ATTACHMENT C

Data and Results of Seismic Risk Modeling

PROJECT NAME : SOLID WASTE MANAGEMENT FOR METRO MANILA
LATITUDE : 14.71
LONGITUDE : 121.19

ZONE OF INFLUENCE FOR THE ANALYSIS : 300 km. 7.00 > Mag. > 4.50

DATE	LAT.	LONG.	RADIUS	M	AG	RANK	TR	P(%)
12 / 14 / 01	14.00	122.00	118.82	7.8	0.000	0	0.00	0.00
4 / 18 / 07	13.00	123.00	275.08	6.5	0.019	69	3.06	32.70
6 / 15 / 28	12.50	121.50	246.57	7	0.029	26	8.12	12.32
6 / 15 / 28	11.50	121.50	356.44	6.7	0.000	0	0.00	0.00
4 / 13 / 27	16.50	120.50	212.46	6.7	0.029	31	6.81	14.69
4 / 13 / 27	16.10	120.50	171.93	6.3	0.028	32	6.59	15.17
4 / 19 / 27	16.00	120.00	194.42	6.7	0.032	18	11.72	8.53
5 / 25 / 25	12.50	122.50	283.84	6.3	0.016	84	2.51	39.81
9 / 5 / 28	16.10	119.50	242.33	6.3	0.019	64	3.30	30.33
11 / 13 / 25	13.00	125.00	461.59	7.3	0.000	0	0.00	0.00
6 / 15 / 28	12.50	121.50	246.57	7	0.029	26	8.12	12.32
12 / 21 / 30	20.10	122.30	608.82	6.9	0.000	0	0.00	0.00
10 / 28 / 31	17.50	121.50	310.67	6.3	0.000	0	0.00	0.00
3 / 19 / 31	18.30	120.20	412.15	6.9	0.000	0	0.00	0.00
12 / 15 / 32	21.00	121.00	696.22	6	0.000	0	0.00	0.00
7 / 24 / 32	16.50	120.50	212.46	6.3	0.022	47	4.49	22.27
7 / 18 / 32	14.00	120.00	153.34	6	0.027	33	6.39	15.64
6 / 14 / 32	18.30	120.20	412.15	6.5	0.000	0	0.00	0.00
6 / 13 / 32	18.10	119.30	429.57	6.3	0.000	0	0.00	0.00
(Partial list of analyzed earthquake data)								
9 / 20 / 33	13.00	121.00	190.09	6.5	0.029	30	7.03	14.22
6 / 6 / 33	14.00	120.00	153.34	6.3	0.032	16	13.19	7.58
3 / 13 / 97	13.63	120.77	128.04	4.8	0.015	87	2.43	41.23
4 / 8 / 97	15.06	119.88	150.24	4.6	0.011	136	1.55	64.45
4 / 13 / 97	15.26	122.26	132.97	4.8	0.014	100	2.11	47.39
5 / 5 / 97	15.15	119.92	148.93	5.5	0.020	57	3.70	27.01
7 / 12 / 97	13.62	120.68	132.99	4.6	0.013	116	1.82	54.98
7 / 22 / 97	15.20	122.58	162.87	5.2	0.015	90	2.34	42.65
8 / 2 / 97	16.17	120.97	163.55	4.6	0.010	152	1.39	72.04
8 / 3 / 97	13.08	119.97	225.14	4.6	0.007	193	1.09	91.47
9 / 28 / 97	12.07	120.73	296.20	4.7	0.005	208	1.01	98.58
10 / 14 / 97	13.40	122.23	184.68	4.5	0.008	178	1.19	84.36
12 / 22 / 97	15.04	119.40	201.57	4.9	0.010	158	1.34	74.88
1 / 4 / 98	14.80	121.94	83.35	5.4	0.035	12	17.58	5.69
1 / 11 / 98	16.29	120.84	179.25	4.7	0.010	154	1.37	72.99
3 / 23 / 98	13.12	121.18	175.64	5.1	0.013	115	1.83	54.50
4 / 14 / 98	16.42	119.74	248.28	4.7	0.007	195	1.08	92.42
5 / 7 / 98	12.56	123.64	360.20	5.1	0.000	0	0.00	0.00
7 / 16 / 98	13.81	120.16	151.30	4.6	0.011	139	1.52	65.88
7 / 24 / 98	16.93	119.77	291.77	4.8	0.006	206	1.02	97.63
8 / 1 / 98	12.36	123.71	380.78	5.7	0.000	0	0.00	0.00
8 / 23 / 98	14.73	119.90	142.92	6.1	0.031	23	9.17	10.90
8 / 29 / 98	12.77	123.54	336.72	4.7	0.000	0	0.00	0.00
8 / 31 / 98	14.98	119.78	159.04	4.7	0.011	135	1.56	63.98
9 / 21 / 98	14.19	123.13	221.87	5.4	0.012	124	1.70	58.77
11 / 23 / 98	12.95	120.18	224.35	4.5	0.007	196	1.08	92.89

AVG. ACCELERATION (g) :	0.017			
STANDARD DEVIATION (g) :	0.010			
DESIGN RETURN PERIOD :	250	200	150	100
DESIGN Ag (g) :	0.057	0.05	0.052	0.049

PROJECT NAME : SOLID WASTE MANAGEMENT FOR METRO MANILA
LATITUDE : 14.71
LONGITUDE : 121.19

ZONE OF INFLUENCE FOR THE ANALYSIS : 300 km. Mag. > 7.00

DATE	LAT.	LONG.	RADIUS	M	AG	RANK	TR	P(%)
12 / 14 / 01	14.00	122.00	118.82	7.8	0.111	4	4.00	25.00
4 / 18 / 07	13.00	123.00	275.08	6.5	0.000	0	0.00	0.00
6 / 15 / 28	12.50	121.50	246.57	7	0.029	15	1.07	93.75
6 / 15 / 28	11.50	121.50	356.44	6.7	0.000	0	0.00	0.00
4 / 13 / 27	16.50	120.50	212.46	6.7	0.000	0	0.00	0.00
4 / 13 / 27	16.10	120.50	171.93	6.3	0.000	0	0.00	0.00
4 / 19 / 27	16.00	120.00	194.42	6.7	0.000	0	0.00	0.00
5 / 25 / 25	12.50	122.50	283.84	6.3	0.000	0	0.00	0.00
9 / 5 / 28	16.10	119.50	242.33	6.3	0.000	0	0.00	0.00
11 / 13 / 25	13.00	125.00	461.59	7.3	0.000	0	0.00	0.00
6 / 15 / 28	12.50	121.50	246.57	7	0.029	15	1.07	93.75
12 / 21 / 30	20.10	122.30	608.82	6.9	0.000	0	0.00	0.00
10 / 28 / 31	17.50	121.50	310.67	6.3	0.000	0	0.00	0.00
3 / 19 / 31	18.30	120.20	412.15	6.9	0.000	0	0.00	0.00
12 / 15 / 32	21.00	121.00	696.22	6	0.000	0	0.00	0.00
7 / 24 / 32	16.50	120.50	212.46	6.3	0.000	0	0.00	0.00
7 / 18 / 32	14.00	120.00	153.34	6	0.000	0	0.00	0.00
6 / 14 / 32	18.30	120.20	412.15	6.5	0.000	0	0.00	0.00
6 / 13 / 32	18.10	119.30	429.57	6.3	0.000	0	0.00	0.00
(Partial list of analyzed earthquake data)								
9 / 20 / 33	13.00	121.00	190.09	6.5	0.000	0	0.00	0.00
6 / 6 / 33	14.00	120.00	153.34	6.3	0.000	0	0.00	0.00
3 / 13 / 97	13.63	120.77	128.04	4.8	0.000	0	0.00	0.00
4 / 8 / 97	15.06	119.88	150.24	4.6	0.000	0	0.00	0.00
4 / 13 / 97	15.26	122.26	132.97	4.8	0.000	0	0.00	0.00
5 / 5 / 97	15.15	119.92	148.93	5.5	0.000	0	0.00	0.00
7 / 12 / 97	13.62	120.68	132.99	4.6	0.000	0	0.00	0.00
7 / 22 / 97	15.20	122.58	162.87	5.2	0.000	0	0.00	0.00
8 / 2 / 97	16.17	120.97	163.55	4.6	0.000	0	0.00	0.00
8 / 3 / 97	13.08	119.97	225.14	4.6	0.000	0	0.00	0.00
9 / 28 / 97	12.07	120.73	296.20	4.7	0.000	0	0.00	0.00
10 / 14 / 97	13.40	122.23	184.68	4.5	0.000	0	0.00	0.00
12 / 22 / 97	15.04	119.40	201.57	4.9	0.000	0	0.00	0.00
1 / 4 / 98	14.80	121.94	83.35	5.4	0.000	0	0.00	0.00
1 / 11 / 98	16.29	120.84	179.25	4.7	0.000	0	0.00	0.00
3 / 23 / 98	13.12	121.18	175.64	5.1	0.000	0	0.00	0.00
4 / 14 / 98	16.42	119.74	248.28	4.7	0.000	0	0.00	0.00
5 / 7 / 98	12.56	123.64	360.20	5.1	0.000	0	0.00	0.00
7 / 16 / 98	13.81	120.16	151.30	4.6	0.000	0	0.00	0.00
7 / 24 / 98	16.93	119.77	291.77	4.8	0.000	0	0.00	0.00
8 / 1 / 98	12.36	123.71	380.78	5.7	0.000	0	0.00	0.00
8 / 23 / 98	14.73	119.90	142.92	6.1	0.000	0	0.00	0.00
8 / 29 / 98	12.77	123.54	336.72	4.7	0.000	0	0.00	0.00
8 / 31 / 98	14.98	119.78	159.04	4.7	0.000	0	0.00	0.00
9 / 21 / 98	14.19	123.13	221.87	5.4	0.000	0	0.00	0.00
11 / 23 / 98	12.95	120.18	224.35	4.5	0.000	0	0.00	0.00

