

Mojave Solar -Storm Channel Water Surface Profile

DOCKET 09-AEC-5
DATE _____
RECD. [APR 15 2010]

Attached is the Storm Channel Water Surface Profile for the proposed main storm water diversion channel.

The profile calcs were handed to Mr. Sameh Basta at San Bernardino County yesterday afternoon at about 4:00 PM by Mr. Mark Rowan of MJEI.

They reviewed the profile at the counter and a copy was left with Mr. Basta.

From

Kathleen L Sullivan, PE
Abengoa Solar Inc

WATER SURFACE PROFILE LISTING
Mojave Solar Project - Harper Dry Lake, San Bernardino County, California
Storm Water Drainage Channel A Surface Profile
100-Year Storm Event

Date: 4-14-2010 Time: 1:12:35

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd. El.	Super Elev	Critical Depth	Flow Top Width	Height/Di a. -FT	Base Wt or I. D.	ZL	No Wth Prs/Pip
L/El em	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fal l	ZR	Type Ch
1000.000	2021.000	3.830	2024.830	21232.00	6.11	.58	2025.41	.00	2.58	915.32	12.000	900.000	2.00	0 .0
TRANS STR	.0035							3.83	.55		.030	.00	2.00	TRAP
1664.000	2023.320	4.808	2028.128	21232.00	12.28	2.34	2030.47	.61	4.81	369.23	12.000	350.000	2.00	0 .0
4.021	.0035					.0073	.03	5.42	1.00	6.14	.030	.00	2.00	TRAP
1668.021	2023.334	5.037	2028.371	21232.00	11.71	2.13	2030.50	.56	4.81	370.15	12.000	350.000	2.00	0 .0
16.253	.0035					.0063	.10	5.60	.93	6.14	.030	.00	2.00	TRAP
1684.275	2023.391	5.275	2028.666	21232.00	11.16	1.93	2030.60	.51	4.81	371.10	12.000	350.000	2.00	0 .0
39.161	.0035					.0054	.21	5.78	.87	6.14	.030	.00	2.00	TRAP
1723.435	2023.528	5.525	2029.053	21232.00	10.64	1.76	2030.81	.46	4.81	372.10	12.000	350.000	2.00	0 .0
90.850	.0035					.0046	.42	5.99	.81	6.14	.030	.00	2.00	TRAP
1814.285	2023.845	5.787	2029.632	21232.00	10.15	1.60	2031.23	.42	4.81	373.15	12.000	350.000	2.00	0 .0
280.709	.0035					.0040	1.11	6.21	.76	6.14	.030	.00	2.00	TRAP
2094.995	2024.826	6.060	2030.886	21232.00	9.68	1.45	2032.34	.39	4.81	374.24	12.000	350.000	2.00	0 .0
474.765	.0035					.0036	1.70	6.45	.70	6.14	.030	.00	2.00	TRAP
2569.760	2026.485	6.134	2032.619	21232.00	9.55	1.42	2034.04	2.78	4.81	374.54	12.000	350.000	2.00	0 .0
332.218	.0035					.0035	1.16	8.91	.69	6.14	.030	.00	2.00	TRAP
2901.978	2027.645	6.137	2033.782	21232.00	9.55	1.42	2035.20	2.77	4.81	374.55	12.000	350.000	2.00	0 .0

HYDRAULIC JUMP
FILE: MSP.WSW

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Storm Water Drainage Channel A Surface Profile
100-Year Storm Event

Date: 4-14-2010 Time: 1:12:35

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd. El.	Super Elev	Critical Depth	Flow Top Width	Height/Di a. -FT	Base Wt or I. D.	ZL	No Wth Prs/Pip
L/El em	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fal l	ZR	Type Ch
2901.978	2027.645	3.684	2031.330	21232.00	16.13	4.04	2035.37	7.70	4.81	364.74	12.000	350.000	2.00	0 .0

MSP														
1.784	.0035				.0195	.03	11.38	1.50	6.14	.030	.00	2.00	TRAP	
2903.761	2027.652	3.663	2031.315	21232.00	16.22	4.09	2035.40	7.79	4.81	364.65	12.000	350.000	2.00	0 .0
13.559	.0035				.0213	.29	11.45	1.51	6.14	.030	.00	2.00	TRAP	
2917.320	2027.699	3.496	2031.195	21232.00	17.01	4.49	2035.69	.00	4.81	363.98	12.000	350.000	2.00	0 .0
TRANS STR	.0035				.0152	.88	3.50	1.62		.030	.00	2.00	TRAP	
2975.000	2027.900	6.133	2034.033	21232.00	13.72	2.92	2036.96	.00	6.13	264.53	12.000	240.000	2.00	0 .0
5.613	.0035				.0069	.04	6.13	1.00	7.67	.030	.00	2.00	TRAP	
2980.613	2027.920	6.418	2034.337	21232.00	13.08	2.66	2037.00	.00	6.13	265.67	12.000	240.000	2.00	0 .0
23.095	.0035				.0059	.14	6.42	.93	7.67	.030	.00	2.00	TRAP	
3003.708	2028.000	6.715	2034.715	21232.00	12.48	2.42	2037.13	.00	6.13	266.86	12.000	240.000	2.00	0 .0
57.410	.0035				.0051	.29	6.72	.87	7.67	.030	.00	2.00	TRAP	
3061.118	2028.200	7.026	2035.226	21232.00	11.90	2.20	2037.42	.00	6.13	268.10	12.000	240.000	2.00	0 .0
143.267	.0035				.0044	.62	7.03	.81	7.67	.030	.00	2.00	TRAP	
3204.385	2028.699	7.350	2036.049	21232.00	11.34	2.00	2038.05	.00	6.13	269.40	12.000	240.000	2.00	0 .0
550.337	.0035				.0038	2.06	7.35	.76	7.67	.030	.00	2.00	TRAP	
3754.722	2030.615	7.671	2038.286	21232.00	10.84	1.82	2040.11	.00	6.13	270.68	12.000	240.000	2.00	0 .0
354.467	.0035				.0035	1.23	7.67	.71	7.67	.030	.00	2.00	TRAP	

