17.00	508.46	508.97	-0.03	-0.51	507.19	509.61	-0.14	29.99	512.13	505.33	0.40	6.80	508.19	507.27	0.05	0.92	506.89	509.00	-0.12	-2.11
PZ-P18-2A†	U	PZ-P18-2B†	U	459.2-447.2	12.00	455.22	449.45	0.48	5.77	454.57	448.98	0.47	37.38	454.60	445.75	0.74	8.85	NE	NE	NC	NC	454.67	454.67	0.00	0.00
PZ-PA5-2A†	U	PZ-PA5-2C	U	455.49-433.03	22.46	455.86	452.30	0.16	3.56	454.57	451.97	0.12	20.12	453.57	450.17	0.15	3.40	NE	NE	NC	NC	455.10	452.30	0.12	2.80
PZ-PA5-3A	U	PZ-PA5-3C	U	455.82-433.36	22.46	455.35	455.12	0.01	0.23	455.20	455.18	0.00	20.27	454.04	453.31	0.03	0.73	NE	NE	NC	NC	455.43	454.47	0.04	0.96
RGPZ-3C†	L	RGPZ-3D†	L	464.2-430.4	33.80	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	556.73	556.92	-0.01	-0.19
RGPZ-6B	L	RGPZ-6C	L	446.4-377.7	68.70	NE	NE	NC	NC	NE	NE	NC	NC	464.19	NE	NC	NC	463.40	NE	NC	NC	470.69	461.67	0.13	9.02
RGPZ-6C†	L	RGPZ-6D†	L	377.7-310.2	67.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	461.67	468.76	-0.11	-7.09
RGPZ-6B	L	RGPZ-6D†	L	446.4-310.2	136.20	NE	NE	NC	NC	NE	NE	NC	NC	464.22	NE	NC	NC	463.40	NE	NC	NC	470.69	468.76	0.01	1.93
RGPZ-7C†	L	RGPZ-7D†	L	369.6-322.6	47.00	NE	NE	NC	NC	NE	NE	NC	NC	459.99	348.42	2.37	111.57	459.34	392.13	1.43	67.21	460.40	465.58	-0.11	-5.18
SW-15	U	RP-3D	L	538.2-454.5	83.70	549.79	537.49	0.15	12.30	529.42	529.42	0.00	6.33	NE	529.95	NC	NC	NE	529.89	NC	NC	554.63	533.57	0.25	21.06
WP-4S	U	WP-4D	L	400.42-325.42	75.00	422.62	NE	NC	NC	407.24	407.24	0.00	5.43	420.18	406.66	0.18	13.52	419.11	406.40	0.17	12.71	422.23	407.65	0.19	14.58
Median Vertical Head Difference: Interior Zone 1:									**0.23**				**8.53**				**12.50**				**14.34**				**4.28**

Total Lower Wells: 22 51

Total Upper Wells: 34 5

Notes:
NC = Head difference and vertical gradient not calculated due to non-equilibrium.
ND = No Data
ND* = Unreliable water level measurement
NE = Non-Equilibrium
† Wells that have historically or periodically exhibited non-equilibrium

Table F-4. Vertical Head Differences in Nested Wells
June 1997 through March 2009
Final Remedial Investitation Report
Casmalia Resources Superfund Site
Casmalia, California

						June 2001				September 2001				December 2001				March 2002				June 2002			
Primary Well and Site Area	Aquifer Unit	Secondary Well	Aquifer Unit	Elevation of Screened Zone Midpoints (ft MSL)	Midpoint Elevation Difference	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)
A-Drainage																									
MW-18C	U	MW-18D	L	421.9-181.8	240.10	418.64	416.90	0.01	1.74	419.34	416.92	0.01	2.42	418.52	417.05	0.01	1.47	418.99	416.86	0.01	2.13	418.10	416.15	0.01	1.95
RP-100A	U	RP-101C	L	420.6-395.8	24.80	429.64	418.69	0.44	10.95	428.15	418.49	0.39	9.66	428.23	418.58	0.39	9.65	426.24	418.33	0.32	7.91	424.01	417.52	0.26	6.49
RP-73A-2	U	RP-73D	L	343.1-236.4	106.70	370.45	367.29	0.03	3.16	368.87	367.28	0.01	1.59	367.79	367.45	0.00	0.34	366.48	367.51	-0.01	-1.03	365.91	367.48	-0.01	-1.57
RP-73B	U	RP-73D	L	343.5-236.4	107.10	369.01	367.29	0.02	1.72	367.56	367.28	0.00	0.28	366.51	367.45	-0.01	-0.94	365.25	367.51	-0.02	-2.26	363.81	367.48	-0.03	-3.67
RP-108A	U	RP-108B	U	340.4-327.1	13.30	346.85	348.70	-0.14	-1.85	345.82	347.48	-0.12	-1.66	345.36	346.93	-0.12	-1.57	344.55	346.09	-0.12	-1.54	343.68	344.45	-0.06	-0.77
Median Vertical Head Difference: A-Drainage:									**1.74**				**1.59**				**0.34**				**-1.03**				**-0.77**
B-Drainage																									
RP-6B	U	RP-6C†	L	357-297.4	59.60	372.22	NE	NC	NC	370.82	307.19	1.07	63.63	369.81	NE	NC	NC	367.69	306.87	1.02	60.82	366.47	306.69	1.00	59.78
RP-75A	U	RP-75B	U	324.1-295.6	28.50	335.72	329.90	0.20	5.82	335.36	329.53	0.20	5.83	335.43	329.53	0.21	5.90	334.99	328.97	0.21	6.02	334.78	328.45	0.22	6.33
RP-75A	U	RP-75C	L	324.1-248	76.10	335.72	341.14	-0.07	-5.42	335.36	340.63	-0.07	-5.27	335.43	340.44	-0.07	-5.01	334.99	340.03	-0.07	-5.04	334.78	339.83	-0.07	-5.05
RP-75B	U	RP-75C	L	295.6-248	47.60	329.90	341.14	-0.24	-11.24	329.53	340.63	-0.23	-11.10	329.53	340.44	-0.23	-10.91	328.97	340.03	-0.23	-11.06	328.45	339.83	-0.24	-11.38
Median Vertical Head Difference: B-Drainage:					**53.60**				**-5.42**				**0.28**				**-5.01**				**0.49**				**0.64**
C-Drainage																									
C2M	U	C2B	L	415.75-361	54.75	418.02	413.46	0.08	4.56	417.35	307.19	2.01	110.16	417.05	412.19	0.09	4.86	416.62	411.47	0.09	5.15	416.62	410.68	0.11	5.94
MW-3BU	U	MW-5BL	L	464.4-392.9	71.50	499.01	510.73	-0.16	-11.72	498.70	510.46	-0.16	-11.76	498.79	510.07	-0.16	-11.28	497.75	509.16	-0.16	-11.41	497.10	508.32	-0.16	-11.22
MW-4BU	L	MW-4BL	L	469-392.9	76.10	485.95	479.00	0.09	6.95	484.35	478.63	0.08	5.72	482.88	478.67	0.06	4.21	481.70	477.08	0.06	4.62	480.70	476.29	0.06	4.41
MW-7C	U	MW-7D	L	367.1-289.1	78.00	410.63	410.62	0.00	0.01	411.11	410.35	0.01	0.76	411.24	410.48	0.01	0.76	411.21	410.58	0.01	0.63	410.98	410.45	0.01	0.53
RP-13B	U	MW-6D	L	414-239	175.00	425.49	428.05	-0.01	-2.56	424.91	428.01	-0.02	-3.10	424.69	428.10	-0.02	-3.41	424.27	428.05	-0.02	-3.78	423.90	427.96	-0.02	-4.06
RP-100A	U	RP-24D	L	420.6-309	111.60	429.64	428.58	0.01	1.06	428.15	428.57	0.00	-0.42	428.23	428.61	0.00	-0.38	426.24	428.47	-0.02	-2.23	424.01	428.38	-0.04	-4.37
RP-72B	U	RP-72D†	L	329.2-239.9	89.30	364.39	363.91	0.01	0.48	363.32	359.41	0.04	3.91	362.96	NE	NC	NC	362.54	358.43	0.05	4.11	362.29	NE	NC	NC
RP-72A	U	RP-72D†	L	347.6-239.9	107.70	354.70	363.91	-0.09	-9.21	356.79	359.41	-0.02	-2.62	356.84	NE	NC	NC	356.73	358.43	-0.02	-1.70	356.66	NE	NC	NC
Median Vertical Head Difference: C-Drainage:									**0.24**				**0.17**				**0.19**				**-0.53**				**-1.76**
North-Drainage																									
RP-109B	U	RP-109D†	L	423.9-308	115.90	455.55	455.60	0.00	-0.05	454.78	454.71	0.00	0.07	453.94	454.19	0.00	-0.25	453.66	453.61	0.00	0.05	453.17	453.33	0.00	-0.16