AVG. ACCELERATION (g) :	0.084			
STANDARD DEVIATION (g) :	0.053			
DESIGN RETURN PERIOD :	250	200	150	100
DESIGN Ag (g) :	0.289	0.28	0.268	0.251

PROJECT NAME : SOLID WASTE MANAGEMENT FOR METRO MANILA
LATITUDE : 14.71
LONGITUDE : 121.19

ZONE OF INFLUENCE FOR THE ANALYSIS : 300 km. Mag. > 4.50

DATE	LAT.	LONG.	RADIUS	M	AG	RANK	TR	P(%)
12 / 14 / 01	14.00	122.00	118.82	7.8	0.111	4	55.75	1.79
4 / 18 / 07	13.00	123.00	275.08	6.5	0.019	81	2.75	36.32
6 / 15 / 28	12.50	121.50	246.57	7	0.029	38	5.87	17.04
6 / 15 / 28	11.50	121.50	356.44	6.7	0.000	0	0.00	0.00
4 / 13 / 27	16.50	120.50	212.46	6.7	0.029	43	5.19	19.28
4 / 13 / 27	16.10	120.50	171.93	6.3	0.028	44	5.07	19.73
4 / 19 / 27	16.00	120.00	194.42	6.7	0.032	30	7.43	13.45
5 / 25 / 25	12.50	122.50	283.84	6.3	0.016	96	2.32	43.05
9 / 5 / 28	16.10	119.50	242.33	6.3	0.019	76	2.93	34.08
11 / 13 / 25	13.00	125.00	461.59	7.3	0.000	0	0.00	0.00
6 / 15 / 28	12.50	121.50	246.57	7	0.029	38	5.87	17.04
12 / 21 / 30	20.10	122.30	608.82	6.9	0.000	0	0.00	0.00
10 / 28 / 31	17.50	121.50	310.67	6.3	0.000	0	0.00	0.00
3 / 19 / 31	18.30	120.20	412.15	6.9	0.000	0	0.00	0.00
12 / 15 / 32	21.00	121.00	696.22	6	0.000	0	0.00	0.00
7 / 24 / 32	16.50	120.50	212.46	6.3	0.022	59	3.78	26.46
7 / 18 / 32	14.00	120.00	153.34	6	0.027	45	4.96	20.18
6 / 14 / 32	18.30	120.20	412.15	6.5	0.000	0	0.00	0.00
6 / 13 / 32	18.10	119.30	429.57	6.3	0.000	0	0.00	0.00
(Partial list of analyzed earthquake data)								
9 / 20 / 33	13.00	121.00	190.09	6.5	0.029	42	5.31	18.83
6 / 6 / 33	14.00	120.00	153.34	6.3	0.032	28	7.96	12.56
3 / 13 / 97	13.63	120.77	128.04	4.8	0.015	99	2.25	44.39
4 / 8 / 97	15.06	119.88	150.24	4.6	0.011	148	1.51	66.37
4 / 13 / 97	15.26	122.26	132.97	4.8	0.014	112	1.99	50.22
5 / 5 / 97	15.15	119.92	148.93	5.5	0.020	69	3.23	30.94
7 / 12 / 97	13.62	120.68	132.99	4.6	0.013	128	1.74	57.40
7 / 22 / 97	15.20	122.58	162.87	5.2	0.015	102	2.19	45.74
8 / 2 / 97	16.17	120.97	163.55	4.6	0.010	164	1.36	73.54
8 / 3 / 97	13.08	119.97	225.14	4.6	0.007	205	1.09	91.93
9 / 28 / 97	12.07	120.73	296.20	4.7	0.005	220	1.01	98.65
10 / 14 / 97	13.40	122.23	184.68	4.5	0.008	190	1.17	85.20
12 / 22 / 97	15.04	119.40	201.57	4.9	0.010	170	1.31	76.23
1 / 4 / 98	14.80	121.94	83.35	5.4	0.035	24	9.29	10.76
1 / 11 / 98	16.29	120.84	179.25	4.7	0.010	166	1.34	74.44
3 / 23 / 98	13.12	121.18	175.64	5.1	0.013	127	1.76	56.95
4 / 14 / 98	16.42	119.74	248.28	4.7	0.007	207	1.08	92.83
5 / 7 / 98	12.56	123.64	360.20	5.1	0.000	0	0.00	0.00
7 / 16 / 98	13.81	120.16	151.30	4.6	0.011	151	1.48	67.71
7 / 24 / 98	16.93	119.77	291.77	4.8	0.006	218	1.02	97.76
8 / 1 / 98	12.36	123.71	380.78	5.7	0.000	0	0.00	0.00
8 / 23 / 98	14.73	119.90	142.92	6.1	0.031	35	6.37	15.70
8 / 29 / 98	12.77	123.54	336.72	4.7	0.000	0	0.00	0.00
8 / 31 / 98	14.98	119.78	159.04	4.7	0.011	147	1.52	65.92
9 / 21 / 98	14.19	123.13	221.87	5.4	0.012	136	1.64	60.99
11 / 23 / 98	12.95	120.18	224.35	4.5	0.007	208	1.07	93.27

AVG. ACCELERATION (g) :	0.021			
STANDARD DEVIATION (g) :	0.024			
DESIGN RETURN PERIOD :	250	200	150	100
DESIGN Ag (g) :	0.115	0.11	0.105	0.097

PROJECT NAME : SOLID WASTE MANAGEMENT FOR METRO MANILA
LATITUDE : 14.71
LONGITUDE : 121.19

ZONE OF INFLUENCE FOR THE ANALYSIS : 150 km. 7.00 > Mag. > 4.50

DATE	LAT.	LONG.	RADIUS	M	AG	RANK	TR	P(%)
12 / 14 / 01	14.00	122.00	118.82	7.8	0.000	0	0.00	0.00
4 / 18 / 07	13.00	123.00	275.08	6.5	0.000	0	0.00	0.00
6 / 15 / 28	12.50	121.50	246.57	7	0.000	0	0.00	0.00
6 / 15 / 28	11.50	121.50	356.44	6.7	0.000	0	0.00	0.00
4 / 13 / 27	16.50	120.50	212.46	6.7	0.000	0	0.00	0.00
4 / 13 / 27	16.10	120.50	171.93	6.3	0.000	0	0.00	0.00
4 / 19 / 27	16.00	120.00	194.42	6.7	0.000	0	0.00	0.00
5 / 25 / 25	12.50	122.50	283.84	6.3	0.000	0	0.00	0.00
9 / 5 / 28	16.10	119.50	242.33	6.3	0.000	0	0.00	0.00
11 / 13 / 25	13.00	125.00	461.59	7.3	0.000	0	0.00	0.00
6 / 15 / 28	12.50	121.50	246.57	7	0.000	0	0.00	0.00
12 / 21 / 30	20.10	122.30	608.82	6.9	0.000	0	0.00	0.00
10 / 28 / 31	17.50	121.50	310.67	6.3	0.000	0	0.00	0.00
3 / 19 / 31	18.30	120.20	412.15	6.9	0.000	0	0.00	0.00
12 / 15 / 32	21.00	121.00	696.22	6	0.000	0	0.00	0.00
7 / 24 / 32	16.50	120.50	212.46	6.3	0.000	0	0.00	0.00
7 / 18 / 32	14.00	120.00	153.34	6	0.000	0	0.00	0.00
6 / 14 / 32	18.30	120.20	412.15	6.5	0.000	0	0.00	0.00
6 / 13 / 32	18.10	119.30	429.57	6.3	0.000	0	0.00	0.00
(Partial list of analyzed earthquake data)								
9 / 20 / 33	13.00	121.00	190.09	6.5	0.000	0	0.00	0.00
6 / 6 / 33	14.00	120.00	153.34	6.3	0.000	0	0.00	0.00
4 / 8 / 97	15.06	119.88	150.24	4.6	0.000	0	0.00	0.00
4 / 13 / 97	15.26	122.26	132.97	4.8	0.014	65	1.26	79.27
5 / 5 / 97	15.15	119.92	148.93	5.5	0.020	40	2.05	48.78
7 / 12 / 97	13.62	120.68	132.99	4.6	0.013	74	1.11	90.24
7 / 22 / 97	15.20	122.58	162.87	5.2	0.000	0	0.00	0.00
8 / 2 / 97	16.17	120.97	163.55	4.6	0.000	0	0.00	0.00
8 / 3 / 97	13.08	119.97	225.14	4.6	0.000	0	0.00	0.00
9 / 28 / 97	12.07	120.73	296.20	4.7	0.000	0	0.00	0.00
10 / 14 / 97	13.40	122.23	184.68	4.5	0.000	0	0.00	0.00
12 / 22 / 97	15.04	119.40	201.57	4.9	0.000	0	0.00	0.00
1 / 4 / 98	14.80	121.94	83.35	5.4	0.035	11	7.45	13.41
1 / 11 / 98	16.29	120.84	179.25	4.7	0.000	0	0.00	0.00
3 / 23 / 98	13.12	121.18	175.64	5.1	0.000	0	0.00	0.00
4 / 14 / 98	16.42	119.74	248.28	4.7	0.000	0	0.00	0.00
5 / 7 / 98	12.56	123.64	360.20	5.1	0.000	0	0.00	0.00
7 / 16 / 98	13.81	120.16	151.30	4.6	0.000	0	0.00	0.00
7 / 24 / 98	16.93	119.77	291.77	4.8	0.000	0	0.00	0.00
8 / 1 / 98	12.36	123.71	380.78	5.7	0.000	0	0.00	0.00
8 / 23 / 98	14.73	119.90	142.92	6.1	0.031	17	4.82	20.73
8 / 29 / 98	12.77	123.54	336.72	4.7	0.000	0	0.00	0.00
8 / 31 / 98	14.98	119.78	159.04	4.7	0.000	0	0.00	0.00
9 / 21 / 98	14.19	123.13	221.87	5.4	0.000	0	0.00	0.00
11 / 23 / 98	12.95	120.18	224.35	4.5	0.000	0	0.00	0.00