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 Program Package Serial Number: 1549
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WATER SURFACE PROFILE LISTING
 Mojave Solar Project - Harper Dry Lake, San Bernardino County, California
 Storm Water Drainage Channel A Surface Profile
 100-Year Storm Event

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd. El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia. -FT	Base Wt or I.D.	ZL	No Wth Prs/Pi p
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
4109.190	2031.850	7.671	2039.521	21232.00	10.84	1.82	2041.35	.00	6.13	270.68	12.000	240.000	2.00	0 .0
JUNCT STR	.0035					.0023	.29	7.67	.71		.030	.00	2.00	TRAP
4236.480	2032.298	8.812	2041.110	14788.00	6.51	.66	2041.77	.00	4.84	275.25	12.000	240.000	2.00	0 .0
135.943	.0035					.0011	.16	8.81	.40	6.18	.030	.00	2.00	TRAP
4372.423	2032.773	8.427	2041.200	14788.00	6.83	.72	2041.92	.00	4.84	273.71	12.000	240.000	2.00	0 .0
137.263	.0035					.0013	.18	8.43	.43	6.18	.030	.00	2.00	TRAP
4509.686	2033.252	8.058	2041.310	14788.00	7.17	.80	2042.11	.00	4.84	272.23	12.000	240.000	2.00	0 .0
140.991	.0035					.0015	.22	8.06	.46	6.18	.030	.00	2.00	TRAP
4650.676	2033.744	7.704	2041.448	14788.00	7.52	.88	2042.33	.00	4.84	270.82	12.000	240.000	2.00	0 .0

MSP

148.658	.0035					.0018	.27	7.70	.49	6.18	.030	.00	2.00	TRAP
4799.334	2034.263	7.365	2041.629	14788.00	7.88	.96	2042.59	.00	4.84	269.46	12.000	240.000	2.00	0 .0
163.623	.0035					.0021	.34	7.37	.53	6.18	.030	.00	2.00	TRAP
4962.957	2034.834	7.041	2041.875	14788.00	8.27	1.06	2042.94	.00	4.84	268.16	12.000	240.000	2.00	0 .0
194.960	.0035					.0024	.48	7.04	.56	6.18	.030	.00	2.00	TRAP
5157.917	2035.515	6.729	2042.245	14788.00	8.67	1.17	2043.41	.00	4.84	266.92	12.000	240.000	2.00	0 .0
278.578	.0035					.0028	.79	6.73	.60	6.18	.030	.00	2.00	TRAP
5436.495	2036.488	6.431	2042.919	14788.00	9.09	1.28	2044.20	.00	4.84	265.73	12.000	240.000	2.00	0 .0
635.416	.0035					.0033	2.08	6.43	.65	6.18	.030	.00	2.00	TRAP

FILE: MSP.WSW

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L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
6071.911	2038.706	6.182	2044.888	14788.00	9.48	1.40	2046.28	.00	4.84	264.73	12.000	240.000	2.00	0 .0
3510.352	.0035					.0035	12.26	6.18	.69	6.18	.030	.00	2.00	TRAP
9582.263	2050.963	6.182	2057.145	14788.00	9.48	1.40	2058.54	.00	4.84	264.73	12.000	240.000	2.00	0 .0
HYDRAULIC JUMP														
9582.263	2050.963	3.699	2054.662	14788.00	16.16	4.06	2058.72	.00	4.84	254.79	12.000	240.000	2.00	0 .0
4.239	.0035					.0200	.08	3.70	1.50	6.18	.030	.00	2.00	TRAP
9586.502	2050.978	3.648	2054.626	14788.00	16.39	4.17	2058.80	.00	4.84	254.59	12.000	240.000	2.00	0 .0
13.498	.0035					.0222	.30	3.65	1.53	6.18	.030	.00	2.00	TRAP
9600.000	2051.025	3.483	2054.508	14788.00	17.19	4.59	2059.10	.00	4.84	253.93	12.000	240.000	2.00	0 .0
TRANS STR														
9654.220	2051.214	3.615	2054.830	14788.00	17.04	4.51	2059.34	.00	4.90	240.00	12.000	240.000	.00	0 .0
44.791	.0085					.0039	.17	3.62	1.58	2.91	.013	.00	.00	RECTANG
9699.011	2051.597	3.769	2055.367	14788.00	16.35	4.15	2059.52	.00	4.90	240.00	12.000	240.000	.00	0 .0
37.299	.0085					.0034	.13	3.77	1.48	2.91	.013	.00	.00	RECTANG
9736.310	2051.916	3.953	2055.869	14788.00	15.59	3.77	2059.64	.00	4.90	240.00	12.000	240.000	.00	0 .0
26.448	.0085					.0029	.08	3.95	1.38	2.91	.013	.00	.00	RECTANG