RP-110B	U	RP-110D	L	420.2-329.5	90.70	441.17	441.00	0.00	0.17	441.10	441.17	0.00	-0.07	441.13	441.48	0.00	-0.35	440.70	441.03	0.00	-0.33	440.25	440.72	-0.01	-0.47
RP-41A	U	RP-41B†	L	472-445.4	26.60	475.12	NE	NC	NC	473.61	NE	NC	NC	472.71	NE	NC	NC	471.89	NE	NC	NC	471.33	NE	NC	NC
RP-41B	L	RP-41D†	L	445.4-239.6	205.80	476.28	NE	NC	NC	476.14	NE	NC	NC	475.67	NE	NC	NC	474.68	NE	NC	NC	474.15	NE	NC	NC
RP-41A	U	RP-41D†	L	472-239.6	232.40	475.12	NE	NC	NC	473.61	NE	NC	NC	472.71	NE	NC	NC	471.89	NE	NC	NC	471.33	NE	NC	NC
RGPZ-2B†	L	RGPZ-2C†	L	704-621.6	82.40	NE	NE	NC	NC	720.55	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-2C†	L	RGPZ-2D†	L	621.6-536.2	85.40	686.37	NE	NC	NC	684.26	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-2B†	L	RGPZ-2D	L	704-536.2	167.80	NE	647.39	NC	NC	720.55	643.99	0.46	76.56	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11B†	L	RGPZ-11C†	L	610.6-533.7	76.90	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11C†	L	RGPZ-11D	L	533.7-467.7	66.00	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11B†	L	RGPZ-11D	L	610.6-467.7	142.90	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-12C†	L	RGPZ-12D†	L	507.5-416	91.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-13C†	L	RGPZ-13D†	L	501.7-444.2	57.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
Median Vertical Head Difference: North-Drainage (excluding RP-70D):					**76.90**				**0.06**				**0.07**				**-0.30**				**-0.14**				**-0.31**
Recharge Areas																									
RP-16C	L	RP-16D†	L	544.1-473.4	70.70	711.01	606.73	1.47	104.28	710.64	607.57	1.46	103.07	712.27	609.14	1.46	103.13	713.01	609.02	1.47	103.99	713.80	608.72	1.49	105.08
RP-63C	L	RP-63D	L	606-515.6	90.40	628.90	604.51	0.27	24.39	628.89	604.49	0.27	24.40	628.70	604.80	0.26	23.90	627.08	604.49	0.25	22.59	607.65	604.46	0.04	3.19
RP-33C†	L	RP-33D	L	412.1-361	51.10	430.13	435.97	-0.11	-5.84	430.02	435.26	-0.10	-5.24	NE	435.92	NC	NC	430.19	434.59	-0.09	-4.40	430.13	433.99	-0.08	-3.86
Median Vertical Head Difference: Recharge Areas:					**70.70**				**24.39**				**24.40**				**63.52**				**22.59**				**3.19**
Interior Zone 1																									
LCW-3	U	RP-96C-2	L	515.9-472.1	43.80	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RG-10B	U	RP-29D	L	652.34-502	150.34	595.12	583.42	0.08	11.70	595.89	585.05	0.07	10.84	595.47	585.11	0.07	10.36	596.09	584.80	0.08	11.29	593.47	584.13	0.06	9.34
RG-1B	U	RG-1C†	L	420.21-363.28	56.93	430.33	437.38	-0.12	-7.05	429.50	436.99	-0.13	-7.49	429.61	436.81	-0.13	-7.20	428.93	436.41	-0.13	-7.48	427.83	434.68	-0.12	-6.85
RG-4B	U	RGPZ-4C	L	563.27-490.42	72.85	552.12	556.37	-0.06	-4.25	552.08	556.36	-0.06	-4.28	552.21	556.42	-0.06	-4.21	552.24	556.38	-0.06	-4.14	551.46	555.35	-0.05	-3.89
RG-9B†	U	RP-95D	L	503.06-261.7	241.36	520.75	499.16	0.09	21.59	516.11	500.87	0.06	15.24	513.20	501.92	0.05	11.28	510.91	502.24	0.04	8.67	NE	NE	NC	NC
WP-3S	L	WP-3D†	L	509.58-424.91	84.67	504.58	NE	NC	NC	504.24	NE	NC	NC	503.72	NE	NC	NC	503.88	NE	NC	NC	503.26	NE	NC	NC
RP-14B	U	RP-14D	L	526-379	147.00	527.74	509.45	0.12	18.29	526.74	509.42	0.12	17.32	526.50	509.52	0.12	16.98	526.24	509.53	0.11	16.71	525.33	509.03	0.11	16.30
RP-3C	L	RP-3D	L	509-454.5	54.50	NE	533.09	NC	NC	NE	532.83	NC	NC	NE	532.73	NC	NC	537.29	532.40	0.09	4.89	NE	531.48	NC	NC
RP-2B†	U	RP-2C	L	620-478	142.00	620.21	593.86	0.19	26.35	617.50	593.84	0.17	23.66	617.47	595.09	0.16	22.38	620.21	594.04	0.18	26.17	622.48	593.74	0.20	28.74
RP-2C	L	RP-2D	L	478-414.5	63.50	593.86	542.33	0.81	51.53	593.84	542.58	0.81	51.26	595.09	541.32	0.85	53.77	594.04	543.15	0.80	50.89	593.74	542.77	0.80	50.97
RP-3B	U	RP-3D†	L	532-454.5	77.50	535.22	533.09	0.03	2.13	535.01	532.83	0.03	2.18	535.01	532.73	0.03	2.28	534.93	532.40	0.03	2.53	534.32	531.48	0.04	2.84
RP-3B	U	RP-3C	L	532-509	23.00	535.22	NE	NC	NC	535.01	NE	NC	NC	535.01	NE	NC	NC	534.93	537.29	-0.10	-2.36	534.32	NE	NC	NC
RP-55C	L	RP-55C-2	L	452-435	17.00	506.59	509.12	-0.15	-2.53	506.49	509.27	-0.16	-2.78	506.54	509.74	-0.19	-3.20	506.68	509.82	-0.18	-3.14	506.29	507.07	-0.05	-0.78
PZ-P18-2A†	U	PZ-P18-2B†	U	459.2-447.2	12.00	NE	NE	NC	NC	NE	443.44	NC	NC	NE	443.83	NC	NC	NE	442.75	NC	NC	NE	449.20	NC	NC
PZ-PA5-2A†	U	PZ-PA5-2C	U	455.49-433.03	22.46	455.99	452.02	0.18	3.97	452.21	450.37	0.08	1.84	451.73	449.95	0.08	1.78	450.84	449.36	0.07	1.48	449.17	447.70	0.07	1.47
PZ-PA5-3A	U	PZ-PA5-3C	U	455.82-433.36	22.46	NE	454.24	NC	NC	454.51	452.99	0.07	1.52	453.79	452.51	0.06	1.28	452.66	451.53	0.05	1.13	449.04	449.11	0.00	-0.07
RGPZ-3C†	L	RGPZ-3D†	L	464.2-430.4	33.80	556.45	556.19	0.01	0.26	556.22	556.19	0.00	0.03	556.28	556.26	0.00	0.02	556.28	556.18	0.00	0.10	555.51	555.51	0.00	0.00
RGPZ-6B	L	RGPZ-6C	L	446.4-377.7	68.70	464.87	459.63	0.08	5.24	463.65	459.24	0.06	4.41	463.20	458.91	0.06	4.29	462.69	458.81	0.06	3.88	461.45	457.55	0.06	3.90
RGPZ-6C†	L	RGPZ-6D†	L	377.7-310.2	67.50	459.63	465.37	-0.09	-5.74	459.24	464.94	-0.08	-5.70	458.91	464.94	-0.09	-6.03	458.81	464.91	-0.09	-6.10	457.55	464.26	-0.10	-6.71
RGPZ-6B	L	RGPZ-6D†	L	446.4-310.2	136.20	464.87	465.37	0.00	-0.50	463.65	464.94	-0.01	-1.29	463.20	464.94	-0.01	-1.74	462.69	464.91	-0.02	-2.22	461.45	464.26	-0.02	-2.81
RGPZ-7C†	L	RGPZ-7D†	L	369.6-322.6	47.00	458.58	461.66	-0.07	-3.08	458.29	461.07	-0.06	-2.78	457.85	460.99	-0.07	-3.14	457.83	460.54	-0.06	-2.71	456.82	459.86	-0.06	-3.04
SW-15	U	RP-3D	L	538.2-454.5	83.70	544.94	533.09	0.14	11.85	NE	532.83	NC	NC	NE	532.73	NC	NC	544.67	532.40	0.15	12.27	NE	531.48	NC	NC
WP-4S	U	WP-4D	L	400.42-325.42	75.00	423.00	406.93	0.21	16.07	420.81	406.49	0.19	14.32	419.64	406.68	0.17	12.96	419.61	406.37	0.18	13.24	417.78	405.76	0.16	12.02
Median Vertical Head Difference: Interior Zone 1:									**3.97**				**1.84**				**1.78**				**2.00**				**0.74**