AVG. ACCELERATION (g) : 0.023

STANDARD DEVIATION (g) : 0.011

DESIGN RETURN PERIOD :	250	200	150	100
DESIGN Ag (g) :	0.067	0.07	0.062	0.059

PROJECT NAME : SOLID WASTE MANAGEMENT FOR METRO MANILA
LATITUDE : 14.71
LONGITUDE : 121.19

ZONE OF INFLUENCE FOR THE ANALYSIS : 150 km. Mag. > 7.00

DATE	LAT.	LONG.	RADIUS	M	AG	RANK	TR	P(%)
12 / 14 / 01	14.00	122.00	118.82	7.8	0.111	4	3.00	33.33
4 / 18 / 07	13.00	123.00	275.08	6.5	0.000	0	0.00	0.00
6 / 15 / 28	12.50	121.50	246.57	7	0.000	0	0.00	0.00
6 / 15 / 28	11.50	121.50	356.44	6.7	0.000	0	0.00	0.00
4 / 13 / 27	16.50	120.50	212.46	6.7	0.000	0	0.00	0.00
4 / 13 / 27	16.10	120.50	171.93	6.3	0.000	0	0.00	0.00
4 / 19 / 27	16.00	120.00	194.42	6.7	0.000	0	0.00	0.00
5 / 25 / 25	12.50	122.50	283.84	6.3	0.000	0	0.00	0.00
9 / 5 / 28	16.10	119.50	242.33	6.3	0.000	0	0.00	0.00
11 / 13 / 25	13.00	125.00	461.59	7.3	0.000	0	0.00	0.00
6 / 15 / 28	12.50	121.50	246.57	7	0.000	0	0.00	0.00
12 / 21 / 30	20.10	122.30	608.82	6.9	0.000	0	0.00	0.00
10 / 28 / 31	17.50	121.50	310.67	6.3	0.000	0	0.00	0.00
3 / 19 / 31	18.30	120.20	412.15	6.9	0.000	0	0.00	0.00
12 / 15 / 32	21.00	121.00	696.22	6	0.000	0	0.00	0.00
7 / 24 / 32	16.50	120.50	212.46	6.3	0.000	0	0.00	0.00
7 / 18 / 32	14.00	120.00	153.34	6	0.000	0	0.00	0.00
6 / 14 / 32	18.30	120.20	412.15	6.5	0.000	0	0.00	0.00
6 / 13 / 32	18.10	119.30	429.57	6.3	0.000	0	0.00	0.00
(Partial list of analyzed earthquake data)								
9 / 20 / 33	13.00	121.00	190.09	6.5	0.000	0	0.00	0.00
6 / 6 / 33	14.00	120.00	153.34	6.3	0.000	0	0.00	0.00
3 / 13 / 97	13.63	120.77	128.04	4.8	0.000	0	0.00	0.00
4 / 8 / 97	15.06	119.88	150.24	4.6	0.000	0	0.00	0.00
4 / 13 / 97	15.26	122.26	132.97	4.8	0.000	0	0.00	0.00
5 / 5 / 97	15.15	119.92	148.93	5.5	0.000	0	0.00	0.00
7 / 12 / 97	13.62	120.68	132.99	4.6	0.000	0	0.00	0.00
7 / 22 / 97	15.20	122.58	162.87	5.2	0.000	0	0.00	0.00
8 / 2 / 97	16.17	120.97	163.55	4.6	0.000	0	0.00	0.00
8 / 3 / 97	13.08	119.97	225.14	4.6	0.000	0	0.00	0.00
9 / 28 / 97	12.07	120.73	296.20	4.7	0.000	0	0.00	0.00
10 / 14 / 97	13.40	122.23	184.68	4.5	0.000	0	0.00	0.00
12 / 22 / 97	15.04	119.40	201.57	4.9	0.000	0	0.00	0.00
1 / 4 / 98	14.80	121.94	83.35	5.4	0.000	0	0.00	0.00
1 / 11 / 98	16.29	120.84	179.25	4.7	0.000	0	0.00	0.00
3 / 23 / 98	13.12	121.18	175.64	5.1	0.000	0	0.00	0.00
4 / 14 / 98	16.42	119.74	248.28	4.7	0.000	0	0.00	0.00
5 / 7 / 98	12.56	123.64	360.20	5.1	0.000	0	0.00	0.00
7 / 16 / 98	13.81	120.16	151.30	4.6	0.000	0	0.00	0.00
7 / 24 / 98	16.93	119.77	291.77	4.8	0.000	0	0.00	0.00
8 / 1 / 98	12.36	123.71	380.78	5.7	0.000	0	0.00	0.00
8 / 23 / 98	14.73	119.90	142.92	6.1	0.000	0	0.00	0.00
8 / 29 / 98	12.77	123.54	336.72	4.7	0.000	0	0.00	0.00
8 / 31 / 98	14.98	119.78	159.04	4.7	0.000	0	0.00	0.00
9 / 21 / 98	14.19	123.13	221.87	5.4	0.000	0	0.00	0.00
11 / 23 / 98	12.95	120.18	224.35	4.5	0.000	0	0.00	0.00

AVG. ACCELERATION (g) : 0.106

STANDARD DEVIATION (g) : 0.051

DESIGN RETURN PERIOD :	250	200	150	100
DESIGN Ag (g) :	0.303	0.29	0.283	0.266

PROJECT NAME : SOLID WASTE MANAGEMENT FOR METRO MANILA
LATITUDE : 14.71
LONGITUDE : 121.19

ZONE OF INFLUENCE FOR THE ANALYSIS : 150 km. Mag. > 4.50

DATE	LAT.	LONG.	RADIUS	M	AG	RANK	TR	P(%)
12 / 14 / 01	14.00	122.00	118.82	7.8	0.111	4	22.75	4.40
4 / 18 / 07	13.00	123.00	275.08	6.5	0.000	0	0.00	0.00
6 / 15 / 28	12.50	121.50	246.57	7	0.000	0	0.00	0.00
6 / 15 / 28	11.50	121.50	356.44	6.7	0.000	0	0.00	0.00
4 / 13 / 27	16.50	120.50	212.46	6.7	0.000	0	0.00	0.00
4 / 13 / 27	16.10	120.50	171.93	6.3	0.000	0	0.00	0.00
4 / 19 / 27	16.00	120.00	194.42	6.7	0.000	0	0.00	0.00
5 / 25 / 25	12.50	122.50	283.84	6.3	0.000	0	0.00	0.00
9 / 5 / 28	16.10	119.50	242.33	6.3	0.000	0	0.00	0.00
11 / 13 / 25	13.00	125.00	461.59	7.3	0.000	0	0.00	0.00
6 / 15 / 28	12.50	121.50	246.57	7	0.000	0	0.00	0.00
12 / 21 / 30	20.10	122.30	608.82	6.9	0.000	0	0.00	0.00
10 / 28 / 31	17.50	121.50	310.67	6.3	0.000	0	0.00	0.00
3 / 19 / 31	18.30	120.20	412.15	6.9	0.000	0	0.00	0.00
12 / 15 / 32	21.00	121.00	696.22	6	0.000	0	0.00	0.00
7 / 24 / 32	16.50	120.50	212.46	6.3	0.000	0	0.00	0.00
7 / 18 / 32	14.00	120.00	153.34	6	0.000	0	0.00	0.00
6 / 14 / 32	18.30	120.20	412.15	6.5	0.000	0	0.00	0.00
6 / 13 / 32	18.10	119.30	429.57	6.3	0.000	0	0.00	0.00
(Partial list of analyzed earthquake data)								
9 / 20 / 33	13.00	121.00	190.09	6.5	0.000	0	0.00	0.00
6 / 6 / 33	14.00	120.00	153.34	6.3	0.000	0	0.00	0.00
3 / 13 / 97	13.63	120.77	128.04	4.8	0.015	67	1.36	73.63
4 / 8 / 97	15.06	119.88	150.24	4.6	0.000	0	0.00	0.00
4 / 13 / 97	15.26	122.26	132.97	4.8	0.014	74	1.23	81.32
5 / 5 / 97	15.15	119.92	148.93	5.5	0.020	49	1.86	53.85
7 / 12 / 97	13.62	120.68	132.99	4.6	0.013	83	1.10	91.21
7 / 22 / 97	15.20	122.58	162.87	5.2	0.000	0	0.00	0.00
8 / 2 / 97	16.17	120.97	163.55	4.6	0.000	0	0.00	0.00
8 / 3 / 97	13.08	119.97	225.14	4.6	0.000	0	0.00	0.00
9 / 28 / 97	12.07	120.73	296.20	4.7	0.000	0	0.00	0.00
10 / 14 / 97	13.40	122.23	184.68	4.5	0.000	0	0.00	0.00
12 / 22 / 97	15.04	119.40	201.57	4.9	0.000	0	0.00	0.00
1 / 4 / 98	14.80	121.94	83.35	5.4	0.035	20	4.55	21.98
1 / 11 / 98	16.29	120.84	179.25	4.7	0.000	0	0.00	0.00
3 / 23 / 98	13.12	121.18	175.64	5.1	0.000	0	0.00	0.00
4 / 14 / 98	16.42	119.74	248.28	4.7	0.000	0	0.00	0.00
5 / 7 / 98	12.56	123.64	360.20	5.1	0.000	0	0.00	0.00
7 / 16 / 98	13.81	120.16	151.30	4.6	0.000	0	0.00	0.00
7 / 24 / 98	16.93	119.77	291.77	4.8	0.000	0	0.00	0.00
8 / 1 / 98	12.36	123.71	380.78	5.7	0.000	0	0.00	0.00
8 / 23 / 98	14.73	119.90	142.92	6.1	0.031	26	3.50	28.57
8 / 29 / 98	12.77	123.54	336.72	4.7	0.000	0	0.00	0.00
8 / 31 / 98	14.98	119.78	159.04	4.7	0.000	0	0.00	0.00
9 / 21 / 98	14.19	123.13	221.87	5.4	0.000	0	0.00	0.00
11 / 23 / 98	12.95	120.18	224.35	4.5	0.000	0	0.00	0.00