9762.758 2052.142 4.146 2056.289 14788.00 14.86 3.43 2059.72 .00 MSP 4.90 240.00 12.000 240.000 .00 0 .0
 17.964 .0085 .0025 .04 4.15 1.29 2.91 .013 .00 .00 RECTANG
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L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
9780.722	2052.296	4.349	2056.645	14788.00	14.17	3.12	2059.76	.00	4.90	240.00	12.000	240.000	.00	0 .0
11.038	.0085					.0021	.02	4.35	1.20	2.91	.013	.00	.00	RECTANG
9791.760	2052.390	4.561	2056.951	14788.00	13.51	2.83	2059.78	.00	4.90	240.00	12.000	240.000	.00	0 .0
TRANS STR	.0076					.0091	.45	4.56	1.11		.030	.00	.00	RECTANG
9841.760	2052.770	5.114	2057.884	14788.00	12.56	2.45	2060.33	.00	5.11	240.46	12.000	220.000	2.00	0 .0
5.251	.0076					.0077	.04	5.11	1.00	5.16	.030	.00	2.00	TRAP
9847.011	2052.810	5.160	2057.970	14788.00	12.44	2.40	2060.37	.00	5.11	240.64	12.000	220.000	2.00	0 .0
5288.520	.0076					.0076	40.20	5.16	.99	5.16	.030	.00	2.00	TRAP
15135.530	2093.016	5.160	2098.177	14788.00	12.44	2.40	2100.58	.00	5.11	240.64	12.000	220.000	2.00	0 .0

Mojave Solar Project - Harper Dry Lake, San Bernardino County, California
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1000.00 .I CWE H . TX
 1174.51 .
 1349.03 .
 1523.54 .
 1698.05 . I WSE H . R

MSP

1872.56	.	I	WS	E	H	.	R	
2047.08	.	I	CW	E	H	.	R	
2221.59	.	I	CWSE		H	.	R	
2396.10	.	I	CW	E	H	.	R	
2570.61	.	I	CWSE		H	.	R	
2745.13	.	I	CW	E	S	H	.	R
2919.64	.	I	C	WE	S	H	.	R
3094.15	.	I	WC	E	SH	.	R	
3268.67	.	I	WC	E	SH	.	R	
3443.18	.	I	WC	E	H	.	TX	
3617.69	.	I	W	E	H	.	R	
3792.20	.	I	W	E	H	.	R	
3966.72	.	I	CW	E	H	.	R	
4141.23	.	I	CW	E	H	.	R	
4315.74	.	I	CW	E	H	.	R	
4490.25	.	I	C	WE	H	.	R	
4664.77	.	I	C	WE	H	.	JX	
4839.28	.	I	C	WE	H	.	R	
5013.79	.	I	C	W	H	.	R	
5188.31	.	I	C	WE	H	.	R	
5362.82	.	I	C	WE	H	.	R	

MSP

5537.33	.	I	C	WE	H	.	R
5711.84	.	I	C	WE	H	.	R
5886.36	.	I	C	WE	H	.	R
6060.87	.	I	C	WE	H	.	R
6235.38	.	I	C	WE	H	.	R
6409.89	.					.	
6584.41	.					.	
6758.92	.					.	
6933.43	.					.	
7107.95	.					.	
7282.46	.					.	
7456.97	.					.	
7631.48	.					.	
7806.00	.					.	
7980.51	.					.	
8155.02	.					.	
8329.53	.					.	
8504.05	.					.	
8678.56	.					.	
8853.07	.					.	
9027.58	.					.	

MSP

9202. 10	.				.
9376. 61	.				.
9551. 12	.				.
9725. 64	.	I	C WE	H	. R
9900. 15	.	I	WC E	H	. R
10074. 66	.	I	WC E	H	. R
10249. 17	.	I	W C E	H	. TX
10423. 69	.	I	WC E	H	. R
10598. 20	.	I	W C E	H	. R
10772. 71	.	I	WC E	H	. R
10947. 23	.	I	W E	H	. R
11121. 74	.	I	WC E	H	. R
11296. 25	.	I	WC E	H	. TX
11470. 76	.	I	W E	H	. R
11645. 28	.	I	CW E	H	. R
11819. 79	.				.
11994. 30	.				.
12168. 81	.				.
12343. 33	.				.
12517. 84	.				.
12692. 35	.				.