Total Lower Wells: 22 51
Total Upper Wells: 34 5

Notes:
NC = Head difference and vertical gradient not calculated due to non-equilibrium.
ND = No Data
ND* = Unreliable water level measurement
NE = Non-Equilibrium
† Wells that have historically or periodically exhibited non-equilibrium

Table F-4. Vertical Head Differences in Nested Wells

June 1997 through March 2009

Final Remedial Investitation Report

Casmalia Resources Superfund Site

Casmalia, California

						September 2002				December 2002				March 2003				June 2003				September 2003			
Primary Well and Site Area	Aquifer Unit	Secondary Well	Aquifer Unit	Elevation of Screened Zone Midpoints (ft MSL)	Midpoint Elevation Difference	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)
A-Drainage																									
MW-18C	U	MW-18D	L	421.9-181.8	240.10	418.50	416.13	0.01	2.37	418.04	416.10	0.01	1.94	418.51	416.14	0.01	2.37	418.64	416.28	0.01	2.36	419.24	416.56	0.01	2.68
RP-100A	U	RP-101C	L	420.6-395.8	24.80	423.49	417.47	0.24	6.02	423.35	417.46	0.24	5.89	422.89	417.62	0.21	5.27	423.84	417.81	0.24	6.03	423.77	418.02	0.23	5.75
RP-73A-2	U	RP-73D	L	343.1-236.4	106.70	362.61	366.93	-0.04	-4.32	360.99	366.77	-0.05	-5.78	359.16	366.69	-0.07	-7.53	357.20	366.96	-0.09	-9.76	355.54	366.65	-0.10	-11.11
RP-73B	U	RP-73D	L	343.5-236.4	107.10	361.67	366.93	-0.05	-5.26	360.14	366.77	-0.06	-6.63	326.92	366.69	-0.37	-39.77	357.02	366.96	-0.09	-9.94	355.17	366.65	-0.11	-11.48
RP-108A	U	RP-108B	U	340.4-327.1	13.30	342.19	343.65	-0.11	-1.46	341.50	342.99	-0.11	-1.49	341.34	342.39	-0.08	-1.05	340.41	341.70	-0.10	-1.29	339.26	340.93	-0.13	-1.67
Median Vertical Head Difference: A-Drainage:									**-1.46**				**-1.49**				**-1.05**				**-1.29**				**-1.67**
B-Drainage																									
RP-6B	U	RP-6C†	L	357-297.4	59.60	364.95	306.55	0.98	58.40	364.29	306.40	0.97	57.89	363.75	306.27	0.96	57.48	363.68	307.01	0.95	56.67	363.08	305.90	0.96	57.18
RP-75A	U	RP-75B	U	324.1-295.6	28.50	334.14	327.43	0.24	6.71	334.06	327.14	0.24	6.92	334.58	326.92	0.27	7.66	334.27	327.01	0.25	7.26	334.25	326.50	0.27	7.75
RP-75A	U	RP-75C	L	324.1-248	76.10	334.14	339.07	-0.06	-4.93	334.06	338.93	-0.06	-4.87	334.58	338.82	-0.06	-4.24	334.27	339.27	-0.07	-5.00	334.25	339.13	-0.06	-4.88
RP-75B	U	RP-75C	L	295.6-248	47.60	327.43	339.07	-0.24	-11.64	327.14	338.93	-0.25	-11.79	326.92	338.82	-0.25	-11.90	327.01	339.27	-0.26	-12.26	326.50	339.13	-0.27	-12.63
Median Vertical Head Difference: B-Drainage:					**53.60**				**0.89**				**1.03**				**1.71**				**1.13**				**1.44**
C-Drainage																									
C2M	U	C2B	L	415.75-361	54.75	413.39	409.20	0.08	4.19	414.02	408.48	0.10	5.54	414.02	408.08	0.11	5.94	NE	409.66	NC	NC	413.65	407.49	0.11	6.16
MW-3BU	U	MW-5BL	L	464.4-392.9	71.50	496.14	507.03	-0.15	-10.89	495.65	506.57	-0.15	-10.92	495.14	506.00	-0.15	-10.86	494.98	505.49	-0.15	-10.51	495.01	505.32	-0.14	-10.31
MW-4BU	L	MW-4BL	L	469-392.9	76.10	479.72	474.89	0.06	4.83	479.40	474.64	0.06	4.76	479.12	474.34	0.06	4.78	494.98	474.59	0.27	20.39	479.05	474.15	0.06	4.90
MW-7C	U	MW-7D	L	367.1-289.1	78.00	409.39	409.65	0.00	-0.26	408.62	409.55	-0.01	-0.93	409.12	409.32	0.00	-0.20	408.89	408.79	0.00	0.10	407.65	408.95	-0.02	-1.30
RP-13B	U	MW-6D	L	414-239	175.00	423.03	427.25	-0.02	-4.22	422.94	427.20	-0.02	-4.26	423.34	427.18	-0.02	-3.84	423.22	427.81	-0.03	-4.59	423.01	427.70	-0.03	-4.69
RP-100A	U	RP-24D	L	420.6-309	111.60	423.49	427.70	-0.04	-4.21	423.35	427.63	-0.04	-4.28	422.89	427.54	-0.04	-4.65	423.84	427.98	-0.04	-4.14	423.77	427.93	-0.04	-4.16
RP-72B	U	RP-72D†	L	329.2-239.9	89.30	362.08	357.37	0.05	4.71	361.91	357.25	0.05	4.66	361.86	357.23	0.05	4.63	361.60	356.65	0.06	4.95	361.54	356.75	0.05	4.79
RP-72A	U	RP-72D†	L	347.6-239.9	107.70	356.04	357.37	-0.01	-1.33	356.08	357.25	-0.01	-1.17	356.24	357.23	-0.01	-0.99	356.93	356.65	0.00	0.28	356.90	356.75	0.00	0.15
Median Vertical Head Difference: C-Drainage:									**-0.79**				**-1.05**				**-0.59**				**0.10**				**-0.58**
North-Drainage																									
RP-109B	U	RP-109D†	L	423.9-308	115.90	452.82	452.92	0.00	-0.10	452.42	452.65	0.00	-0.23	452.34	NE	NC	NC	452.05	451.84	0.00	0.21	451.33	451.25	0.00	0.08
RP-110B	U	RP-110D	L	420.2-329.5	90.70	439.26	439.92	-0.01	-0.66	439.13	439.68	-0.01	-0.55	440.61	438.60	0.02	2.01	439.59	440.03	0.00	-0.44	439.11	439.66	-0.01	-0.55
RP-41A	U	RP-41B†	L	472-445.4	26.60	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RP-41B	L	RP-41D†	L	445.4-239.6	205.80	473.12	NE	NC	NC	472.91	NE	NC	NC	472.65	NE	NC	NC	473.07	NE	NC	NC	472.45	NE	NC	NC
RP-41A	U	RP-41D†	L	472-239.6	232.40	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-2B†	L	RGPZ-2C†	L	704-621.6	82.40	NE	NE	NC	NC	701.96	NE	NC	NC	701.10	NE	NC	NC	700.97	NE	NC	NC	700.27	NE	NC	NC
RGPZ-2C†	L	RGPZ-2D†	L	621.6-536.2	85.40	NE	NE	NC	NC	661.81	NE	NC	NC	662.81	NE	NC	NC	663.67	NE	NC	NC	663.71	NE	NC	NC
RGPZ-2B†	L	RGPZ-2D	L	704-536.2	167.80	NE	NE	NC	NC	701.96	624.41	0.46	77.55	701.10	626.35	0.45	74.75	700.97	627.72	0.44	73.25	700.27	628.08	0.43	72.19
RGPZ-11B†	L	RGPZ-11C†	L	610.6-533.7	76.90	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11C†	L	RGPZ-11D	L	533.7-467.7	66.00	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11B†	L	RGPZ-11D	L	610.6-467.7	142.90	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-12C†	L	RGPZ-12D†	L	507.5-416	91.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-13C†	L	RGPZ-13D†	L	501.7-444.2	57.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
Median Vertical Head Difference: North-Drainage (excluding RP-70D):					**76.90**				**-0.38**				**-0.23**				**38.38**				**0.21**				**0.08**
Recharge Areas																									
RP-16C	L	RP-16D†	L	544.1-473.4	70.70	714.32	608.47	1.50	105.85	713.80	628.50	1.21	85.30	715.11	608.60	1.51	106.51	715.53	608.72	1.51	106.81	715.27	609.19	1.50	106.08
RP-63C	L	RP-63D	L	606-515.6	90.40	626.97	604.85	0.24	22.12	626.68	603.79	0.25	22.89	626.65	603.73	0.25	22.92	626.04	603.84	0.25	22.20	626.48	604.03	0.25	22.45
RP-33C†	L	RP-33D	L	412.1-361	51.10	430.02	431.77	-0.03	-1.75	430.00	430.46	-0.01	-0.46	430.07	430.55	-0.01	-0.48	430.02	430.12	0.00	-0.10	429.90	429.18	0.01	0.72
Median Vertical Head Difference: Recharge Areas:					**70.70**				**22.12**				**22.89**				**22.92**				**22.20**				**22.45**
Interior Zone 1																									
LCW-3	U	RP-96C-2	L	515.9-472.1	43.80	NE	NE	NC	NC	492.02	NE	NC	NC	491.40	NE	NC	NC	491.50	NE	NC	NC	491.04	NE	NC	NC
RG-10B	U	RP-29D	L	652.34-502	150.34	593.46	584.40	0.06	9.06	595.61	584.03	0.08	11.58	596.39	584.65	0.08	11.74	595.87	584.73	0.07	11.14	594.22	584.53	0.06	9.69
RG-1B	U	RG-1C†	L	420.21-363.28	56.93	426.40	432.55	-0.11	-6.15	426.23	432.09	-0.10	-5.86	424.52	431.43	-0.12	-6.91	426.33	433.39	-0.12	-7.06	424.71	431.29	-0.12	-6.58
RG-4B	U	RGPZ-4C	L	563.27-490.42	72.85	551.38	555.17	-0.05	-3.79	NE	555.24	NC	NC	551.65	555.15	-0.05	-3.50	551.88	555.48	-0.05	-3.60	552.07	555.56	-0.05	-3.49
RG-9B†	U	RP-95D	L	503.06-261.7	241.36	NE	NE	NC	NC	479.57	523.40	-0.18	-43.83	478.91	519.63	-0.17	-40.72	479.01	521.33	-0.18	-42.32	478.36	522.50	-0.18	-44.14
WP-3S	L	WP-3D†	L	509.58-424.91	84.67	NE	NE	NC	NC	501.04	NE	NC	NC	500.67	NE	NC	NC	503.31	NE	NC	NC	502.70	NE	NC	NC
RP-14B	U	RP-14D	L	526-379	147.00	523.94	508.72	0.10	15.22	523.76	508.51	0.10	15.25	526.23	508.61	0.12	17.62	525.55	508.02	0.12	17.53	524.84	508.23	0.11	16.61
RP-3C	L	RP-3D	L	509-454.5	54.50	NE	529.68	NC	NC	NE	530.99	NC	NC	NE	530.75	NC	NC	536.20	530.98	0.10	5.22	NE	531.13	NE	NE
RP-2B†	U	RP-2C	L	620-478	142.00	624.39	592.89	0.22	31.50	625.70	592.62	0.23	33.08	624.39	592.52	0.22	31.87	621.34	593.27	0.20	28.07	617.84	593.23	0.17	24.61
RP-2C	L	RP-2D	L	478-414.5	63.50	592.89	542.33	0.80	50.56	592.62	542.60	0.79	50.02	592.52	542.58	0.79	49.94	593.27	542.64	0.80	50.63	593.23	542.90	0.79	50.33
RP-3B	U	RP-3D†	L	532-454.5	77.50	534.21	529.68	0.06	4.53	534.23	530.99	0.04	3.24	534.17	530.75	0.04	3.42	534.48	530.98	0.05	3.50	534.79	531.13	0.05	3.66
RP-3B	U	RP-3C	L	532-509	23.00	534.21	NE	NC	NC	534.23	NE	NC	NC	534.17	NE	NC	NC	534.48	536.20	-0.07	-1.72	534.79	NE	NC	NC
RP-55C	L	RP-55C-2	L	452-435	17.00	505.19	506.55	-0.08	-1.36	504.80	506.63	-0.11	-1.83	504.74	505.21	-0.03	-0.47	504.74	507.66	-0.17	-2.92	504.69	507.68	-0.18	-2.99
PZ-P18-2A†	U	PZ-P18-2B†	U	459.2-447.2	12.00	NE	445.08	NC	NC	NE	444.20	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	443.50	NC	NC
PZ-PA5-2A†	U	PZ-PA5-2C	U	455.49-433.03	22.46	NE	444.21	NC	NC	NE	443.31	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	442.20	NC	NC
PZ-PA5-3A	U	PZ-PA5-3C	U	455.82-433.36	22.46	NE	446.01	NC	NC	NE	445.32	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	444.12	NC	NC
RGPZ-3C†	L	RGPZ-3D†	L	464.2-430.4	33.80	555.26	554.96	0.01	0.30	555.23	555.03	0.01	0.20	555.23	554.97	0.01	0.26	555.27	555.19	0.00	0.08	555.43	555.33	0.00	0.10
RGPZ-6B	L	RGPZ-6C	L	446.4-377.7	68.70	460.59	456.50	0.06	4.09	460.55	457.36	0.05	3.19	457.95	461.48	-0.05	-3.53	460.43	458.09	0.03	2.34	459.20	457.43	0.03	1.77
RGPZ-6C†	L	RGPZ-6D†	L	377.7-310.2	67.50	456.50	461.51	-0.07	-5.01	457.36	461.40	-0.06	-4.04	461.48	461.14	0.01	0.34	458.09	461.01	-0.04	-2.92	457.43	457.43	0.00	0.00
RGPZ-6B	L	RGPZ-6D†	L	446.4-310.2	136.20	460.59	461.51	-0.01	-0.92	460.55	461.40	-0.01	-0.85	457.95	461.14	-0.02	-3.19	460.43	461.01	0.00	-0.58	459.20	460.70	-0.01	-1.50
RGPZ-7C†	L	RGPZ-7D†	L	369.6-322.6	47.00	456.21	459.22	-0.06	-3.01	456.45	459.17	-0.06	-2.72	456.97	459.38	-0.05	-2.41	457.02	459.01	-0.04	-1.99	456.32	458.20	-0.04	-1.88
SW-15	U	RP-3D	L	538.2-454.5	83.70	NE	529.68	NC	NC	NE	530.99	NC	NC	NE	530.75	NC	NC	NE	530.98	NC	NC	NE	531.13	NC	NC
WP-4S	U	WP-4D	L	400.42-325.42	75.00	415.30	404.72	0.14	10.58	414.46	404.68	0.13	9.78	415.19	405.35	0.13	9.84	414.49	405.09	0.13	9.40	413.26	404.69	0.11	8.57
Median Vertical Head Difference: Interior Zone 1:									**2.19**				**1.70**				**0.26**				**0.08**				**0.10**