AVG. ACCELERATION (g) : 0.032

STANDARD DEVIATION (g) : 0.034

DESIGN RETURN PERIOD :	250	200	150	100
DESIGN Ag (g) :	0.163	0.16	0.149	0.138

ATTACHMENT D

List of EIS Prepares

This Environmental Impact Statement (EIS) is a product of collective efforts of professional engineers, specialists and consultants of Woodfields Consultant, Inc.. The project proponent, the Metro Manila Development Authority (MMDA), and the host LGU for the proposed project, the Local Government of the Municipality of Rodriguez, Rizal, have likewise extended its fullest support and assistance in the finalization of this document. The members of the EIA Study Team behind the production of this EIS document are as follows:

	Name	Designation	EMB-DENR Accreditation Number
1.	Dr. Delfin C. San Pedro	EIS Study Team Leader Environment Specialist	A2DCS0031
2.	Engr. Ruel B. Janolino	Co-Team Leader Environmental Engineer	A3RBJ0043
3.	Dr. Raoul M. Cola	Socio-Economic Specialist	BIRMC0125
4.	Mr. Julito M. Baldisimo	Ecologist/Flora and Fauna Specialist	BIJABO 1 16
5.	Dr. Emmanuel Ramos	Noise and Vibration Specialist	On-process
6.	Mr. Bing Rufo	Air Quality and Modeling Specialist	On-process
7.	Engr. Ronald Carreon	Geotechnical Specialist	On-process
8.	Mr. Ernesto Alcantara	Hydrogeologist	On process
9.	Dr. Rey Medina	Hydrologist	On-process
10.	Engr. Cherileen C. Cruz	Environmental Engineer	C2CCCO032

ATTACHMENT E

Accountability Statement of EIS Prepares

ACCOUNTABILITY STATEMENT OF EIS PREPARERS

This is to certify that all information in the enclosed **Environmental Impact Statement (EIS)** for the proposed **NEW PARCEL 'B' SANITARY LANDFILL PROJECT** is true, accurate and complete. Should we learn of any information which could make the enclosed EIS inaccurate, we shall bring said information to the attention of the Environmental Management Bureau/ Environmental Management and Protected Areas Sector of appropriate DENR Regional Office.

We hereby bind ourselves jointly and solidarily to answer for any penalties that may be imposed for any misinterpretations or failure to state material.

In witness whereof, we hereby set our hands this _____ day of _____, 1999.

	Name	Designation	Signature
1.	Dr. Delfin C. San Pedro	EIS Study Team Leader Environment Specialist	_____
2.	Engr. Ruel B. Janolino	Co-Team Leader Environmental Engineer	_____
3.	Dr. Raoul M. Cola	Socio-Economic Specialist	_____
4.	Mr. Julito M. Baldisimo	Flora and Fauna Specialist	_____
5.	Dr. Emmanuel Ramos	Noise and Vibration Specialist	_____
6.	Mr. Bing Rufo	Air Quality and Modeling Specialist	_____
7.	Engr. Ronald Carreon	Geotechnical Specialist	_____
8.	Mr. Ernesto Alcantara	Hydrogeologist	_____
9.	Dr. Rey Medina	Hydrologist	_____
10.	Engr. Cherileen C. Cruz	Environmental Engineer	_____

SUBSCRIBED AND SWORN to me this _____ day of _____, 1998, affiants exhibiting to me their Community Tax Certificate (CTC), the number, date and issuance of which are set forth beside their names as herein enumerated.

	NAME	CTC NO.	DATE ISSUED	PLACE ISSUED
1.	Dr. Delfin C. San Pedro	_____	_____	_____
2.	Engr. Ruel B. Janolino	_____	_____	_____
3.	Dr. Raoul M. Cola	_____	_____	_____
4.	Mr. Julito M. Baldisirno	_____	_____	_____
5.	Dr. Emmanuel Ramos	_____	_____	_____
6.	Mr. Bing Rufo	_____	_____	_____
7.	Engr. Ronald Carreon	_____	_____	_____
8.	Mr. Ernesto Alcantara	_____	_____	_____
9.	Dr. Rey Medina	_____	_____	_____
10.	Engr. Cherileen C. Cruz	_____	_____	_____

Doc. No. _____
Page No. _____
Book No. _____
Series of 1999

ATTACHMENT F

Accountability Statement of Proponent

ACCOUNTABILITY STATEMENT OF THE PROJECT PROPONENT

This is to certify that all the information in the enclosed in this **Environmental Impact Statement (EIS) the Proposed New Parcel B Sanitary Landfill Project** in San Rafael, Rodriguez, Rizal, are true, accurate, and complete. Should we learn of any information which would make the enclosed EIS inaccurate, we shall bring said information to the attention of the Environmental Management Bureau (EMB) or the Environmental Management & Protected Areas Sector (EMPAS) of the appropriate DENR Regional Office.

We hereby bind ourselves jointly and solidarily with the preparers for any penalties that may be imposed arising from any misrepresentations or failure to state material information in the enclosed IEE/EIS.

In witness whereof, we hereby set our hands this _____ day of _____ at _____.

_____
Project Proponent

_____
Title/Designation

SUBSCRIBED AND SWORN to before me this _____ day of _____, affiant exhibiting to me his/her Tax Identification Number (TIN) and Community Tax Certificate No. _____ issued on _____ at _____.

_____
Notary Public

Doc. No. _____
Page No. _____
Book No. _____
Series of 199____

ATTACHMENT G

Proof of Social Acceptability

ATTACHMENT H

Process Documentation and Minutes of the Scoping Sessions

MINUTES OF THE MEETING : FIRST LEVEL SCOPING SESSION FOR THE PROPOSED NEW PARCEL "B" SANITARY LANDFILL PROJECT, SAN RAFAEL, RODRIGUEZ, RIZAL

PTFWM OFFICE
ENVIRONMENTAL MANAGEMENT BUREAU
KAMIAS, QUEZON CITY

20 OCTOBER 1998

Date : October 20, 1998
Venue : PTFWM

Subject : Minutes of the Meeting of the First Level Scoping Session for the Proposed New Parcel "B" Sanitary Landfill Project

Attendance:

1.	Rogelio U. Uranza	-	AGM for Operations, MMDA
2.	Leopoldo Parumog	-	Head, Infra Planning-SWM, MMDA
3.	Elsie I. Encarnacion	-	Planing Officer, MMDA
4.	Delfin C. San Pedro	-	Environmental Consultant, Woodfield
5.	Arnold S. Bufi	-	Engr. III, EIA-EMB
6.	Fujie Igari	-	Civil Engr., MMDA-JICA
7.	Elenita Yan	-	Researcher, MMDA-JICA Study
8.	Junji Anai	-	JICA-MMDA
9.	Rogelio U. Uranza	-	AGM for Operation, MMDA
10.	Miguel L. Bisnar	-	EIA-RC, NPC

Matters presented and discussed:

1. Mr. Arnold Bufi of EIA-EMB initiated the meeting. He requested everyone to introduced him/herself and the agencies or group/s that they are representing.

2. Mr. Bufi mentioned that the objective of the first level-scoping meeting is to meet minds among the proponent, consultants and DENR represented by the staff/member of EIA-RC, EIA-EMB and PTFWM. Specifically, the objective is to identify the scope of works of the EIA consultant in relation to the conduct of the environmental impact assessment for the proposed landfill project.

3. After Mr. Bufi's short introduction on the purpose of the meeting, he gave the floor to Mr. Bisnar to act as the Chairman of the scoping session. Mr. Bisnar is one of the members of the EIA-RC. After his brief explanation, he than requested Mr. Uranza of MMDA to present the project briefs. He was assisted by Mr. Anai, a JICA representative.

4. After the project brief presentation, the group proceeded and agreed in the identification of the scope of the EIA study to be conducted for the project. This is with the understanding that the project is composed of the landfill and access road components.

