APPENDIX B

Data Summary Tables – ISCO

TABLE B-1A

Volatile Organic Compounds, Area 1 Soil Samples, Zone A, Sample A1-MW-1-(14-15)

Formosa Pilot Treatability Study

ISCO

Location ID:	A1-MW-1												
Sample Depth (ft bgs):	(14-15)												
Sample Date:	3/11/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00073	U	0.00076	U	inc	0.00069	U	5	9	0.00072	U	1	inc
1,1,2,2-Tetrachloroethane	0.00086	U	0.00089	U	inc	0.00081	U	6	9	0.00085	U	1	inc
1,1,2-Trichloroethane	1.1	J	1.1	J	0	2.4		inc	inc	1.2		inc	50
1,1-Dichloroethane	0.56		0.65		inc	1.4		inc	inc	0.69		inc	51
1,1-Dichloroethene	0.016		0.0085		47	0.052		inc	inc	0.017		inc	67
1,2-Dichloroethane	160		180		inc	250		inc	inc	170		inc	32
1,2-Dichloropropane	0.0007	U	0.00073	U	inc	0.00066	U	6	10	0.00069	U	1	inc
2-Butanone (MEK)	0.0019	U	0.0019	U	0	0.0018	U	5	5	0.011		inc	inc
2-Hexanone	0.001	U	0.001	U	0	0.00094	U	6	6	0.00099	U	1	inc
4-Methyl-2-pentanone (MIBK)	0.0015	U	0.0015	U	0	0.0014	U	7	7	0.0014	U	7	0
Acetone	0.0016	U	0.036		inc	0.05		inc	inc	0.092		inc	inc
Benzene	0.074		0.04		46	0.49		inc	inc	0.14		inc	71
Bromodichloromethane	0.00066	U E	0.00068	U	inc	0.00061	U	8	10	0.0015	J	inc	inc
Bromoform	0.0014	U	0.0014	U	0	0.0013	U	7	7	0.0013	U	7	0
Bromomethane	0.00082	U	0.00085	U	inc	0.00077	U	6	9	0.00081	U	1	inc
Carbon disulfide	0.00055	U	0.00056	U	inc	0.00051	U	7	9	0.00054	U	2	inc
Carbon tetrachloride	0.0011	U	0.0012	U	inc	0.001	U	9	17	0.0011	U	0	inc
Chlorobenzene	0.006		0.003	J	50	0.009		inc	inc	0.0046	J	23	49
Chlorobromomethane	0.0018	U	0.0018	U	0	0.0017	U	6	6	0.0017	U	6	0
Chloroethane	0.0014	U	0.0014	U	0	0.0013	U	7	7	0.0014	U	0	inc
Chloroform	6.80		8.1	U	inc	14.0		inc	inc	7.9		inc	44
Chloromethane	0.0016	U	0.0017		inc	0.0015	U	6	12	0.0016	U	0	inc
cis-1,2-Dichloroethene	0.11		0.065		41	0.61		inc	inc	0.18		inc	70
cis-1,3-Dichloropropene	0.00054	U	0.00055	U	inc	0.0005	U	7	9	0.00053	U	2	inc
Dibromochloromethane	0.00093	U	0.00096	U	inc	0.00087	U	6	9	0.00092	U	1	inc
Ethylbenzene	0.001	U	0.001	J	0	0.0011	J	inc	inc	0.001	U	0	9
Methylene Chloride	0.065		0.048		26	0.15		inc	inc	0.098		inc	35
m-Xylene & p-Xylene	0.0015	U	0.0018	J	inc	0.0014	U	7	22	0.0015	U	0	inc
o-Xylene	0.0011	U	0.0012	U	inc	0.001	U	9	17	0.0011	U	0	inc
Styrene	0.0007	U	0.00073	U	inc	0.00066	U	6	10	0.00069	U	1	inc
Tetrachloroethene	0.083		0.049		41	0.42		inc	inc	0.2		inc	52
Toluene	0.0015	J	0.0026	J	inc	0.0025	J	inc	4	0.0014	U	7	44
trans-1,2-Dichloroethene	0.13		0.07		46	0.87		inc	inc	0.23		inc	74
trans-1,3-Dichloropropene	0.00058	U	0.00059	U	inc	0.00054	U	7	8	0.00057	U	2	inc
Trichloroethene	0.27		0.072		73	0.71		inc	inc	0.28		inc	61
Vinyl acetate	0.00092	U	0.00095	U	inc	0.00086	U	7	9	0.00091	U	1	inc
Vinyl chloride	0.079		0.032		59	0.65		inc	inc	0.091		inc	86
1,2-Dichloroethene, Total	0.24		0.14		42	1.5		inc	inc	0.0011	U	100	100
Xylenes, Total	0.0011	U	0.0018	J	inc	0.001	U	9	44	0.41		inc	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