Total Lower Wells:	22	51
Total Upper Wells:	34	5

Notes:
NC = Head difference and vertical gradient not calculated due to non-equilibrium.
ND = No Data
ND* = Unreliable water level measurement
NE = Non-Equilibrium
† Wells that have historically or periodically exhibited non-equilibrium

Table F-4. Vertical Head Differences in Nested Wells

June 1997 through March 2009

Final Remedial Investitation Report

Casmalia Resources Superfund Site

Casmalia, California

						December 2003				March 2004				April 2004				August 2004				November 2004			
Primary Well and Site Area	Aquifer Unit	Secondary Well	Aquifer Unit	Elevation of Screened Zone Midpoints (ft MSL)	Midpoint Elevation Difference	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)
A-Drainage																									
MW-18C	U	MW-18D	L	421.9-181.8	240.10	ND	413.65	NC	NC	419.41	417.48	0.01	1.93	NE	417.05	NC	NC	NE	417.16	NC	NC	418.96	417.18	0.01	1.78
RP-100A	U	RP-101C	L	420.6-395.8	24.80	424.28	417.92	0.26	6.36	423.81	418.29	0.22	5.52	423.65	417.61	0.24	6.04	423.63	417.97	0.23	5.66	423.76	417.94	0.23	5.82
RP-73A-2	U	RP-73D	L	343.1-236.4	106.70	353.81	366.26	-0.12	-12.45	352.32	365.14	-0.12	-12.82	352.31	365.10	-0.12	-12.79	349.42	363.09	-0.13	-13.67	348.09	362.29	-0.13	-14.20
RP-73B	U	RP-73D	L	343.5-236.4	107.10	353.64	366.26	-0.12	-12.62	352.20	365.14	-0.12	-12.94	351.90	365.10	-0.12	-13.20	349.62	336.09	0.13	13.53	348.47	362.29	-0.13	-13.82
RP-108A	U	RP-108B	U	340.4-327.1	13.30	ND	340.70	NC	NC	339.16	340.64	-0.11	-1.48	338.64	340.98	-0.18	-2.34	Dry	339.48	NC	NC	Dry	339.30	NC	NC
Median Vertical Head Difference: A-Drainage:									**-12.45**				**-7.15**				**-7.57**				**5.66**				**-6.02**
B-Drainage																									
RP-6B	U	RP-6C†	L	357-297.4	59.60	363.32	305.76	0.97	57.56	364.76	NE	NC	NC	364.30	304.93	1.00	59.37	362.47	NE	NC	NC	362.02	NE	NC	NC
RP-75A	U	RP-75B	U	324.1-295.6	28.50	334.29	326.18	0.28	8.11	334.54	326.12	0.30	8.42	334.39	325.98	0.30	8.41	334.01	325.26	0.31	8.75	333.94	325.02	0.31	8.92
RP-75A	U	RP-75C	L	324.1-248	76.10	334.29	339.04	-0.06	-4.75	334.54	339.39	-0.06	-4.85	334.39	339.23	-0.06	-4.84	334.01	338.65	-0.06	-4.64	333.94	338.62	-0.06	-4.68
RP-75B	U	RP-75C	L	295.6-248	47.60	326.18	339.04	-0.27	-12.86	326.12	339.39	-0.28	-13.27	325.98	339.23	-0.28	-13.25	325.26	338.65	-0.28	-13.39	325.02	338.62	-0.29	-13.60
Median Vertical Head Difference: B-Drainage:					**53.60**				**1.68**				**-4.85**				**1.78**				**-4.64**				**-4.68**
C-Drainage																									
C2M	U	C2B	L	415.75-361	54.75	412.92	405.07	0.14	7.85	414.92	405.95	0.16	8.97	415.18	406.50	0.16	8.68	413.62	406.10	0.14	7.52	412.57	405.36	0.13	7.21
MW-3BU	U	MW-5BL	L	464.4-392.9	71.50	494.85	504.94	-0.14	-10.09	494.78	504.15	-0.13	-9.37	494.27	503.52	-0.13	-9.25	493.95	502.89	-0.13	-8.94	493.65	502.79	-0.13	-9.14
MW-4BU	L	MW-4BL	L	469-392.9	76.10	479.13	473.92	0.07	5.21	481.66	474.46	0.09	7.20	481.57	474.30	0.10	7.27	481.06	474.75	0.08	6.31	481.11	474.55	0.09	6.56
MW-7C	U	MW-7D	L	367.1-289.1	78.00	407.16	409.35	-0.03	-2.19	408.00	405.65	0.03	2.35	406.55	406.45	0.00	0.10	407.19	408.16	-0.01	-0.97	407.40	408.30	-0.01	-0.90
RP-13B	U	MW-6D	L	414-239	175.00	422.89	427.55	-0.03	-4.66	423.08	427.54	-0.03	-4.46	423.10	427.51	-0.03	-4.41	422.87	427.40	-0.03	-4.53	422.75	427.31	-0.03	-4.56
RP-100A	U	RP-24D	L	420.6-309	111.60	424.28	424.56	0.00	-0.28	423.81	427.78	-0.04	-3.97	423.65	428.27	-0.04	-4.62	423.63	427.48	-0.03	-3.85	423.76	427.33	-0.03	-3.57
RP-72B	U	RP-72D†	L	329.2-239.9	89.30	362.33	356.93	0.06	5.40	362.50	357.54	0.06	4.96	362.02	356.98	0.06	5.04	361.78	356.58	0.06	5.20	361.73	356.33	0.06	5.40
RP-72A	U	RP-72D†	L	347.6-239.9	107.70	357.03	356.93	0.00	0.10	357.29	357.54	0.00	-0.25	357.25	356.98	0.00	0.27	357.35	356.58	0.01	0.77	357.35	356.33	0.01	1.02
Median Vertical Head Difference: C-Drainage:									**-0.09**				**1.05**				**0.19**				**-0.10**				**0.06**
North-Drainage																									
RP-109B	U	RP-109D†	L	423.9-308	115.90	451.47	450.95	0.00	0.52	451.25	450.81	0.00	0.44	451.08	450.85	0.00	0.23	450.25	450.20	0.00	0.05	450.16	449.80	0.00	0.36
RP-110B	U	RP-110D	L	420.2-329.5	90.70	438.84	439.45	-0.01	-0.61	439.45	440.01	-0.01	-0.56	439.40	440.80	-0.02	-1.40	438.48	439.07	-0.01	-0.59	438.18	438.89	-0.01	-0.71
RP-41A	U	RP-41B†	L	472-445.4	26.60	ND	472.63	NC	NC	470.48	471.94	-0.05	-1.46	Dry	471.93	NC	NC	Dry	471.34	NC	NC	470.48	471.04	-0.02	-0.56
RP-41B	L	RP-41D†	L	445.4-239.6	205.80	472.63	480.22	-0.04	-7.59	471.94	450.87	0.10	21.07	471.93	NE	NC	NC	471.34	NE	NC	NC	471.04	480.02	-0.04	-8.98
RP-41A	U	RP-41D†	L	472-239.6	232.40	ND	480.22	NC	NC	470.48	480.57	-0.04	-10.09	Dry	NE	NC	NC	Dry	NE	NC	NC	470.48	NE	NC	NC
RGPZ-2B†	L	RGPZ-2C†	L	704-621.6	82.40	699.65	664.72	0.42	34.93	699.22	NE	NC	NC	699.05	665.78	0.40	33.27	698.98	666.08	NC	NC	696.60	665.38	0.38	31.22
RGPZ-2C†	L	RGPZ-2D†	L	621.6-536.2	85.40	664.72	629.74	0.41	34.98	NE	630.17	NC	NC	665.78	629.97	0.42	35.81	666.08	630.42	NC	NC	665.38	601.22	0.75	64.16
RGPZ-2B†	L	RGPZ-2D	L	704-536.2	167.80	699.65	629.74	0.42	69.91	699.22	630.17	0.41	69.05	699.05	629.97	0.41	69.08	698.98	630.42	0.41	68.56	696.60	601.22	0.57	95.38
RGPZ-11B†	L	RGPZ-11C†	L	610.6-533.7	76.90	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	619.50	554.17	0.85	65.33
RGPZ-11C†	L	RGPZ-11D	L	533.7-467.7	66.00	NE	NE	NC	NC	NE	NE	NC	NC	NE	621.04	NC	NC	NE	619.42	NC	NC	554.17	619.12	-0.98	-64.95
RGPZ-11B†	L	RGPZ-11D	L	610.6-467.7	142.90	NE	NE	NC	NC	NE	NE	NC	NC	NE	621.04	NC	NC	NE	619.42	NC	NC	619.50	619.12	0.00	0.38
RGPZ-12C†	L	RGPZ-12D†	L	507.5-416	91.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	584.53	417.46	1.83	167.07
RGPZ-13C†	L	RGPZ-13D†	L	501.7-444.2	57.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	597.70	562.67	0.61	35.03
Median Vertical Head Difference: North-Drainage (excluding RP-70D):					**76.90**				**17.73**				**-0.06**				**33.27**				**0.05**				**15.80**
Recharge Areas																									
RP-16C	L	RP-16D†	L	544.1-473.4	70.70	715.06	609.80	1.49	105.26	642.05	609.98	0.45	32.07	641.39	NE	NC	NC	NE	NE	NC	NC	ND	NE	NC	NC
RP-63C	L	RP-63D	L	606-515.6	90.40	625.92	603.98	0.24	21.94	625.56	604.53	0.23	21.03	625.25	605.16	0.22	20.09	626.28	603.67	0.25	22.61	625.33	603.49	0.24	21.84
RP-33C†	L	RP-33D	L	412.1-361	51.10	429.79	428.91	0.02	0.88	429.73	429.47	0.01	0.26	NE	429.52	NC	NC	NE	427.65	NC	NC	ND	426.91	NC	NC
Median Vertical Head Difference: Recharge Areas:					**70.70**				**21.94**				**21.03**				**20.09**				**22.61**				**21.84**
Interior Zone 1																									
LCW-3	U	RP-96C-2	L	515.9-472.1	43.80	490.80	ND	NC	NC	490.45	465.81	0.56	24.64	490.12	Dry	NC	NC	489.90	Dry	NC	NC	489.65	Dry	NC	NC
RG-10B	U	RP-29D	L	652.34-502	150.34	592.79	579.98	0.09	12.81	NE	580.73	NC	NC	596.89	581.46	0.10	15.43	594.37	580.73	0.09	13.64	584.42	578.86	0.04	5.56
RG-1B	U	RG-1C†	L	420.21-363.28	56.93	424.54	429.16	-0.08	-4.62	426.18	432.36	-0.11	-6.18	425.42	432.33	-0.12	-6.91	423.59	NE	NC	NC	423.68	429.22	-0.10	-5.54
RG-4B	U	RGPZ-4C	L	563.27-490.42	72.85	ND*	555.98	NC	NC	552.44	556.17	-0.05	-3.73	552.17	556.00	-0.05	-3.83	552.14	554.98	-0.04	-2.84	551.79	554.48	-0.04	-2.69
RG-9B†	U	RP-95D	L	503.06-261.7	241.36	478.13	522.25	-0.18	-44.12	478.38	521.63	NC	NC	478.36	521.64	-0.18	-43.28	477.81	519.23	-0.17	-41.42	505.65	518.48	-0.05	-12.83
WP-3S	L	WP-3D†	L	509.58-424.91	84.67	500.60	NE	NC	NC	501.41	NE	NC	NC	501.44	NE	NC	NC	501.74	491.92	0.12	9.82	500.63	478.39	0.26	22.24
RP-14B	U	RP-14D	L	526-379	147.00	524.14	508.14	0.11	16.00	529.86	520.16	0.07	9.70	527.54	518.08	0.06	9.46	524.34	517.13	0.05	7.21	523.05	516.93	0.04	6.12
RP-3C	L	RP-3D	L	509-454.5	54.50	535.97	ND	NC	NC	536.23	531.06	0.09	5.17	535.85	531.38	0.08	4.47	Dry	530.55	NC	NC	Dry	530.35	NC	NC
RP-2B†	U	RP-2C	L	620-478	142.00	618.15	593.50	0.17	24.65	622.15	593.26	0.20	28.89	620.90	593.16	0.20	27.74	617.16	593.15	0.17	24.01	617.15	593.15	0.17	24.00
RP-2C	L	RP-2D	L	478-414.5	63.50	593.48	543.21	0.79	50.27	593.26	543.78	0.78	49.48	593.15	NE	NC	NC	593.15	543.91	0.78	49.24	593.15	544.28	0.77	48.87
RP-3B	U	RP-3D†	L	532-454.5	77.50	534.25	ND	NC	NC	534.63	531.06	0.05	3.57	534.62	531.38	0.04	3.24	534.87	530.55	0.06	4.32	534.73	530.35	0.06	4.38
RP-3B	U	RP-3C	L	532-509	23.00	534.25	535.97	-0.07	-1.72	534.63	536.23	-0.07	-1.60	534.62	535.85	-0.05	-1.23	534.87	Dry	NC	NC	534.73	Dry	NC	NC
RP-55C	L	RP-55C-2	L	452-435	17.00	504.84	507.35	-0.15	-2.51	504.49	507.34	-0.17	-2.85	504.24	508.76	NV	NC	NE	508.07	NC	NC	NE	507.97	NC	NC
PZ-P18-2A†	U	PZ-P18-2B†	U	459.2-447.2	12.00	454.65	441.76	1.07	12.89	454.65	442.76	0.99	11.89	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC
PZ-PA5-2A†	U	PZ-PA5-2C	U	455.49-433.03	22.46	448.17	440.46	0.34	7.71	448.16	440.71	0.33	7.45	448.17	440.35	0.35	7.82	Dry	438.70	NC	NC	448.12	437.87	0.46	10.25
PZ-PA5-3A	U	PZ-PA5-3C	U	455.82-433.36	22.46	448.37	443.56	0.21	4.81	448.46	443.45	0.22	5.01	Dry	442.79	NC	NC	448.33	440.89	NC	NC	448.33	440.35	0.36	7.98
RGPZ-3C†	L	RGPZ-3D†	L	464.2-430.4	33.80	555.47	555.74	-0.01	-0.27	557.20	555.99	0.04	1.21	556.16	555.63	0.02	0.53	555.48	554.76	0.02	0.72	516.47	554.29	-1.12	-37.82
RGPZ-6B	L	RGPZ-6C	L	446.4-377.7	68.70	459.15	456.90	0.03	2.25	461.49	457.75	0.05	3.74	461.63	457.74	0.06	3.89	459.10	457.40	0.02	1.70	461.49	455.85	0.08	5.64
RGPZ-6C†	L	RGPZ-6D†	L	377.7-310.2	67.50	456.90	460.72	-0.06	-3.82	457.75	461.50	-0.06	-3.75	457.74	461.49	-0.06	-3.75	457.40	462.00	-0.07	-4.60	455.85	415.62	0.60	40.23
RGPZ-6B	L	RGPZ-6D†	L	446.4-310.2	136.20	459.15	460.72	-0.01	-1.57	461.49	461.50	0.00	-0.01	461.63	461.49	0.00	0.14	459.10	462.00	-0.02	-2.90	461.49	415.62	0.34	45.87
RGPZ-7C†	L	RGPZ-7D†	L	369.6-322.6	47.00	455.08	457.88	-0.06	-2.80	456.98	459.87	-0.06	-2.89	456.96	459.79	-0.06	-2.83	456.82	459.69	-0.06	-2.87	455.23	457.82	-0.06	-2.59
SW-15	U	RP-3D	L	538.2-454.5	83.70	544.65	ND	NC	NC	544.67	531.06	0.16	13.61	543.18	531.38	0.14	11.80	Dry	530.55	NC	NC	Dry	530.35	NC	NC
WP-4S	U	WP-4D	L	400.42-325.42	75.00	412.48	404.47	0.11	8.01	413.90	404.59	0.12	9.31	414.15	404.37	0.13	9.78	412.33	403.74	0.11	8.59	411.54	403.63	0.11	7.91
Median Vertical Head Difference: Interior Zone 1:									**2.25**				**4.38**				**3.24**				**3.01**				**6.12**

Total Lower Wells: 22 51

Total Upper Wells: 34 5

Notes:
NC = Head difference and vertical gradient not calculated due to non-equilibrium.
ND = No Data
ND* = Unreliable water level measurement
NE = Non-Equilibrium
† Wells that have historically or periodically exhibited non-equilibrium