   The attached Form 1 or the procedural Evaluation (Screening Phase) shows the agreed scope of the EIA study.

5. Comments and suggestions

   - Based on the identified site of the project, MMDA-JICA and the EIA Study team should coordinate with the Barangay Captain of San

Rafael, Montalban, Rizal. The whole of the proposed landfill site falls within the jurisdiction of this barangay. It should be noted that the project site was mistaken to be part of Pintong Bukawe, San Mateo, Rizal where initial consultation with its barangay officials has already been made.

- The scope of the work for the following modules should be checked against the scope of surveys being undertaken for the project:

1. Water Resources Study

   It was requested by Mr. Bisnar that a thorough water resources study be included such as the inventory of wells, springs (groundwater resources) and surface water bodies in the vicinity of the area. The four (4) samples previously collected by TEEM may not suffice the requirements of the EIA-RC.

   Water quality characterization should include bacteriological analysis.

2. Air Quality Survey

   It is mentioned that baseline data on H2S and methane be included in the survey aside form the usual parameters such as NOx, SOx and TSP. It is suggested that 2 air samples be collected for H2S and methane analyses.

3. Soil Sample Analysis

   DENR suggested that heavy metals be included in the survey. The consultant will decide on the specific metals to be subjected for analysis. Among those mentioned by DENR are Pb, Hg, As, and Cd.

4. Traffic count and Projection

   It is specifically mentioned by Mr. Bufi that a separate traffic count and traffic projection study be conducted for the proposed access road/s.

5. It was agreed that result of the geotechnical investigation will be included I the EIS as one of the annexes or attachments.

6. It is suggested that Dr. Cola (and some members of the EIA study Team) should meet MMDA-JICA to plan and strategize the "social acceptability" aspect of the EIA study. This meeting need to be done as soon as possible.

MINUTES OF THE MEETING : SECOND LEVEL SCOPING SESSION FOR THE PROPOSED NEW PARCEL "B" SANITARY LANDFILL PROJECT, SAN RAFAEL, RODRIGUEZ, RIZAL

ANCESTRAL HOMES OF RODRIGUEZ
RODRIGUEZ, RIZAL

13 NOVEMBER 1998

1. The Second Level Scoping Session on Metro Manila's New Sanitary Landfill Project was held at the Ancestral Home of Rodriguez (formerly Montalban) Municipality, Rizal Province. Major participants are stakeholders of Rodriguez Municipality, representatives from Metropolitan Manila Development Authority (MMDA), members of the EIA Review Committee (EIA-RC), and the JICA Study Team. (Refer to Annex A)

2. Mayor San Diego opened the session with a brief remark about hoping for a fruitful discussion and everybody's show of concern for this project.

3. Mr. Rogelio Uranza AGM for Operations, MMDA, reported that the first level scoping session was held at DENR-EMB to present the proposed project and to get the guidelines on environmental concerns to be included in the study. He explained the purpose of the second level scoping session, that is, to issues and concerns of stakeholders so that an environmentally friendly, technically sound disposal site so that these may be addressed in the study. One of the project sites considered is in Bgy. Enigan in this muncipality. So that if ever, the landfill that will be built here will be of international standard.

4. Mr. Anai presented technical report, while Engr. Parumog discussed the checklist on local environment.

5. Some questions raised immediately after presentation:

Question: Does San Mateo SLF conform with international standard?

A. It conforms with intl. standard. But there are problems. The quality can still be raised. Further improvement will have to bemade. Study is ongoing, and its improvement is being negotiated for grant funding.

Q: Are you aware that Montalban has two faultlines. One in west and other east. Is it safe to build a disposal site?

A. We are aware. But the proposed SLF is not located at the faultline. Detailed geolocical survey was made.

Q: Are you aware of NIPAS Act? Why was the area selected inspite of this?.

A: Yes, as a matter of fact, the case is already in the Supreme Court. But if the area is not feasible, we will admit it. We based our right to develop it from PD 634. We will see to it that everything is legal to avoid complication. Development of the landfill is being studied to complement landuse development plan of San Mateo

6. More questions and corresponding answers are listed below.

NOTE: Actual questions are attached herewith.

Name	Question	Answers
Mr. Virgilio Lazarte	• Hindi kaya ito makaapekto sa kalusugan ng mga tao at at buhay ng mga hayup at pananim	Should not harm.. Technical studies being done. Soil study,.. etc. what measures to institute. This is being studied. Leachate not being thrown Gas has collection system. Study ongoing help from USEPA. Methane can be used to produce electricity. E.g. gas for vehicle use. , electricity for those without. Low cost electricity. In San Sateo, possibility not to dump all. Project is to produce compost fertilizer. Tie up with a company to produce compose fertilizer, target to produce 8 tons a day.
Mr. Joseph Bitancor	-	-
Mr. Zaldy Cruz	• Re Marikina River • No other site aside from Bgy. San Rafael? • benefit	Answered by above Looking into a site in laguna, Zambales,.. reclamation in Manila Bay. Which is being done in other countries Problem is time. To fast track development of landfill. When crisis occurred in 88, the problem was time. Now we have a little time. Our problem is we're always in a hurry. Now we have developed a Maser Plan. Advantage is that we can have an idea of how to go about this. We are sure that the place is inaccessible right now. Build infrastructure, road... generate livelihood, project itself needs workers.

		As much as possible from the site itself. Our experience is that workers from within would show more concern since they live there. In San Mateo, there were 2 trips only. Now San Mateo has concrete roads, problem is subdivision and increasing population. Problems have arisen.
Mr. Vic Alvarez	Problem on leachate that will reach Marikina River and its tributaries? Source of water from deepwell, how safe is it?	(That remains to be seen) Technical preparations were explained, studies on soil will be done, results of study then will give indication of measures to be done to prevent contamination. Monitoring well to be installed. To be tested periodically to see if there is change in water quality above and below. Soil study. In San Mateo, the depth of the landfill, is 5m away from lower aquifer. This was studied by hydrologist of ADB. Estimate that 180 days is needed to reach ... before that happens, it is purified. Biodegradable chemicals will be used to treat water. not synthetic chemical. This will also solve problems of flies and other contaminants. But study is continuous Difficult to decide, other people suggest different

		things. Decisions sometimes are based on emotions.
	Squatter problems	This can arise. Limit dialogue since not final decision yet. Squatters might come in suddenly. To implement safeguards. To organize everything . Like in San mateo. Only 30 ..all of a sudden.. squatters mushroomed. In Carmona only 2,then 42
	Problem on quarrying,, and then another problem before the former is solved	Sec. Cerilles mentioned this. We have to take note of this. Start dialogue. Permitting process. No coordination. Now, nothing is happening yet, already looking ahead. So that everything will be in place. Look into area in Zambales to look into possibility of place as disposal site.
	• Waste scattered on roads	In MM, procedures are evolving. In Makati, 1 year contract, after 3 months, change 1 to compactor
	• Accidents	This is true, that is why there has to be a review process. In San Mateo, we changed a lot o design. Some things cannot be predicted. Countermeasures instituted
	• Recycling while developing landfill	We organized pook kalinisan.. was not followed. In Manila, no cooperation. One problem is congested HHs. At first

		active, In one barangay in the south, earning 5,000 a day, after two weeks. No longer practice, because other people have left. Now we're using KB, out of school youth, more active. Another is funding problem for equipment. Dr. Nagayama explained that our society is already practicing recycling. Compared with other countries . Recycling at home, wastepickers. Market is not developed. No balance between supply and demand. Encourage not only people but industry.
Mr. Ramly San Pascual	• Flooding will cause san mateo waste to flow into...	Related previous question....What happened was before rainfall does not go beyod 0.6 cm. Last typhoon was 2.5 cm. Design was good for 5 yrs. So now studying to improve...
	• LLDA and DENR ok?	Still observing, reviewing. To make sure that all issues are taken up and addressed. Finished study subject to public hearing. Study has to be acceptd to be granted ECC.
	• Give guaranty fund if Montalban residents get sick as a result of the landfill?	This is one of the emerging rules. Denr requires this. To prevent another Marinduque experience. We agree with this. We are trying to find out haw to raise fund for this.
Mr. Manuel Orogo	Coordinated with prov. Gov.	Yes, we are coordinating. We are just starting with your. In the Steering Com. meeting, the gov. was represented. Compile all

	municipal council	
DENR^RC	Comprehensive presentation, impacts of project on nature, etc. like experience of other landfills, what about scavengers so that LGUS will be prepared, if project is accepted. Proponent should show that they have complete plans • Anu-ano and mga epekto ng proyekto sa tao at kalikasan • Paano ang mga pamilyang maaaring ma-displace • What will MMDA do to insure that the Carmona experience will not be repeated • What will be done to compensate for negative impacts to the environment Anu-ano ang sama-samang epekto sa kapaligiran/kalikasan ng landfill na ito at ang mga iba pang projects sa kalapit na lugar kagaya ng golf course at dumadaming pabahay.	Experience in San Mateo and Carmona are entirely different. Difficulty in dialogue- unreasonable. MMDA will not work to reopen Carmona. Cannot answer all questions. Some were answered previously. It will be answered based on the outcome of the study. Negotiate later on terms and conditions