Table F-4. Vertical Head Differences in Nested Wells

June 1997 through March 2009

Final Remedial Investitation Report

Casmalia Resources Superfund Site

Casmalia, California

						February 2005				May 2005				August 2005				December 2005				March 2006			
Primary Well and Site Area	Aquifer Unit	Secondary Well	Aquifer Unit	Elevation of Screened Zone Midpoints (ft MSL)	Midpoint Elevation Difference	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)
A-Drainage																									
MW-18C	U	MW-18D	L	421.9-181.8	240.10	NE	ND	NC	NC	NE	417.55	NC	NC	NE	417.22	NC	NC	NE	417.06	NC	NC	NE	417.13	NC	NC
RP-100A	U	RP-101C	L	420.6-395.8	24.80	432.26	418.74	0.55	13.52	429.91	418.84	0.45	11.07	429.62	418.87	0.43	10.75	427.60	418.58	0.36	9.02	428.06	418.79	0.37	9.27
RP-73A-2	U	RP-73D	L	343.1-236.4	106.70	358.29	361.59	-0.03	-3.30	359.48	361.93	-0.02	-2.45	362.56	360.61	0.02	1.95	361.88	360.64	0.01	1.24	361.99	360.94	0.01	1.05
RP-73B	U	RP-73D	L	343.5-236.4	107.10	359.52	361.59	-0.02	-2.07	359.38	361.93	-0.02	-2.55	361.41	360.61	0.01	0.80	360.52	360.64	0.00	-0.12	360.43	360.94	0.00	-0.51
RP-108A	U	RP-108B	U	340.4-327.1	13.30	343.21	345.75	NC	NC	344.40	347.45	-0.23	-3.05	344.14	347.17	-0.23	-3.03	341.60	343.64	-0.15	-2.04	343.87	344.35	-0.04	-0.48
Median Vertical Head Difference: A-Drainage:									**-2.07**				**-2.50**				**1.38**				**0.56**				**0.28**
B-Drainage																									
RP-6B	U	RP-6C†	L	357-297.4	59.60	362.02	305.07	0.96	56.95	365.46	304.79	1.02	60.67	364.49	304.19	1.01	60.30	365.00	304.51	1.01	60.49	365.97	304.38	1.03	61.59
RP-75A	U	RP-75B	U	324.1-295.6	28.50	338.94	326.06	0.45	12.88	335.29	326.64	0.30	8.65	335.08	327.17	0.28	7.91	334.72	326.87	0.28	7.85	334.99	326.84	0.29	8.15
RP-75A	U	RP-75C	L	324.1-248	76.10	352.22	338.94	0.17	13.28	335.29	340.23	-0.06	-4.94	335.08	340.06	-0.07	-4.98	334.72	339.43	-0.06	-4.71	334.99	339.19	-0.06	-4.20
RP-75B	U	RP-75C	L	295.6-248	47.60	326.03	338.94	-0.27	-12.91	326.64	340.23	-0.29	-13.59	327.17	340.06	-0.27	-12.89	326.87	339.43	-0.26	-12.56	326.84	339.19	-0.26	-12.35
Median Vertical Head Difference: B-Drainage:					**53.60**				**13.08**				**1.86**				**1.46**				**1.57**				**1.98**
C-Drainage																									
C2M	U	C2B	L	415.75-361	54.75	416.42	407.81	0.16	8.61	416.52	407.11	0.17	9.41	416.27	409.96	0.12	6.31	414.61	406.90	0.14	7.71	415.72	407.36	0.15	8.36
MW-3BU	U	MW-5BL	L	464.4-392.9	71.50	494.73	503.59	-0.12	-8.86	496.60	505.59	-0.13	-8.99	495.52	504.57	-0.13	-9.05	496.03	505.10	-0.13	-9.07	496.16	505.47	-0.13	-9.31
MW-4BU	L	MW-4BL	L	469-392.9	76.10	483.41	ND	NC	NC	485.01	477.33	0.10	7.68	483.93	477.10	0.09	6.83	483.10	476.70	0.08	6.40	483.38	477.05	0.08	6.33
MW-7C	U	MW-7D	L	367.1-289.1	78.00	407.35	408.09	-0.01	-0.74	408.02	409.35	-0.02	-1.33	NE	405.52	NC	NC	407.63	409.52	-0.02	-1.89	408.70	410.29	-0.02	-1.59
RP-13B	U	MW-6D	L	414-239	175.00	424.44	427.41	-0.02	-2.97	NE	427.59	NC	NC	425.36	427.56	-0.01	-2.20	424.33	427.50	-0.02	-3.17	424.45	427.49	-0.02	-3.04
RP-100A	U	RP-24D	L	420.6-309	111.60	432.26	427.23	0.05	5.03	429.91	427.36	0.02	2.55	429.62	427.29	0.02	2.33	427.60	427.38	0.00	0.22	428.06	427.20	0.01	0.86
RP-72B	U	RP-72D†	L	329.2-239.9	89.30	363.88	357.97	0.07	5.91	363.70	358.45	0.06	5.25	364.13	358.40	0.06	5.73	361.85	357.22	0.05	4.63	361.86	357.31	0.05	4.55
RP-72A	U	RP-72D†	L	347.6-239.9	107.70	357.35	357.97	-0.01	-0.62	356.94	358.45	-0.01	-1.51	356.84	358.40	-0.01	-1.56	356.85	357.22	0.00	-0.37	356.70	357.31	-0.01	-0.61
Median Vertical Head Difference: C-Drainage:									**-0.62**				**0.61**				**0.38**				**-0.37**				**-0.61**
North-Drainage																									
RP-109B	U	RP-109D†	L	423.9-308	115.90	451.00	450.41	0.01	0.59	451.06	450.83	0.00	0.23	449.04	451.12	-0.02	-2.08	452.55	452.33	0.00	0.22	452.54	452.15	0.00	0.39
RP-110B	U	RP-110D	L	420.2-329.5	90.70	439.35	439.37	0.00	-0.02	441.45	438.77	0.03	2.68	440.47	439.07	0.02	1.40	439.63	439.81	0.00	-0.18	439.87	440.11	0.00	-0.24
RP-41A	U	RP-41B†	L	472-445.4	26.60	471.39	471.39	0.00	0.00	471.23	471.57	-0.01	-0.34	470.62	472.41	-0.07	-1.79	471.81	474.07	-0.08	-2.26	471.53	474.10	-0.10	-2.57
RP-41B	L	RP-41D†	L	445.4-239.6	205.80	471.39	480.32	-0.04	-8.93	471.57	482.25	-0.05	-10.68	472.41	479.97	-0.04	-7.56	474.07	479.56	-0.03	-5.49	474.10	479.67	-0.03	-5.57
RP-41A	U	RP-41D†	L	472-239.6	232.40	471.39	480.32	-0.04	-8.93	471.23	482.25	-0.05	-11.02	470.62	479.97	-0.04	-9.35	471.81	479.56	-0.03	-7.75	471.53	479.67	-0.04	-8.14
RGPZ-2B†	L	RGPZ-2C†	L	704-621.6	82.40	713.83	667.03	0.57	46.80	NE	669.34	NC	NC	NE	672.43	NC	NC	NE	673.19	NC	NC	NE	673.32	NC	NC
RGPZ-2C†	L	RGPZ-2D†	L	621.6-536.2	85.40	667.03	604.27	0.73	62.76	669.34	NE	NC	NC	672.43	NE	NC	NC	673.19	NE	NC	NC	673.32	NE	NC	NC
RGPZ-2B†	L	RGPZ-2D	L	704-536.2	167.80	713.38	604.27	0.65	109.11	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-11B†	L	RGPZ-11C†	L	610.6-533.7	76.90	627.75	619.30	0.11	8.45	622.17	NE	NC	NC	618.84	NE	NC	NC	618.24	NE	NC	NC	617.95	NE	NC	NC
RGPZ-11C†	L	RGPZ-11D	L	533.7-467.7	66.00	619.30	614.45	0.07	4.85	NE	618.52	NC	NC	NE	618.72	NC	NC	NE	618.57	NC	NC	NE	618.62	NC	NC
RGPZ-11B†	L	RGPZ-11D	L	610.6-467.7	142.90	627.75	614.45	0.09	13.30	622.17	618.52	0.03	3.65	618.84	618.72	0.00	0.12	618.24	618.57	0.00	-0.33	617.95	618.62	0.00	-0.67
RGPZ-12C†	L	RGPZ-12D†	L	507.5-416	91.50	619.07	585.13	0.37	33.94	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-13C†	L	RGPZ-13D†	L	501.7-444.2	57.50	589.15	562.82	0.46	26.33	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
Median Vertical Head Difference: North-Drainage (excluding RP-70D):					**76.90**				**8.45**				**3.65**				**0.12**				**-0.33**				**-0.67**
Recharge Areas																									
RP-16C	L	RP-16D†	L	544.1-473.4	70.70	NE	NE	NC	NC	713.06	612.68	1.42	100.38	711.95	610.10	1.44	101.85	712.16	611.06	1.43	101.10	712.43	611.48	1.43	100.95
RP-63C	L	RP-63D	L	606-515.6	90.40	629.15	603.34	0.29	25.81	630.47	511.80	1.31	118.67	629.63	603.04	0.29	26.59	627.01	603.00	0.27	24.01	628.80	603.17	0.28	25.63
RP-33C†	L	RP-33D	L	412.1-361	51.10	NE	428.47	NC	NC	ND	428.74	NC	NC	ND	428.08	NC	NC	ND	426.67	NC	NC	ND	428.32	NC	NC
Median Vertical Head Difference: Recharge Areas:					**70.70**				**25.81**				**109.53**				**64.22**				**62.56**				**63.29**
Interior Zone 1																									
LCW-3	U	RP-96C-2	L	515.9-472.1	43.80	489.50	Dry	NC	NC	490.33	Dry	NC	NC	489.72	Dry	NC	NC	485.13	Dry	NC	NC	489.24	Dry	NC	NC
RG-10B	U	RP-29D	L	652.34-502	150.34	601.34	582.84	NC	NC	601.71	581.37	0.14	20.34	594.31	581.73	0.08	12.58	593.98	581.27	0.00	12.71	598.63	582.68	0.11	15.95
RG-1B	U	RG-1C†	L	420.21-363.28	56.93	428.51	436.81	-0.15	-8.30	428.78	436.91	-0.14	-8.13	428.38	436.42	-0.14	-8.04	425.23	425.46	0.00	-0.23	425.36	435.34	-0.18	-9.98
RG-4B	U	RGPZ-4C	L	563.27-490.42	72.85	559.09	554.13	0.07	4.96	552.84	557.80	-0.07	-4.96	552.04	554.38	-0.03	-2.34	552.19	554.30	-0.03	-2.11	551.40	554.34	-0.04	-2.94
RG-9B†	U	RP-95D	L	503.06-261.7	241.36	506.73	518.78	NC	NC	508.80	519.08	-0.04	-10.28	508.24	518.25	-0.04	-10.01	506.40	517.63	-0.05	-11.23	506.73	Dry	NC	NC
WP-3S	L	WP-3D†	L	509.58-424.91	84.67	500.98	427.39	NC	NC	504.88	NE	NC	NC	504.85	NE	NC	NC	502.71	517.63	-0.18	-14.92	504.20	NE	NC	NC
RP-14B	U	RP-14D	L	526-379	147.00	528.45	516.53	0.08	11.92	530.47	517.38	0.09	13.09	526.18	517.88	0.06	8.30	502.71	NE	NC	NC	526.75	517.73	0.06	9.02
RP-3C	L	RP-3D	L	509-454.5	54.50	542.05	532.95	NC	NC	542.10	534.06	0.15	8.04	539.89	533.50	0.12	6.39	540.08	532.80	0.13	7.28	Dry	Dry	NC	NC
RP-2B†	U	RP-2C	L	620-478	142.00	628.58	592.70	0.25	35.88	626.61	591.34	0.25	35.27	620.15	591.44	0.20	28.71	620.39	591.55	0.20	28.84	619.72	591.50	0.20	28.22
RP-2C	L	RP-2D	L	478-414.5	63.50	592.70	NE	NC	NC	591.34	543.15	0.76	48.19	591.44	543.46	0.76	47.98	591.55	544.03	0.75	47.52	591.50	544.22	0.74	47.28
RP-3B	U	RP-3D†	L	532-454.5	77.50	535.79	532.95	0.04	2.84	535.44	534.06	0.02	1.38	535.13	533.50	0.02	1.63	535.63	532.80	0.04	2.83	535.19	Dry	NC	NC
RP-3B	U	RP-3C	L	532-509	23.00	535.79	542.05	NC	NC	535.44	542.10	-0.29	-6.66	535.13	539.89	-0.21	-4.76	535.63	540.08	-0.19	-4.45	535.19	Dry	NC	NC
RP-55C	L	RP-55C-2	L	452-435	17.00	NE	508.37	NC	NC	504.99	508.37	-0.20	-3.38	505.19	508.58	-0.20	-3.39	505.14	507.95	-0.17	-2.81	505.34	508.41	-0.18	-3.07
PZ-P18-2A†	U	PZ-P18-2B†	U	459.2-447.2	12.00	454.75	Dry	NC	NC	454.75	443.75	0.92	11.00	454.80	440.94	1.16	13.86	454.75	441.77	1.08	12.98	454.75	Dry	NC	NC
PZ-PA5-2A†	U	PZ-PA5-2C	U	455.49-433.03	22.46	440.54	443.22	-0.12	-2.68	448.12	442.97	0.23	5.15	448.12	441.22	0.31	6.90	448.11	440.07	0.36	8.04	448.07	441.80	0.28	6.27
PZ-PA5-3A	U	PZ-PA5-3C	U	455.82-433.36	22.46	Dry	442.56	NC	NC	448.28	444.05	0.19	4.23	448.12	442.83	0.24	5.29	Dry	442.05	NC	NC	Dry	443.53	NC	NC
RGPZ-3C†	L	RGPZ-3D†	L	464.2-430.4	33.80	482.12	553.94	-2.12	-71.82	NE	554.14	NC	NC	NE	554.19	NC	NC	NE	554.06	NC	NC	553.67	554.14	-0.01	-0.47
RGPZ-6B	L	RGPZ-6C	L	446.4-377.7	68.70	459.77	460.69	-0.01	-0.92	463.50	458.95	0.07	4.55	461.65	457.61	0.06	4.04	461.75	457.71	0.06	4.04	461.83	460.00	0.03	1.83
RGPZ-6C†	L	RGPZ-6D†	L	377.7-310.2	67.50	460.69	439.12	0.32	21.57	458.95	NE	NC	NC	457.61	461.68	-0.06	-4.07	457.71	462.07	-0.06	-4.36	460.00	462.24	-0.03	-2.24
RGPZ-6B	L	RGPZ-6D†	L	446.4-310.2	136.20	459.77	439.12	0.15	20.65	463.50	NE	NC	NC	461.65	461.68	0.00	-0.03	461.75	462.07	0.00	-0.32	461.83	462.24	0.00	-0.41
RGPZ-7C†	L	RGPZ-7D†	L	369.6-322.6	47.00	457.23	459.78	-0.05	-2.55	385.80	332.48	1.13	53.32	456.83	460.28	-0.07	-3.45	456.84	460.57	-0.08	-3.73	456.93	460.77	-0.08	-3.84
SW-15	U	RP-3D	L	538.2-454.5	83.70	552.69	532.95	NC	NC	554.62	534.06	0.25	20.56	544.71	533.50	0.13	11.21	544.64	532.80	0.14	11.84	Dry	Dry	NC	NC
WP-4S	U	WP-4D	L	400.42-325.42	75.00	416.06	404.87	0.15	11.19	415.71	405.99	0.13	9.72	416.67	404.66	0.16	12.01	416.23	404.64	0.15	11.59	417.72	405.20	0.17	12.52
Median Vertical Head Difference: Interior Zone 1:									**3.90**				**20.56**				**-0.03**				**-0.32**				**-1.33**

Total Lower Wells: 22 51

Total Upper Wells: 34 5

Notes:
NC = Head difference and vertical gradient not calculated due to non-equilibrium.
ND = No Data
ND* = Unreliable water level measurement
NE = Non-Equilibrium
† Wells that have historically or periodically exhibited non-equilibrium

Table F-4. Vertical Head Differences in Nested Wells

June 1997 through March 2009

Final Remedial Investitation Report

Casmalia Resources Superfund Site

Casmalia, California

						June 2006				September 2006				December 2006				March 2007				March 2007			
Primary Well and Site Area	Aquifer Unit	Secondary Well	Aquifer Unit	Elevation of Screened Zone Midpoints (ft MSL)	Midpoint Elevation Difference	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)
A-Drainage																									
MW-18C	U	MW-18D	L	421.9-181.8	240.10	NE	417.18	NC	NC	NE	416.27	NC	NC	NE	416.68	NC	NC	NE	35.45	NC	NC	NE	416.01	NC	NC
RP-100A	U	RP-101C	L	420.6-395.8	24.80	428.12	418.84	0.37	9.28	427.15	NE	NC	NC	425.62	418.34	0.29	7.28	428.61	418.29	0.42	10.32	423.82	418.17	0.23	5.65
RP-73A-2	U	RP-73D	L	343.1-236.4	106.70	361.65	361.67	0.00	-0.02	361.69	361.69	0.00	0.00	362.43	361.26	0.01	1.17	361.29	361.46	0.00	-0.17	361.49	361.64	0.00	-0.15
RP-73B	U	RP-73D	L	343.5-236.4	107.10	361.03	361.67	-0.01	-0.64	360.16	361.69	-0.01	-1.53	361.56	361.26	0.00	0.30	359.92	361.46	-0.01	-1.54	358.59	361.64	-0.03	-3.05
RP-108A	U	RP-108B	U	340.4-327.1	13.30	343.53	344.26	-0.05	-0.73	342.80	343.76	-0.07	-0.96	341.66	343.40	-0.13	-1.74	341.81	342.70	-0.07	-0.89	340.11	341.52	-0.11	-1.41
Median Vertical Head Difference: A-Drainage:									**-0.33**				**-0.96**				**0.74**				**-0.53**				**-0.78**
B-Drainage																									
RP-6B	U	RP-6C†	L	357-297.4	59.60	367.23	304.28	1.06	62.95	367.52	304.37	1.06	63.15	366.35	303.77	1.05	62.58	365.37	303.68	1.04	61.69	365.13	303.40	1.04	61.73
RP-75A	U	RP-75B	U	324.1-295.6	28.50	334.42	327.08	0.26	7.34	334.59	NE	NC	NC	334.14	326.60	0.26	7.54	334.04	326.43	0.27	7.61	333.73	325.98	0.27	7.75
RP-75A	U	RP-75C	L	324.1-248	76.10	334.42	339.13	-0.06	-4.71	334.59	338.88	-0.06	-4.29	334.14	338.74	-0.06	-4.60	334.04	338.74	-0.06	-4.70	333.73	338.40	-0.06	-4.67
RP-75B	U	RP-75C	L	295.6-248	47.60	327.08	339.13	-0.25	-12.05	NE	338.88	NC	NC	326.60	338.74	-0.26	-12.14	326.43	338.74	-0.26	-12.31	325.98	338.40	-0.26	-12.42
Median Vertical Head Difference: B-Drainage:					**53.60**				**1.32**				**29.43**				**1.47**				**1.46**				**1.54**
C-Drainage																									
C2M	U	C2B	L	415.75-361	54.75	415.87	407.59	0.15	8.28	416.16	407.61	0.16	8.55	414.61	406.06	0.16	8.55	413.72	406.01	0.14	7.71	413.22	405.73	0.14	7.49
MW-3BU	U	MW-5BL	L	464.4-392.9	71.50	496.40	505.56	-0.13	-9.16	496.21	505.44	-0.13	-9.23	495.75	505.19	-0.13	-9.44	495.15	504.75	-0.13	-9.60	494.81	503.89	-0.13	-9.08
MW-4BU	L	MW-4BL	L	469-392.9	76.10	484.06	477.55	0.09	6.51	485.10	477.60	0.10	7.50	482.51	476.50	0.08	6.01	481.96	476.65	0.07	5.31	481.39	476.47	0.06	4.92
MW-7C	U	MW-7D	L	367.1-289.1	78.00	408.28	410.44	-0.03	-2.16	410.83	410.41	0.01	0.42	407.60	409.80	-0.03	-2.20	407.68	410.05	-0.03	-2.37	407.29	409.75	-0.03	-2.46
RP-13B	U	MW-6D	L	414-239	175.00	424.97	427.69	-0.02	-2.72	424.22	427.28	-0.02	-3.06	424.42	427.55	-0.02	-3.13	424.72	427.54	-0.02	-2.82	424.11	426.66	-0.01	-2.55
RP-100A	U	RP-24D	L	420.6-309	111.60	428.12	426.93	0.01	1.19	427.15	425.80	0.01	1.35	425.62	425.40	0.00	0.22	428.61	427.08	0.01	1.53	423.82	427.28	-0.03	-3.46
RP-72B	U	RP-72D†	L	329.2-239.9	89.30	362.51	357.21	0.06	5.30	362.46	357.00	0.06	5.46	361.56	356.81	0.05	4.75	23.85	25.60	-0.02	-1.75	361.63	357.51	0.05	4.12
RP-72A	U	RP-72D†	L	347.6-239.9	107.70	356.80	357.21	0.00	-0.41	356.90	357.00	0.00	-0.10	356.85	356.81	0.00	0.04	22.88	25.60	-0.03	-2.72	494.81	357.51	1.27	137.30
Median Vertical Head Difference: C-Drainage:									**-0.41**				**0.42**				**0.04**				**-2.37**				**-2.46**
North-Drainage																									
RP-109B	U	RP-109D†	L	423.9-308	115.90	453.20	452.55	0.01	0.65	453.25	452.51	0.01	0.74	453.06	452.59	0.00	0.47	452.70	452.10	0.01	0.60	452.10	451.73	0.00	0.37
RP-110B	U	RP-110D	L	420.2-329.5	90.70	439.95	440.01	0.00	-0.06	440.99	440.62	0.00	0.37	439.45	439.81	0.00	-0.36	439.87	439.96	0.00	-0.09	439.30	439.61	0.00	-0.31
RP-41A	U	RP-41B†	L	472-445.4	26.60	472.03	473.79	-0.07	-1.76	470.63	474.45	-0.14	-3.82	472.13	474.34	-0.08	-2.21	471.73	474.14	-0.09	-2.41	471.23	473.54	-0.09	-2.31
RP-41B	L	RP-41D†	L	445.4-239.6	205.80	473.79	479.99	-0.03	-6.20	474.45	479.27	-0.02	-4.82	474.34	479.07	-0.02	-4.73	474.14	479.09	-0.02	-4.95	473.54	478.92	-0.03	-5.38
RP-41A	U	RP-41D†	L	472-239.6	232.40	472.03	479.99	-0.03	-7.96	470.63	479.27	-0.04	-8.64	472.13	479.07	-0.03	-6.94	479.09	479.09	0.00	0.00	471.23	478.92	-0.03	-7.69
RGPZ-2B†	L	RGPZ-2C†	L	704-621.6	82.40	729.60	674.14	NC	NC	731.78	675.48	0.68	56.30	729.46	675.42	0.66	54.04	729.33	676.08	0.65	53.25	723.93	676.38	0.58	47.55
RGPZ-2C†	L	RGPZ-2D†	L	621.6-536.2	85.40	674.14	632.27	NC	NC	675.48	633.43	0.49	42.05	675.42	634.01	0.48	41.41	676.08	634.82	0.48	41.26	676.38	635.26	0.48	41.12
RGPZ-2B†	L	RGPZ-2D	L	704-536.2	167.80	729.60	632.27	NC	NC	731.78	633.43	0.59	98.35	729.46	634.01	0.57	95.45	729.33	634.82	0.56	94.51	723.93	635.26	0.53	88.67
RGPZ-11B†	L	RGPZ-11C†	L	610.6-533.7	76.90	617.55	NE	NC	NC	633.13	NE	NC	NC	617.35	NE	NC	NC	617.15	NE	NC	NC	616.40	NE	NC	NC
RGPZ-11C†	L	RGPZ-11D	L	533.7-467.7	66.00	NE	621.23	NC	NC	NE	618.37	NC	NC	NE	618.26	NC	NC	NE	618.32	NC	NC	NE	617.97	NC	NC
RGPZ-11B†	L	RGPZ-11D	L	610.6-467.7	142.90	617.55	621.23	-0.03	-3.68	633.13	618.37	0.10	14.76	617.35	618.26	-0.01	-0.91	617.15	618.32	-0.01	-1.17	616.40	617.97	-0.01	-1.57
RGPZ-12C†	L	RGPZ-12D†	L	507.5-416	91.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NC	NC	NC	NC	NE	NE	NC	NC
RGPZ-13C†	L	RGPZ-13D†	L	501.7-444.2	57.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NC	NC	NC	NC	NE	NE	NC	NC
Median Vertical Head Difference: North-Drainage (excluding RP-70D):					**76.90**				**-3.68**				**14.76**				**-0.91**				**-1.17**				**-1.57**
Recharge Areas																									
RP-16C	L	RP-16D†	L	544.1-473.4	70.70	ND	ND	NC	NC	ND	ND	NC	NC	710.48	611.66	1.40	98.82	710.01	611.66	1.39	98.35	702.63	611.48	1.29	91.15
RP-63C	L	RP-63D	L	606-515.6	90.40	629.39	603.37	0.29	26.02	629.41	603.17	0.29	26.24	627.63	602.76	0.28	24.87	627.46	602.84	0.27	24.62	626.78	602.64	0.27	24.14
RP-33C†	L	RP-33D	L	412.1-361	51.10	ND	428.66	NC	NC	ND	428.13	NC	NC	ND	428.28	NC	NC	ND	428.27	NC	NC	NC	427.82	NC	NC
Median Vertical Head Difference: Recharge Areas:					**70.70**				**26.02**				**26.24**				**61.85**				**61.49**				**57.65**
Interior Zone 1																									
LCW-3	U	RP-96C-2	L	515.9-472.1	43.80	490.24	Dry	NC	NC	491.16	Dry	NC	NC	489.54	Dry	NC	NC	519.58	Dry	NC	NC	489.20	Dry	NC	NC
RG-10B	U	RP-29D	L	652.34-502	150.34	597.54	583.13	0.10	14.41	596.66	583.53	0.09	13.13	594.19	581.97	0.08	12.22	596.45	581.88	0.10	14.57	594.09	581.63	0.08	12.46
RG-1B	U	RG-1C†	L	420.21-363.28	56.93	428.58	437.07	-0.15	-8.49	427.56	436.44	-0.16	-8.88	425.08	432.30	-0.13	-7.22	425.63	431.44	-0.10	-5.81	423.48	429.81	-0.11	-6.33
RG-4B	U	RGPZ-4C	L	563.27-490.42	72.85	552.38	554.18	-0.02	-1.80	552.19	554.07	-0.03	-1.88	552.15	553.90	-0.02	-1.75	552.31	553.88	-0.02	-1.57	552.14	553.49	-0.02	-1.35
RG-9B†	U	RP-95D	L	503.06-261.7	241.36	507.12	515.38	-0.03	-8.26	506.84	514.83	-0.03	-7.99	506.08	Dry	NC	NC	504.70	Dry	NC	NC	504.50	0.00	2.09	504.50
WP-3S	L	WP-3D†	L	509.58-424.91	84.67	505.05	NE	NC	NC	504.67	NE	NC	NC	503.35	NE	NC	NC	503.70	NE	NC	NC	504.21	NE	NC	NC
RP-14B	U	RP-14D	L	526-379	147.00	526.80	517.99	0.06	8.81	526.05	517.03	0.06	9.02	525.25	516.63	0.06	8.62	524.75	516.43	0.06	8.32	524.75	515.53	0.06	9.22
RP-3C	L	RP-3D	L	509-454.5	54.50	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC
RP-2B†	U	RP-2C	L	620-478	142.00	620.86	591.44	0.21	29.42	618.88	591.34	0.19	27.54	617.76	591.39	0.19	26.37	617.41	591.38	0.18	26.03	617.56	591.53	0.18	26.03
RP-2C	L	RP-2D	L	478-414.5	63.50	591.44	543.59	0.75	47.85	591.34	ND	NC	NC	591.39	544.09	0.74	47.30	591.38	544.41	0.74	46.97	591.53	544.34	0.74	47.19
RP-3B	U	RP-3D†	L	532-454.5	77.50	535.53	Dry	NC	NC	535.33	Dry	NC	NC	535.03	Dry	NC	NC	534.98	Dry	NC	NC	534.85	Dry	NC	NC
RP-3B	U	RP-3C	L	532-509	23.00	535.53	Dry	NC	NC	535.33	Dry	NC	NC	535.03	Dry	NC	NC	534.98	Dry	NC	NC	534.85	Dry	NC	NC
RP-55C	L	RP-55C-2	L	452-435	17.00	505.19	508.37	-0.19	-3.18	NE	508.37	NC	NC	504.94	508.28	-0.20	-3.34	56.88	54.67	0.13	2.21	504.79	508.67	-0.23	-3.88
PZ-P18-2A†	U	PZ-P18-2B†	U	459.2-447.2	12.00	454.75	Dry	NC	NC	454.75	Dry	NC	NC	454.75	Dry	NC	NC	454.70	Dry	NC	NC	454.75	Dry	NC	NC
PZ-PA5-2A†	U	PZ-PA5-2C	U	455.49-433.03	22.46	448.17	442.92	0.23	5.25	448.21	442.02	0.28	6.19	448.17	441.16	0.31	7.01	448.12	441.42	0.30	6.70	448.22	440.27	0.35	7.95
PZ-PA5-3A	U	PZ-PA5-3C	U	455.82-433.36	22.46	Dry	444.26	NC	NC	Dry	444.98	NC	NC	Dry	444.58	NC	NC	Dry	444.78	NC	NC	Dry	443.78	NC	NC
RGPZ-3C†	L	RGPZ-3D†	L	464.2-430.4	33.80	554.16	553.99	0.01	0.17	553.96	553.83	0.00	0.13	553.62	553.65	0.00	-0.03	553.67	553.64	0.00	0.03	553.55	553.29	0.01	0.26
RGPZ-6B	L	RGPZ-6C	L	446.4-377.7	68.70	462.31	460.88	0.02	1.43	460.95	457.60	0.05	3.35	460.47	463.18	-0.04	-2.71	460.10	458.70	0.02	1.40	458.46	458.45	0.00	0.01
RGPZ-6C†	L	RGPZ-6D†	L	377.7-310.2	67.50	460.88	462.27	-0.02	-1.39	457.60	462.37	-0.07	-4.77	463.18	463.18	0.00	0.00	458.70	462.49	-0.06	-3.79	458.45	462.13	-0.05	-3.68
RGPZ-6B	L	RGPZ-6D†	L	446.4-310.2	136.20	462.31	462.27	0.00	0.04	460.95	462.37	-0.01	-1.42	460.47	463.18	-0.02	-2.71	460.10	462.49	-0.02	-2.39	458.46	462.13	-0.03	-3.67
RGPZ-7C†	L	RGPZ-7D†	L	369.6-322.6	47.00	457.70	458.88	-0.03	-1.18	456.48	458.68	-0.05	-2.20	458.01	458.68	-0.01	-0.67	458.45	458.35	0.00	0.10	388.02	332.19	1.19	55.83
SW-15	U	RP-3D	L	538.2-454.5	83.70	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC
WP-4S	U	WP-4D	L	400.42-325.42	75.00	418.31	405.30	0.17	13.01	417.41	405.08	0.16	12.33	416.87	404.89	0.16	11.98	417.02	405.05	0.16	11.97	415.82	405.34	0.14	10.48
Median Vertical Head Difference: Interior Zone 1:									**-0.57**				**-1.81**				**-0.34**				**-1.15**				**3.41**