7. The stakeholders have all agreed on the contents of this minutes and have affixed their signatures below:

Municipality of Rodriguez

Hon. Rafaelito San Diego — Mayor

Mr. Virgilio Lazarte

Mr. Joseph Bitancor

Mr. Zaldy Cruz

Mr. Vic Alvarez	Sagip Kalikasan	
Mr. Ramly San Pascual	Montalban River Rehab. Council	
Mr. Manuel Orogo	MPDC	
Mr. Ernie de Leon	Clean & Green	11/13
Mr. Ramon Juanillo	RUPA President	
Mr. Greg Pascua	Councilor Municipal Employee	
Mr. Reynaldo C. Albac	Sangguniang Bayan Councilor	
Mr. Tomas V. Cruz	SB Member	
DENR-EMB		
Ms. Arlene Reyes	Member, EIA-RC	Arlene M. Reyes
Mr. N. Francisco	Sr. EMS	
Mr. Jessie Tanola	PMO Staff	

Consultant

Wilfredo C. San Pedro	Woodfields	
DANILO C. [illegible]	BSC CAPT.	
ROBERTO V. DARIANO	Brgy. Secretary (PINTONG BOCAWE, SAN MATEO)	
LEOPOLDO V. PARUMOG	MMDA	
ROGELIO U. URANZA	Dep. Manager for Operations, MMDA	

8. ANNEX A

LIST OF ATTENDANTS

Municipality of Rodriguez	
Hon. Rafaelito San Diego	Mayor
Mr. Virgilio Lazarte	
Mr. Joseph Bitancor	
Mr. Zaldy Cruz	
Mr. Vic Alvarez	Sagip Kalikasan
Mr. Ramly San Pascual	Montalban River Rehab. Council
Mr. Manuel Orogo	MPDC
Mr. Ernie de Leon	Clean & Green
Mr. Ramon Juanillo	RUPA President
Mr. Greg Pascua	Councilor
Mr. Reynaldo C. Albac	Sangguniang Bayan
Mr. Tomas V. Cruz	SB Member
DENR-EMB	
Ms. Arlene Reyes	Member, EIA-RC
Mr. N. Francisco	Sr. EMS
Mr. Jessie Tanola	PMO Staff
MMDA	
Mr. Rogelio U. Uranza	Asst. GM for Operations
Engr. Leopoldo V. Parumog	Head, Operations Group
Mr. Jun Samson	Head, Transfer Station & South Sector Manager
Ms. Elsie Encarnacion	Head, Research & Dev. Unit
Mr. Bong Syquimsiam	Head, Monitoring Unit
Ms. Helen Agacer	
Ms. Rachel Sangalang	
Ms. Emma Caldino	
Ms. Filomena Berame	
Ms. Erna Rivera	
JICA Study Members	
Dr. Nagayama	Team Leader
Mr. Junji Anai	Deputy Team Leader
Mr. Osamu Isoda	Environmentalist
Ms. Elenita Yam	Local Staff Member
Woodfields Consultants	
Dr. R. Medina	Consultant
Dr. San Pedro	Consultant
Mr. Raul Cola	Consultant

Summary of Questions/Concerns/Comments

Verbatim from the sheets/pieces of papers distributed during the scoping sessions.

Card No.	Person/Party	Questions/Concerns
1.	MR. VIRGILIO LAZARTE	Hindi kaya ito makaapekto sa kalusugan, sa mga pananim, at buhay ng mga hayop dito sa kapaligiran namin?
2	MR. ZALDY CRUZ	Wala na bang ibang site na puwedeng gamitin aside from Brgy. San Rafael?
		Anong pakinabang o magiging katayuan ng mga taong nakapaligid dito?
		Anong kasiguruhan ang puwede ninyong ibigay sa amin na hindi maapektuhan ang ilog namin na alam ng lahat na dito kumukuha ng ikinabubuhay like (pangingisda).
4	MR. VIC ALVAREZ	Aquifer disturbance, since almost 95% of potable water comes from deepwell. How safe is it?
		Waste handling from source to sanitary landfill.
		All structures are made by man, so this is subject to incidental mistakes or accident.
		Problem on squatters that will mushroom along the vicinity of sanitary landfill.
		We have not finish yet the problem with quarrying and here is another problem.
		Why not practice re-cycling while developing landfill? ■ with this, apply source reduction ■ what if there will be no landfill to be use?
		Problem on leachate that will reach Marikina river thru its tributaries.
5	MR. RAMLY SAN PASCUAL	Payag ba ang LLDA at DENR. Why?
		Kasiguraduhan.. Hindi kaya maulit ang pangyayari na may basura na galing sa San Mateo Landfill ay masama sa baha na dulot ng kalamidad na gaya ng typhoon Loleng doon sa Manno River at Montalban River?
6	MR. MANUEL OROGO	How could the municipal gov't. & its constituents benefit from your project.
		Is the project coordinated with the Provincial Government?
7	MR. ERNIE DE LEON	What is JICA-MMDA's target time of completion of this proposed landfill? -Please tell us about how you intend to maintain the access roads? -Is it macam type, asphalt-paved or concrete roads?

Summary of Questions/Concerns/Comments

Verbatim from the sheets/pieces of papers distributed during the scoping sessions.

Card No.	Person/Party	Questions/Concerns
7		Upon completion of the landfill site ready for operation, Will the municipality of Montalban be empowered to collect fees, etc. from dumping contactors/cities & municipality.
		Being the Head of the Rodriguez Clean and Green council and an active supporter-member of WWF for Nature Switzerland, what is MMDA-JICA's plan to improve the economic-livelihood development of affected families living in the proposed landfill site in Wawa?
		How does MMDA-JICA intend to redevelop the areas which are portions of said landfill site? How about the plan to reforest & bring back the area to a forest-green landscape?
8	DENR-EIA-RC	What will be done to compensate for negative impacts to the environment?
		What will MMDA do to insure that the Carmona experience will not be repeated.
		Anu-ano ang mga epekto ng proyekto sa tao at kalikasan?
		Paano ang mga pamilyang maaring ma-displace?
		Anu-ano ang sama-samang epekto sa kapaligiran/kal;ikasan ng landfill na ito at ang mga iba pang projects sa kalapit na lugar kagaya ng golf courses at dumadaming pabahay?
9	VIEW FROM URBAN POOR Ramon Juanillo RUPA-Pres.	Create flood: Landfill is present in San Mateo is no longer control the volume of garbage in Metro Manila. Typhoon Loleng all garbage at San Mateo was push by bulldozer at Sitio Estanyong-Bato, Sitio Kayrupa, Wawa down to Marikina River. As a result mally creek cause flood at the C. Mabini neighborhood com including the BECCO aggrates.
		Proposed landfill at Sitio Enigan was not consulted w/ Barangay officials and residents.
10	GREG PASCUA	Is this matter (landfill) has been brought to the attention/approval of the municipal council? If so, what the score?
?		Magbibigay ba ng guarantee fund para sa mamamayan ng Montalban?

ATTACHMENT I

Photographs

ATTACHMENT J

Perception Survey Form

Socio-economic Survey

I- HOUSEHOLD PROFILE

1. Ilan po ba kayong lahat na nakatira sa bahay na ito? _____

2. Puede po ba malaman ang unang pangalan bawat isa sa inyo at kung ilang taong gulang na ang bawat isa? (Write the responses in Answer Sheet No. 1)

3. Sa mga binangit ninyo na 5 na taong gulang o higit pa, ano po ba ang natapos nang bawat isa sa pag-aaral? (Write the responses in Answer Sheet No.1)

4. Sa binangit ninyo na 5 taong gulang o higit pa, mayroon po bang hindi pa nakatira noong 1990. Saan po sila nakatira dati? (Get the brgy., mun. and prov. and write in Answer Sheet No. 1)

Answer Sheet No. 1

Name	Age	Highest Education	Residence in 1990 Barangay	City/Mun./Prov.	Occu-pation	Salary /Month

III -Economic Activities

1. Sa binangit ninyo na 15 taong gulang o higit pa, ano po ba ang kanyang okupasyon o karaniwang gawain ng bawat isa (Write the responses in Answer Sheet No. 1)

2. Sa mga sumisweldo na regular, magkano po and kinikita ng bawat isa sa isang buwan? (Write responses in Answer Sheet No. 1)

3. Sa mga mangingisda, anong klasing kagamitan ang madalas ninyong gamitin? (Pls. check) Kawil_____ Pana_____ Basnig_____ Sakag? _____ Iba pa (Ibigay ang pangalan) _____ .

4. Sa mga mangingisda, saan po sila madalas mangisda? Pakisabi ang pangalan ng ilog, kung sa ilog. Kung sa Laguna de Bay pakisabi kung ano ang pangalan itong lugar o kung saan ito malapit. _____

5. Sa mga mangingisda, karaniwan ilang bases po kayo lumalabas para mangisda sa isang buwan? _____ Na bases bawat buwan.

6. Sa mga manngingisda, ilang kilo ang kadalasan ninyong nakukuha sa isang labasan bawat isang mangingisda? _____ na kilo.

7. Sa mga kasamang-bahay na may sinasaka, ano po ba ang inyong tinatanim? (The answer may be more than one. Encircle or write the answer in Answer Sheet No. 2).

8. Mga ilang hektarya po ang tinataniman ng bawat klase na pananim? (Ask for every crop and write response in Answer Sheet No. 2).