Total Lower Wells: 22 51

Total Upper Wells: 34 5

Notes:
NC = Head difference and vertical gradient not calculated due to non-equilibrium.
ND = No Data
ND* = Unreliable water level measurement
NE = Non-Equilibrium
† Wells that have historically or periodically exhibited non-equilibrium

Table F-4. Vertical Head Differences in Nested Wells

June 1997 through March 2009

Final Remedial Investitation Report

Casmalia Resources Superfund Site

Casmalia, California

						September 2007				December 2007				March 2008				June 2008				September 2008			
Primary Well and Site Area	Aquifer Unit	Secondary Well	Aquifer Unit	Elevation of Screened Zone Midpoints (ft MSL)	Midpoint Elevation Difference	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)
A-Drainage																									
MW-18C	U	MW-18D	L	421.9-181.8	240.10	NE	416.36	NC	NC	NE	416.18	NC	NC	NE	416.48	NC	NC	NE	416.37	NC	NC	NE	416.18	NC	NC
RP-100A	U	RP-101C	L	420.6-395.8	24.80	423.81	NE	NC	NC	419.59	417.84	0.07	1.75	428.01	418.34	0.39	9.67	426.61	418.54	0.33	8.07	425.41	418.49	0.28	6.92
RP-73A-2	U	RP-73D	L	343.1-236.4	106.70	361.09	361.64	-0.01	-0.55	360.59	360.81	0.00	-0.22	362.09	361.84	0.00	0.25	359.79	361.70	-0.02	-1.91	357.94	358.94	-0.01	-1.00
RP-73B	U	RP-73D	L	343.5-236.4	107.10	359.48	361.64	-0.02	-2.16	359.72	360.81	-0.01	-1.09	361.92	361.84	0.00	0.08	361.01	361.70	-0.01	-0.69	359.52	358.94	0.01	0.58
RP-108A	U	RP-108B	U	340.4-327.1	13.30	Dry	340.70	NC	NC	Dry	416.18	NC	NC	344.26	346.40	-0.16	-2.14	341.71	343.40	-0.13	-1.69	339.21	340.90	-0.13	-1.69
Median Vertical Head Difference: A-Drainage:									**-1.35**				**-0.22**				**0.17**				**-1.19**				**-0.21**
B-Drainage																									
RP-6B	U	RP-6C†	L	357-297.4	59.60	363.07	303.45	1.00	59.62	362.57	303.31	0.99	59.26	364.13	303.36	1.02	60.77	364.34	303.13	1.03	61.21	370.07	304.28	1.10	65.79
RP-75A	U	RP-75B	U	324.1-295.6	28.50	333.64	NE	NC	NC	333.64	325.33	0.29	8.31	337.74	326.38	0.40	11.36	333.58	326.18	0.26	7.40	333.74	325.83	0.28	7.91
RP-75A	U	RP-75C	L	324.1-248	76.10	333.64	338.34	-0.06	-4.70	333.64	338.34	-0.06	-4.70	337.74	338.84	-0.01	-1.10	333.58	338.79	-0.07	-5.21	333.74	338.85	-0.07	-5.11
RP-75B	U	RP-75C	L	295.6-248	47.60	NE	338.34	NC	NC	325.33	338.34	-0.27	-13.01	326.38	338.84	-0.26	-12.46	326.18	338.79	-0.26	-12.61	325.83	338.85	-0.27	-13.02
Median Vertical Head Difference: B-Drainage:					**53.60**				**27.46**				**1.81**				**5.13**				**1.09**				**1.40**
C-Drainage																									
C2M	U	C2B	L	415.75-361	54.75	413.21	405.87	0.13	7.34	413.13	405.48	0.14	7.65	417.75	411.20	0.12	6.55	417.88	410.98	0.13	6.90	414.33	409.95	0.08	4.38
MW-3BU	U	MW-5BL	L	464.4-392.9	71.50	494.41	503.64	-0.13	-9.23	494.00	503.29	-0.13	-9.29	494.75	503.99	-0.13	-9.24	494.85	504.34	-0.13	-9.49	494.45	504.15	-0.14	-9.70
MW-4BU	L	MW-4BL	L	469-392.9	76.10	481.41	476.00	0.07	5.41	481.00	474.85	0.08	6.15	483.96	476.09	0.10	7.87	483.88	476.50	0.10	7.38	482.16	476.04	0.08	6.12
MW-7C	U	MW-7D	L	367.1-289.1	78.00	407.40	409.48	-0.03	-2.08	406.99	409.26	-0.03	-2.27	407.40	409.55	-0.03	-2.15	407.65	409.49	-0.02	-1.84	407.45	409.26	-0.02	-1.81
RP-13B	U	MW-6D	L	414-239	175.00	423.67	427.41	-0.02	-3.74	423.52	427.31	-0.02	-3.79	424.87	427.43	-0.01	-2.56	424.75	429.10	-0.02	-4.35	424.22	427.31	-0.02	-3.09
RP-100A	U	RP-24D	L	420.6-309	111.60	423.81	426.84	-0.03	-3.03	423.36	425.63	-0.02	-2.27	428.01	426.93	0.01	1.08	426.61	426.61	0.00	0.00	425.41	426.45	-0.01	-1.04
RP-72B	U	RP-72D†	L	329.2-239.9	89.30	361.21	356.46	0.05	4.75	361.01	356.31	0.05	4.70	363.31	357.76	0.06	5.55	361.66	356.80	0.05	4.86	361.60	356.56	0.06	5.04
RP-72A	U	RP-72D†	L	347.6-239.9	107.70	356.90	356.46	0.00	0.44	356.95	356.31	0.01	0.64	357.15	357.76	-0.01	-0.61	356.80	356.80	0.00	0.00	356.67	356.56	0.00	0.11
Median Vertical Head Difference: C-Drainage:									**-2.08**				**-2.27**				**-0.61**				**0.00**				**-1.04**
North-Drainage																									
RP-109B	U	RP-109D†	L	423.9-308	115.90	452.31	452.09	0.00	0.22	451.15	450.46	0.01	0.69	452.00	451.54	0.00	0.46	452.45	451.78	0.01	0.67	451.75	451.50	0.00	0.25
RP-110B	U	RP-110D	L	420.2-329.5	90.70	439.50	439.94	0.00	-0.44	438.50	439.01	-0.01	-0.51	439.75	439.45	0.00	0.30	439.01	439.31	0.00	-0.30	438.32	438.91	-0.01	-0.59
RP-41A	U	RP-41B†	L	472-445.4	26.60	470.78	473.29	-0.09	-2.51	Dry	472.44	NC	NC	470.31	475.39	-0.19	-5.08	470.90	479.24	-0.31	-8.34	472.63	473.74	-0.04	-1.11
RP-41B	L	RP-41D†	L	445.4-239.6	205.80	473.29	478.82	-0.03	-5.53	472.44	478.67	-0.03	-6.23	475.39	479.17	-0.02	-3.78	479.24	478.82	0.00	0.42	473.74	478.65	-0.02	-4.91
RP-41A	U	RP-41D†	L	472-239.6	232.40	470.78	478.82	-0.03	-8.04	Dry	478.67	NC	NC	470.31	479.17	-0.04	-8.86	470.90	478.82	-0.03	-7.92	472.63	478.65	-0.03	-6.02
RGPZ-2B†	L	RGPZ-2C†	L	704-621.6	82.40	728.94	675.98	0.64	52.96	730.68	676.73	0.65	53.95	740.38	675.98	0.78	64.40	733.18	676.48	0.69	56.70	730.70	676.95	0.65	53.75
RGPZ-2C†	L	RGPZ-2D†	L	621.6-536.2	85.40	675.98	633.30	0.50	42.68	676.73	635.97	0.48	40.76	675.98	636.77	0.46	39.21	676.48	635.77	0.48	40.71	676.95	636.22	0.48	40.73
RGPZ-2B†	L	RGPZ-2D	L	704-536.2	167.80	452.31	633.30	-1.08	-180.99	730.68	635.97	0.56	94.71	740.38	636.77	0.62	103.61	733.18	635.77	0.58	97.41	730.70	636.22	0.56	94.48
RGPZ-11B†	L	RGPZ-11C†	L	610.6-533.7	76.90	617.02	NE	NC	NC	615.75	NE	NC	NC	615.75	NE	NC	NC	615.40	NE	NC	NC	615.25	NE	NC	NC
RGPZ-11C†	L	RGPZ-11D	L	533.7-467.7	66.00	NE	617.59	NC	NC	NE	617.57	NC	NC	NE	621.13	NC	NC	NE	621.00	NC	NC	NE	617.22	NC	NC
RGPZ-11B†	L	RGPZ-11D	L	610.6-467.7	142.90	617.02	617.59	0.00	-0.57	615.75	617.57	-0.01	-1.82	615.75	621.13	-0.04	-5.38	615.40	621.00	-0.04	-5.60	615.25	617.22	-0.01	-1.97
RGPZ-12C†	L	RGPZ-12D†	L	507.5-416	91.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-13C†	L	RGPZ-13D†	L	501.7-444.2	57.50	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC	NE	NE	NC	NC
Median Vertical Head Difference: North-Drainage (excluding RP-70D):					**76.90**				**-0.57**				**-1.82**				**-5.38**				**-5.60**				**-1.97**
Recharge Areas																									
RP-16C	L	RP-16D†	L	544.1-473.4	70.70	709.58	611.06	1.39	98.52	707.64	611.36	1.36	96.28	707.90	611.90	1.36	96.00	707.16	611.54	1.35	95.62	706.74	611.24	1.35	95.50
RP-63C	L	RP-63D	L	606-515.6	90.40	627.13	602.54	0.27	24.59	626.88	602.34	0.27	24.54	630.33	602.60	0.31	27.73	629.87	602.00	0.31	27.87	627.90	602.19	0.28	25.71
RP-33C†	L	RP-33D	L	412.1-361	51.10	ND	428.18	NC	NC	ND	427.86	NC	NC	427.57	427.67	0.00	-0.10	427.45	426.87	0.01	0.58	427.28	426.07	0.02	1.21
Median Vertical Head Difference: Recharge Areas:					**70.70**				**61.56**				**60.41**				**27.73**				**27.87**				**25.71**
Interior Zone 1																									
LCW-3	U	RP-96C-2	L	515.9-472.1	43.80	489.06	Dry	NC	NC	488.95	Dry	NC	NC	490.95	Dry	NC	NC	490.84	Dry	NC	NC	489.30	Dry	NC	NC
RG-10B	U	RP-29D	L	652.34-502	150.34	596.15	581.59	0.10	14.56	595.55	581.34	0.09	14.21	596.44	583.88	0.08	12.56	596.10	583.24	0.09	12.86	593.92	582.14	0.08	11.78
RG-1B	U	RG-1C†	L	420.21-363.28	56.93	422.38	428.66	-0.11	-6.28	421.78	428.06	-0.11	-6.28	429.08	439.16	-0.18	-10.08	429.02	437.81	-0.15	-8.79	425.99	432.57	-0.12	-6.58
RG-4B	U	RGPZ-4C	L	563.27-490.42	72.85	552.09	553.23	-0.02	-1.14	551.89	553.10	-0.02	-1.21	556.39	553.38	0.04	3.01	552.24	553.17	-0.01	-0.93	552.09	552.99	-0.01	-0.90
RG-9B†	U	RP-95D	L	503.06-261.7	241.36	504.17	Dry	NC	NC	504.10	Dry	NC	NC	506.30	Dry	NC	NC	506.65	Dry	NC	NC	506.13	507.46	-0.01	-1.33
WP-3S	L	WP-3D†	L	509.58-424.91	84.67	503.20	NE	NC	NC	503.06	NE	NC	NC	505.35	NE	NC	NC	504.80	NE	NC	NC	503.43	NE	NC	NC
RP-14B	U	RP-14D	L	526-379	147.00	524.55	514.81	0.07	9.74	523.48	515.08	0.06	8.40	528.35	519.33	0.06	9.02	527.73	519.60	0.06	8.13	524.67	514.41	0.07	10.26
RP-3C	L	RP-3D	L	509-454.5	54.50	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC
RP-2B†	U	RP-2C	L	620-478	142.00	617.11	590.94	0.18	26.17	617.61	590.64	0.19	26.97	620.26	590.29	0.21	29.97	618.06	589.94	0.20	28.12	617.46	589.84	0.19	27.62
RP-2C	L	RP-2D	L	478-414.5	63.50	590.94	544.34	0.73	46.60	617.61	544.53	1.15	73.08	590.29	544.66	0.72	45.63	589.94	544.35	0.72	45.59	589.84	544.35	0.72	45.49
RP-3B	U	RP-3D†	L	532-454.5	77.50	534.83	Dry	NC	NC	534.63	Dry	NC	NC	534.65	Dry	NC	NC	555.23	Dry	NC	NC	534.88	531.11	0.05	3.77
RP-3B	U	RP-3C	L	532-509	23.00	534.83	Dry	NC	NC	534.63	Dry	NC	NC	534.65	Dry	NC	NC	555.23	Dry	NC	NC	534.88	Dry	NC	NC
RP-55C	L	RP-55C-2	L	452-435	17.00	NE	508.07	NC	NC	504.64	507.85	-0.19	-3.21	504.65	507.97	-0.20	-3.32	504.34	507.84	-0.21	-3.50	504.44	507.84	-0.20	-3.40
PZ-P18-2A†	U	PZ-P18-2B†	U	459.2-447.2	12.00	454.75	Dry	NC	NC	454.76	Dry	NC	NC	455.78	Dry	NC	NC	455.85	Dry	NC	NC	454.65	441.56	1.09	13.09
PZ-PA5-2A†	U	PZ-PA5-2C	U	455.49-433.03	22.46	448.07	439.07	0.40	9.00	448.13	438.37	0.43	9.76	448.69	440.71	0.36	7.98	Dry	440.71	NC	NC	447.99	439.15	0.39	8.84
PZ-PA5-3A	U	PZ-PA5-3C	U	455.82-433.36	22.46	Dry	442.62	NC	NC	Dry	441.88	NC	NC	Dry	442.24	NC	NC	Dry	443.98	NC	NC	Dry	442.75	NC	NC
RGPZ-3C†	L	RGPZ-3D†	L	464.2-430.4	33.80	553.32	553.04	0.01	0.28	553.12	552.84	0.01	0.28	553.37	553.43	0.00	-0.06	546.17	552.84	-0.20	-6.67	552.82	552.65	0.01	0.17
RGPZ-6B	L	RGPZ-6C	L	446.4-377.7	68.70	457.85	458.30	-0.01	-0.45	457.39	458.04	-0.01	-0.65	462.90	462.67	0.00	0.23	459.74	460.55	-0.01	-0.81	458.80	459.65	-0.01	-0.85
RGPZ-6C†	L	RGPZ-6D†	L	377.7-310.2	67.50	458.30	461.97	-0.05	-3.67	458.04	461.75	-0.05	-3.71	462.67	464.01	-0.02	-1.34	460.55	462.10	-0.02	-1.55	459.65	462.11	-0.04	-2.46
RGPZ-6B	L	RGPZ-6D†	L	446.4-310.2	136.20	457.85	461.97	-0.03	-4.12	457.39	461.75	-0.03	-4.36	462.90	464.01	-0.01	-1.11	459.74	462.10	-0.02	-2.36	458.80	462.11	-0.02	-3.31
RGPZ-7C†	L	RGPZ-7D†	L	369.6-322.6	47.00	458.03	457.85	0.00	0.18	387.98	332.20	1.19	55.78	458.09	458.22	0.00	-0.13	460.38	458.57	0.04	1.81	459.43	458.82	0.01	0.61
SW-15	U	RP-3D	L	538.2-454.5	83.70	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC	Dry	Dry	NC	NC
WP-4S	U	WP-4D	L	400.42-325.42	75.00	414.72	404.47	0.14	10.25	413.87	404.25	0.13	9.62	416.92	405.40	0.15	11.52	415.90	405.05	0.14	10.85	414.58	404.73	0.13	9.85
Median Vertical Head Difference: Interior Zone 1:									**-1.75**				**2.96**				**-0.62**				**0.13**				**-0.93**

Total Lower Wells: 22 51

Total Upper Wells: 34 5

Notes:
NC = Head difference and vertical gradient not calculated due to non-equilibrium.
ND = No Data
ND* = Unreliable water level measurement
NE = Non-Equilibrium
† Wells that have historically or periodically exhibited non-equilibrium

Table F-4. Vertical Head Differences in Nested Wells
June 1997 through March 2009
Final Remedial Investitation Report
Casmalia Resources Superfund Site
Casmalia, California

						December 2008				March 2008			
Primary Well and Site Area	Aquifer Unit	Secondary Well	Aquifer Unit	Elevation of Screened Zone Midpoints (ft MSL)	Midpoint Elevation Difference	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)	Higher Screen Water Elevation	Lower Screen Water Elevation	Vertical Gradient (positive downward)	Vertical Head Difference (positive downward)
A-Drainage													
MW-18C	U	MW-18D	L	421.9-181.8	240.10	NE	416.08	NC	NC	NE	416.18	NC	NC
RP-100A	U	RP-101C	L	420.6-395.8	24.80	424.46	418.29	0.25	6.17	424.06	418.24	0.23	5.82
RP-73A-2	U	RP-73D	L	343.1-236.4	106.70	356.09	357.43	-0.01	-1.34	354.19	361.52	-0.07	-7.33
RP-73B	U	RP-73D	L	343.5-236.4	107.10	359.18	357.43	0.02	1.75	353.52	361.52	-0.07	-8.00
RP-108A	U	RP-108B	U	340.4-327.1	13.30	338.39	339.10	-0.05	-0.71	Dry	339.40	NC	NC
Median Vertical Head Difference: A-Drainage:									**0.52**				**-7.33**
B-Drainage													
RP-6B	U	RP-6C†	L	357-297.4	59.60	370.42	302.90	1.13	67.52	374.47	302.76	1.20	71.71
RP-75A	U	RP-75B	U	324.1-295.6	28.50	333.79	325.58	0.29	8.21	334.14	325.91	0.29	8.23
RP-75A	U	RP-75C	L	324.1-248	76.10	333.79	338.44	-0.06	-4.65	334.14	338.34	-0.06	-4.20
RP-75B	U	RP-75C	L	295.6-248	47.60	325.58	338.44	-0.27	-12.86	325.91	338.34	-0.26	-12.43
Median Vertical Head Difference: B-Drainage:					**53.60**				**1.78**				**2.01**
C-Drainage													
C2M	U	C2B	L	415.75-361	54.75	414.81	409.13	0.10	5.68	413.22	409.21	0.07	4.01
MW-3BU	U	MW-5BL	L	464.4-392.9	71.50	494.00	503.94	-0.14	-9.94	493.85	503.44	-0.13	-9.59
MW-4BU	L	MW-4BL	L	469-392.9	76.10	NE	476.55	NC	NC	480.91	475.04	0.08	5.87
MW-7C	U	MW-7D	L	367.1-289.1	78.00	408.12	408.95	-0.01	-0.83	407.50	409.16	-0.02	-1.66
RP-13B	U	MW-6D	L	414-239	175.00	423.92	427.21	-0.02	-3.29	424.94	427.24	-0.01	-2.30
RP-100A	U	RP-24D	L	420.6-309	111.60	424.46	426.78	-0.02	-2.32	424.06	423.12	0.01	0.94
RP-72B	U	RP-72D†	L	329.2-239.9	89.30	361.65	356.61	0.06	5.04	361.16	357.69	0.04	3.47
RP-72A	U	RP-72D†	L	347.6-239.9	107.70	357.05	356.61	0.00	0.44	357.15	357.69	-0.01	-0.54
Median Vertical Head Difference: C-Drainage:									**-0.83**				**-0.54**
North-Drainage													
RP-109B	U	RP-109D†	L	423.9-308	115.90	451.15	449.74	0.01	1.41	451.80	451.95	0.00	-0.15
RP-110B	U	RP-110D	L	420.2-329.5	90.70	NE	437.55	NC	NC	438.45	438.87	0.00	-0.42
RP-41A	U	RP-41B†	L	472-445.4	26.60	471.12	473.61	-0.09	-2.49	471.13	473.94	-0.11	-2.81
RP-41B	L	RP-41D†	L	445.4-239.6	205.80	473.61	478.57	-0.02	-4.96	473.94	478.67	-0.02	-4.73
RP-41A	U	RP-41D†	L	472-239.6	232.40	471.12	478.57	-0.03	-7.45	471.13	478.67	-0.03	-7.54
RGPZ-2B†	L	RGPZ-2C†	L	704-621.6	82.40	729.94	677.08	0.64	52.86	728.76	678.14	0.61	50.62
RGPZ-2C†	L	RGPZ-2D†	L	621.6-536.2	85.40	677.08	634.12	0.50	42.96	678.14	637.27	0.48	40.87
RGPZ-2B†	L	RGPZ-2D	L	704-536.2	167.80	729.94	634.12	0.57	95.82	637.27	637.27	0.00	0.00
RGPZ-11B†	L	RGPZ-11C†	L	610.6-533.7	76.90	614.64	NE	NC	NC	614.75	NE	NC	NC
RGPZ-11C†	L	RGPZ-11D	L	533.7-467.7	66.00	NE	616.92	NC	NC	NE	616.97	NC	NC
RGPZ-11B†	L	RGPZ-11D	L	610.6-467.7	142.90	614.64	616.92	-0.02	-2.28	614.75	616.97	-0.02	-2.22
RGPZ-12C†	L	RGPZ-12D†	L	507.5-416	91.50	NE	NE	NC	NC	NE	NE	NC	NC
RGPZ-13C†	L	RGPZ-13D†	L	501.7-444.2	57.50	NE	NE	NC	NC	NE	NE	NC	NC
Median Vertical Head Difference: North-Drainage (excluding RP-70D):					**76.90**				**-2.28**				**-2.22**
Recharge Areas													
RP-16C	L	RP-16D†	L	544.1-473.4	70.70	706.84	611.42	1.35	95.42	706.16	605.35	1.43	100.81
RP-63C	L	RP-63D	L	606-515.6	90.40	625.68	601.03	0.27	24.65	627.33	602.29	0.28	25.04
RP-33C†	L	RP-33D	L	412.1-361	51.10	427.05	426.33	0.01	0.72	427.62	426.57	0.02	1.05
Median Vertical Head Difference: Recharge Areas:					**70.70**				**24.65**				**25.04**
Interior Zone 1													
LCW-3	U	RP-96C-2	L	515.9-472.1	43.80	489.50	Dry	NC	NC	488.49	Dry	NC	NC
RG-10B	U	RP-29D	L	652.34-502	150.34	593.89	582.20	0.08	11.69	597.44	583.28	0.09	14.16
RG-1B	U	RG-1C†	L	420.21-363.28	56.93	423.87	430.74	-0.12	-6.87	424.98	431.76	-0.12	-6.78
RG-4B	U	RGPZ-4C	L	563.27-490.42	72.85	552.22	553.12	-0.01	-0.90	552.34	552.74	-0.01	-0.40
RG-9B†	U	RP-95D	L	503.06-261.7	241.36	505.35	507.48	-0.01	-2.13	497.05	Dry	NC	NC
WP-3S	L	WP-3D†	L	509.58-424.91	84.67	502.85	NE	NC	NC	504.50	NE	NC	NC
RP-14B	U	RP-14D	L	526-379	147.00	523.78	514.50	0.06	9.28	524.75	514.38	0.07	10.37
RP-3C	L	RP-3D	L	509-454.5	54.50	Dry	NE	NC	NC	Dry	NE	NC	NC
RP-2B†	U	RP-2C	L	620-478	142.00	617.25	589.67	0.19	27.58	619.51	591.69	0.20	27.82
RP-2C	L	RP-2D	L	478-414.5	63.50	589.67	544.73	0.71	44.94	591.69	544.72	0.74	46.97
RP-3B	U	RP-3D†	L	532-454.5	77.50	534.91	NE	NC	NC	534.93	NE	NC	NC
RP-3B	U	RP-3C	L	532-509	23.00	534.91	Dry	NC	NC	534.93	Dry	NC	NC
RP-55C	L	RP-55C-2	L	452-435	17.00	504.49	508.00	-0.21	-3.51	524.50	507.92	0.98	16.58
PZ-P18-2A†	U	PZ-P18-2B†	U	459.2-447.2	12.00	454.79	Dry	NC	NC	454.70	441.74	1.08	12.96
PZ-PA5-2A†	U	PZ-PA5-2C	U	455.49-433.03	22.46	448.11	438.94	0.41	9.17	448.02	439.82	0.37	8.20
PZ-PA5-3A	U	PZ-PA5-3C	U	455.82-433.36	22.46	Dry	442.53	NC	NC	Dry	443.38	NC	NC
RGPZ-3C†	L	RGPZ-3D†	L	464.2-430.4	33.80	552.83	552.76	0.00	0.07	552.92	552.79	0.00	0.13
RGPZ-6B	L	RGPZ-6C	L	446.4-377.7	68.70	458.59	459.13	-0.01	-0.54	459.45	460.10	-0.01	-0.65
RGPZ-6C†	L	RGPZ-6D†	L	377.7-310.2	67.50	459.13	461.98	-0.04	-2.85	460.10	462.12	-0.03	-2.02
RGPZ-6B	L	RGPZ-6D†	L	446.4-310.2	136.20	458.59	461.98	-0.02	-3.39	459.45	462.12	-0.02	-2.67
RGPZ-7C†	L	RGPZ-7D†	L	369.6-322.6	47.00	459.05	459.01	0.00	0.04	462.73	460.31	0.05	2.42
SW-15	U	RP-3D	L	538.2-454.5	83.70	Dry	NE	NC	NC	Dry	NE	NC	NC
WP-4S	U	WP-4D	L	400.42-325.42	75.00	414.02	404.80	0.12	9.22	414.37	405.00	0.12	9.37
Median Vertical Head Difference: Interior Zone 1:									**-1.41**				**0.20**

Total Lower Wells: 22 51
Total Upper Wells: 34 5

Notes:
NC = Head difference and vertical gradient not calculated due to non-equilibrium.
ND = No Data
ND* = Unreliable water level measurement
NE = Non-Equilibrium
† Wells that have historically or periodically exhibited non-equilibrium

Checked: SC
Approved: WC