9. Ilang basis sa isang taon kayo nag-aani? (Ask for every crop and write response in Answer Sheet No. 2).

10. Gaano kalaki ang nakukuha ninyo sa isang hiktaria sa bawat ani? (Ask for every crop and write response in Answer Sheet No.2)

11. Sa mga nagbibinta nang produkto, magkano ang binabayad sa inyo sa bawat kilo noong huli kayong nagbinta? (Ask for every crop and write response in Answer Sheet No. 2)

ANSWER SHEET NO. 2

Crop	Land Area	No. of Harvests Per Year	Production/ Ha/Harvest	Selling Price/Kg.
Rice	_____ Ha.	_____	_____ Kg.	P _____
Others				
_____	_____ Ha.	_____	_____ Kg.	P _____
_____	_____ Ha.	_____	_____ Kg.	P _____

12. Maliban sa kinikita nang bawat isa na naghahanap buhay, mayroon pa bang ibang pinagkakikitaan ang kasambahay na ito? Kung mayroon, anong uri ang mga ito at magkano ang kinikita sa isang taon? (Read the following)

Upa galing sa mga ari-arian	P_____per year
Padala galing sa mga kamaganak	P_____per year
Kita galing sa lupang pinasaka	P_____per year
Pension o "allowance"	P_____per year
Kita galing sa pagbibinta ng hayopan	P_____per year
Kita galing sa "sideline" na negosyo (if mentioned in individual source of income, pls. omit)	P_____per year
Iba ba (pakisabi na lang kung ano)	P_____per year

IV Housing

1- A. Ito po ba ang bahay na tinitiran ninyo ay pagaari ninyo?
Oo _____ Hindi _____

B. Kung hindi, ano po bang klase ang usapan ninyo sa may ari?
May upa_____ Nag-amortize _____ Libreng Tira _____

C. Ito po ba ang lupa na tina tayuan ng bahay, sa inyo po ba?
Oo___ Hindi___. Kung hindi, ano ang usapan ninyo sa may ari
May Upa _____ Nag-amortize____ Libreng gamit _____

2- A. Kayo po ba ay may kaselyas? Oo_____ Wala _____
B. Kung mayroon, anong klase ito?
Flash ___ Water-sealed ___ Close pit ___ Open pit _____

3. Saan po kayo kumukuha ng tubig para inumin?

Gripo _____ Poso _____ Balon _____ Ilog _____
Ulan _____ Iba pa _____(Pls. specify)_

4. Type of House: (Do not ask but simply observe and check below)

Single Detached Unit _____ Duplex _____
Apartment/Town house _____ Accessoria _____
Barong-barong (made of salvaged materials _____

5. Type of Roofing:

GI Sheet/Asbestos _____ Nipa _____
Discarded Materials _____ Others _____

6. Type of Wall:

Cement _____ Wood _____ Mixed Cement/wood _____
Nipa _____ Discarded Materials _____

V Perceptions and Attitudes

1. Ano po sa tingin ninyo ang pinakamabigat na problema sa inyong barangay? _____

2. Mayroon bang mabuting bagay na naidulot ang proyekto na landfill sa inyong nayon? Oo__ Wala__ Kung Oo, ano ang mga ito? _____
_____

3. Mayroon bang hindi mabuting bagay na naidulot ang ~~Caltex~~ landfill sa inyong nayon? Oo _____ Wala _____ Kung Oo, ano ang mga ito?
_____

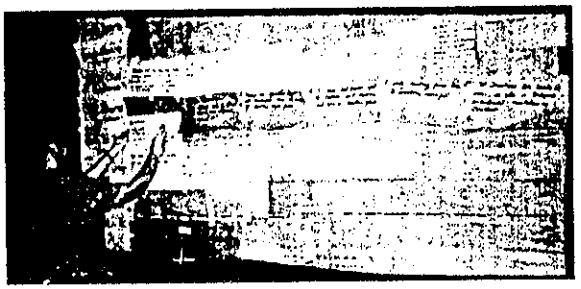
4. May marekomenfda ba kayo na solusyon sa hindi mabuti na bagay na ito?_____

ATTACHMENT K

DENR Form 1 - Procedural Evaluation (Screening Phase)

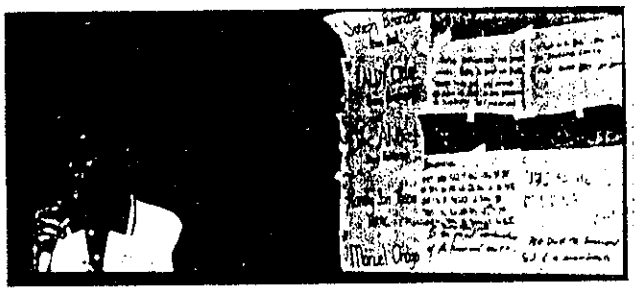
P-1

P-2



P-3

P-4



P-5

P-6

These pictures were taken during the second level scoping session held at the Rodriguez, Rizal.

P-1 One of the members of the EIA-RC while listening to the presentation of JICA expert.

P-2 Some of the local participants seriously thinking & writing their concerns about the proposed project.

P-3 Ms. Elsie Encarnacion of MMDA while facilitating the scoping session.

P-4 & P-5 JICA experts & MMDA official answering questions during the open forum.

P - 6 The participants together with the proponents exchanging views and opinions during break time.

The enumerators in action during the conduct of the Perception Survey.

The consultant during the collection of water samples from one of the springs found in the area.

The project site viewed from the top of the hills of the hills in in neighboring Barangay of Pintong Bocaue. The nearest body of surface is Wawa River.

A close view of the section of the Wawa River nearest to the site.

DENR EIS REVIEW CRITERIA

FORM 1: PROCEDURAL EVALUATION (SCREENING PHASE)

Name of Proponent	:	Metro Manila Development Authority
Address	:	MMDA Building, Orense cor. EDSA, Guadalupe, Makati City
Name of Proposed Project	:	New Parcel 'B' Sanitary Landfill
Proposed Location	:	Sitio Inigan, San Rafael, Rodriguez, Rizal
Date of ECC Application	:	_____

"MUST" Criteria		Yes	No	Remarks
Communication of Results				
a)	**Table of Contents**	✓		
b)	**Presentation of Executive Summary** in EIS which should include the following:			
	• brief description of the project	✓		
	• brief description of the data gathering: scope, duration/period, team, methodology	✓		
	• brief description of the project environment (focus on main conclusions and their basis)	✓		
	• tabulated summary and discussion of major impacts, main mitigating measures, main components of the Environmental Management Plan	✓		
	• tabulated summary of the Environmental Monitoring Plan	✓		
c)	**Scoping Report**	✓		
d)	**Process Documentation Summary**	✓		
e)	**Summary of Proof of Social Acceptability**	✓		**Partial discussion only**
1.0	**Project Description**			
1.1	**Basic Project Information** Statement of the official name of the project, address, telephone/fax number and project officer responsible/liable for the EIS	✓		
1.2	**Project Location**	✓		
	1.2.1 Identification of barangay, municipality/city, provincial and regional location of the project	✓		
	1.2.2 Presentation of maps of the following scale: national – 1:250,000; regional – 1:100,000; provincial – 1:50,000; land use map 1:50,000; vicinity map/location map 1:10,000; showing title, legend, scale, project location and political boundaries; delineation of areas of primary and secondary impact areas	✓		
1.3	**Project Rationale**	✓		
1.4	**Alternatives**	✓		
1.5	**Description of Project Phases**			
	1.5.1 Pre-Operational / Construction Phase	✓		
	1.5.2 Operational Phase	✓		
	1.5.3 Abandonment Phase	✓		
2.0	**Baseline Environmental Conditions**			
2.1	**Land**	✓		

(PROCEDURAL REVIEW) Project: _____

_____

_____

DENR EIS REVIEW CRITERIA

"MUST" Criteria		Yes	No	Remarks
2.2	**Water**	✓		
2.3	**Air**	✓		
2.4	**People**	✓		
2.5	**Future Environmental Conditions without the Project**	✓		
2.6	**Future Environmental Conditions with the Project**	✓		
3.0	**Impact and Risk Assessment (if required)**			
3.1	**Impact Identification**	✓		
3.2	**Impact Prediction and Evaluation**	✓		
3.3	**Impacts Mitigation/Enhancement Plan**	✓		
3.4	**Unavoidable and Residual Impacts (if any)**	✓		
4.0	**Environmental/Risk Management Plan**			
4.1	**Mitigation/Enhancement Measures/Plan (Impacts/Risks)**			
	4.1.1 Construction Contractor's Program		✓	Necessary (to be provided by MMDA)
	4.1.2 Social Development Program	✓		To be approved by MMDA
	4.1.3 Contingency Response Plan	✓		More data to be supplied to the Consultant
	4.1.4 Abandonment Plan	✓		
4.2	**Environmental Monitoring Plan**	✓		
4.3	**Institutional Plan**	✓		
4.4	**Information Education Communication Plan**	✓		
4.5	**Cost Estimate/Viability (to be incorporated in each Plan)**		✓	To be supplied by MMDA based on FS
5.0	**Proposal for an Environmental Monitoring and Guarantee Fund**		✓	To be supplied by MMDA
Bibliography		✓		
Attachments or Annexes:				
a)	**Presentation of List of EIS Preparers with specified field of expertise**	✓		
b)	**Submission of original Sworn Accountability Statements of key EIS Consultants**	✓		Template only. To be accomplished
c)	**Submission of original Sworn Accountability Statements of EIS Proponent**	✓		Template only. To be accomplished
d)	**Summary of proof of social acceptability**			
	• Risk Management Plan submitted	✓		To be enhanced based on available data.
	• Environment Management and Monitoring Plan submitted	✓		
	• Municipal resolution endorsing the project		✓	To be obtained by MMDA
	• Barangay resolution endorsing the project		✓	To be obtained by MMDA
	• Endorsement letter of local NGOs		✓	To be obtained by MMDA
	• Endorsement letter of local POs		✓	To be obtained by MMDA
	• Signed contract between proponent and contractor(s) incorporating the mitigation and enhancement measures in the scope of work			Not applicable at this time. Instead, sample contract with previous

(PROCEDURAL REVIEW) Project: _____

_____

_____

DENR EIS REVIEW CRITERIA

"MUST" Criteria	Yes	No	Remarks
		✓	contractor/s will be alright.
• Process Documentation Report or minutes of public consultations	✓		Partial submission only
• Process Documentation or Transcript of the Public Hearing	✓		Partial submission only
• Brief Description of Role of Stakeholders in EIA Study	✓		Partial submission only
• MOA on Multi-partite monitoring team		✓	Template to be obtained from DENR and work out by MMDA
• Process Documentation Report of Conflict Resolution Processes		✓	To be provided by MMDA
• MOA on the Environmental Guarantee and Monitoring Fund		✓	Template to be obtained from DENR and work out by MMDAS
e) **Scoping Report**	✓		
f) **Other Maps (scale of 1:60,000) and Figures** (where applicable)[1]			
Land and Project-Related Maps			
• Topographic Map	✓		
• Physical Plan Map	✓		
• Site Development Map showing project site lay-out	✓		
• Process Flow Chart	✓		
• Drainage Map	✓		
• Slope Analysis Map	✓		
• Elevation Map	✓		
• Soils and Land Management Unit Map		✓	
• Soil Fertility Map			
• Land Use and Vegetation Map		✓	Only description and pictures of the site
• Existing and Projected Soil Erosion Map		✓	
• Existing and Projected Sheet Erosion Map		✓	
• Potential Sedimentation Source Map		✓	
• Laboratory Results of Soil Sample Analysis		✓	
Hazard and Geologic-Related Maps, Figures and other Annexes			
• Regional Geological Map	✓		
• General Geologic Map		✓	Not necessary
• Bathymetric and Morphostructural Map		✓	Not necessary
• Geomorphological Map		✓	Not necessary
• Bottom Cover Map		✓	Not necessary
• Earthquake Epicentral Distribution Map	✓		
• g factor Contour Map for Rocks		✓	

[1] To be able to determine what particular annexes (in the form of maps, tables, figures, studies, lab results, etc.) should be required for certain types of projects, the Receiving Staff should be someone who is familiar with the type of assessment requirements for each type of project. S/he should know the right questions to ask from the proponent or preparer given the type of project.

(PROCEDURAL REVIEW) Project: _____

DENR EIS REVIEW CRITERIA

"MUST" Criteria	Yes	No	Remarks
• g factor Contour Map for Medium Soils		✓	
• Hazard Zonation Maps		✓	Only description based on actual data
• Seismicity Maps		✓	Only computerized seismic risk is undertaken and tabular data presented
• Lava Flow Risk Map		✓	Not necessary
• Tsunami Risk Map		✓	Not necessary
• Landslide Risk Map		✓	Not necessary
• Differential Settling Hazard Map		✓	Not necessary
• Flood Frequency and Rating Curves		✓	Not necessary
• Sequence Stratigraphic Column of Rock Units		✓	Not necessary
• Geological Cross-Sections		✓	Not necessary
• Natural Hazard Map		✓	Not necessary
• Foundation Hazard Map		✓	Not necessary
• Detailed Bathymetric Map		✓	Not necessary
• Results of Petrographic and Mineragraphic Analyses		✓	Not necessary
• Results of Geochemical Analyses of Rock Samples		✓	Not necessary
• Paleontological Age Dating Results for Rock Samples		✓	Not necessary
• Grain Size Distribution Analysis		✓	Not necessary
Meteorologic and Oceanographic Maps, Figures and Tables			
• Monthly Average Rainfall of the Area	✓		
• Climatological Normals	✓		
• Climatological Extremes	✓		
• Wind Rose Diagrams		✓	Can be generated if required
• Net Evaporation Rates		✓	Not necessary
• Frequency of Tropical Cyclones	✓		
• Predicted Tides		✓	Not necessary
• 24-Hour Tidal Cycles		✓	Not necessary
• Bathymetry and Underwater Topography		✓	Not necessary
• Salinity and Temperature Regimes and Distribution			Not necessary
• Rainfall Means, Standard Deviation and Amount for a Monthly Period equalled or exceeded at given probability levels	✓		
• Characteristics of the Surface Current Flowing		✓	Not necessary
• Surface Current System		✓	Not necessary
Hydrologic Maps, Figures and Tables			
• Regional Hydrogeologic Map		✓	May be required (to be supplied by the Consultant)
• Mean Monthly Streamflow		✓	Not necessary
• Streamflow Measurements		✓	Not necessary
• Mean Monthly Flow Data		✓	Not necessary

(PROCEDURAL REVIEW) Project: _____

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_____

DENR EIS REVIEW CRITERIA

"MUST" Criteria	Yes	No	Remarks
• Flood Peaks and Volumes		✓	Not necessary
• Summary of Spring and Well Inventory		✓	Only discussion based on site inspection and interview with local people.
• Water Supply and Demand Projections		✓	Not necessary
• Flow Duration Analysis		✓	Not necessary
• Stormwater Flow Estimates	✓		
• Rainfall-Intensity-Duration-Frequency Data	✓		
Water Quality Assessment			
• Physico-Chemical Characteristics of Wells and Springs	✓		
• Physico-Chemical Characteristics of Coastal Waters		✓	Not applicable
• Water Quality of Surface Waters	✓		
• Water Quality of Coastal Waters		✓	Not applicable
• Bacteriological Characteristics of Wells and Springs	✓		
• Bacteriological Characteristics of Inland Surface Waters	✓		
• Bacteriological Characteristics of Coastal Waters		✓	Not applicable
• Laboratory Analysis Results of Physico-Chemical Examination		✓	Will be included in the final EIS
• Laboratory Analysis Results of Organic and Inorganic Non-Metallic Constituents		✓	Will be included in the final EIS
• Laboratory Analysis Results of Metallic Components		✓	Will be included in the final EIS
• Laboratory Results of Bacteriological Analyses		✓	Will be included in the final EIS
• Population of Planktonic and Benthic Algae		✓	Not applicable
• Benthic Fauna Population or Density of Benthic Organisms		✓	Not applicable
• Sampling Site Map	✓		
Air/Noise Quality Assessment			
• Result of Ambient Sulfur Dioxide Concentration	✓		
• Result of Particulate Matter Monitoring	✓		
• Noise Level Measurements	✓		
• Sampling Station Map	✓		
• Air Dispersion Modelling Diagrams	✓		Only tabular results.
Vegetation, Wildlife and Insect Profile			
• Flora and Fauna Species Inventory or Survey	✓		
• Summary of Endemicity	✓		
• Summary of Abundance, Frequency and Distribution	✓		
• Site Observation Map	✓		
• Sampling Plot Map		✓	Only pictures of the site
• Transect Walk		✓	Can be supplied if required
• Forest Stand and Stock Tables	✓		Partial description

(PROCEDURAL REVIEW) Project: _____

_____

_____

DENR EIS REVIEW CRITERIA

"MUST" Criteria	Yes	No	Remarks
• List of Identified Insects and other Arthropods Collected		✓	Not necessary
Coastal and Marine Environment Assessment			
• Densities of Seagrasses		✓	Not necessary
• Above-ground biomass of Seagrasses		✓	Not necessary
• Benthic Lifeform Cover		✓	Not necessary
• Abundance and Distribution of Hard/Soft Coral Genera		✓	Not necessary
• List of Fish Species		✓	Not necessary
• Estimated Biomass of Fish Species		✓	Not necessary
• Ranks and Proportion of Commercially and Non-commercially Important Indicator Species		✓	Not necessary
• Seabottom Cover Map showing coral & seagrass beds		✓	Not necessary
Socio-Economic and Cultural Environment			
• Settlement Map or Population Distribution Map		✓	New data not available
• Tenurial Change Map		✓	Not available
• Relocation site Map		✓	Necessary. To be supplied by MMDA
• Population to be Directly Affected by the Project	✓		Inventory only.
• Population by Barangay	✓		
• Population Growth Rate	✓		
• Number of Households and Household Size by Barangay	✓		
• Land Area and Population Density by Barangay	✓		
• Population by Sex Composition	✓		
• Literacy of Household Population	✓		
• Household Population by Highest Educational Attainment	✓		
• Household Population by Employment Status	✓		
• Leading Causes of Infant and Adult Mortality	✓		
• Leading Causes of Infant and Adult Morbidity	✓		
• Main Sources of Income	✓		
• Household Profile based on results of the Survey	✓		
• Public Perception Survey	✓		
Other Permits or Clearances (when applicable)			
• Presidential Proclamation (Exclusion of the area from NIPAS)		✓	To be supplied by MMDA
• LGU Locational Clearance and Zoning Viability		✓	To be obtained by MMDA
• DENR Permit to Cut		✓	To be obtained by MMDA
• NWRB Water Use Permit and Allocation		✓	Not necessary

ACTION TAKEN: (Please check to indicate corresponding action taken)

- ☐ EIS Document accepted
- ☐ EIS Document not accepted
  - ☐ minimum requirements not met
  - ☐ inadequate copies of EIS documents, additional _____ copies required
  - ☐ not within the jurisdiction of receiving office, please proceed to EMPAS, DENR Region ____

(PROCEDURAL REVIEW) Project: _____

_____

_____