E = result is greater than the UQL and the concentration is an estimated value

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-1B
Volatile Organic Compounds, Area 1 Soil Samples, Zone A, Sample A1-MW-1-(15-16)
Formosa Pilot Treatability Study
ISCO

Location ID:	A1-MW-1												
Sample Depth (ft bgs):	(15-16)												
Sample Date:	3/11/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00082	U	0.00083	U	inc	0.00066	U	20	20	0.0017	J	inc	inc
1,1,2,2-Tetrachloroethane	0.00097	U	0.00098	U	inc	0.00078	U	20	20	0.0019	U	inc	inc
1,1,2-Trichloroethane	1.2	J	1.3	J	inc	1.5	J	inc	inc	0.74	J	38	51
1,1-Dichloroethane	0.88		1.2		inc	0.71		19	41	0.46	J	48	35
1,1-Dichloroethene	0.015		0.037		inc	0.0065		57	82	0.065		inc	inc
1,2-Dichloroethane	250		210		16	210		16	0	140		44	33
1,2-Dichloropropane	0.00079	U	0.0008	U	inc	0.00063	U	20	21	0.0016	U	inc	inc
2-Butanone (MEK)	0.0021	U	0.0021	U	0	0.0096		inc	inc	0.014	J	inc	inc
2-Hexanone	0.0011	U	0.0011	U	0	0.0009	U	18	18	0.0022	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.0016	U	0.0016	U	0	0.0013	U	19	19	0.0032	U	inc	inc
Acetone	0.0018	U	0.021		inc	0.047		inc	inc	0.0036	U	inc	92
Benzene	0.33		0.13		61	0.024		93	82	0.2		39	inc
Bromodichloromethane	0.00073	U	0.00074	U	inc	0.00059	U	19	20	0.0034	J	inc	inc
Bromoform	0.0015	U	0.0015	U	0	0.0012	U	20	20	0.003	U	inc	inc
Bromomethane	0.00092	U	0.00093	U	inc	0.00074	U	20	20	0.0018	U	inc	inc
Carbon disulfide	0.00061	U	0.00062	U	inc	0.00049	U	20	21	0.0012	U	inc	inc
Carbon tetrachloride	0.0013	U	0.0013	U	0	0.001	U	23	23	0.0025	U	inc	inc
Chlorobenzene	0.0067		0.0072		inc	0.0017	J	75	76	0.01	J	inc	inc
Chlorobromomethane	0.002	U	0.002	U	0	0.0016	U	20	20	0.0039	U	inc	inc
Chloroethane	0.0016	U	0.0016	U	0	0.0012	U	25	25	0.0031	U	inc	inc
Chloroform	9.5		11		inc	8.2		14	25	6.1		36	26
Chloromethane	0.0018	U	0.0019	U	inc	0.0015	U	17	21	0.0036	U	inc	inc
cis-1,2-Dichloroethene	0.34		0.15		56	0.048		86	68	0.2		41	inc
cis-1,3-Dichloropropene	0.0006	U	0.00061	U	inc	0.00048	U	20	21	0.0012	U	inc	inc
Dibromochloromethane	0.001	U	0.0011	U	inc	0.00084	U	16	24	0.0021	U	inc	inc
Ethylbenzene	0.0011	U	0.0013	J	inc	0.00091	U	17	30	0.0022	U	inc	inc
Methylene Chloride	0.063		0.099		inc	0.051		19	48	0.11		inc	inc
m-Xylene & p-Xylene	0.0017	U	0.0017	U	0	0.0014	U	18	18	0.0033	U	inc	inc
o-Xylene	0.0013	U	0.0013	U	0	0.001	U	23	23	0.0025	U	inc	inc
Styrene	0.00079	U	0.0008	U	inc	0.00063	U	20	21	0.0016	U	inc	inc
Tetrachloroethene	0.37		0.14		62	0.051		86	64	0.31		16	inc
Toluene	0.0021	J	0.0031	J	inc	0.0017	J	19	45	0.003	U	inc	inc
trans-1,2-Dichloroethene	0.6		0.22		63	0.054		91	75	0.3		50	inc
trans-1,3-Dichloropropene	0.00064	U	0.00065	U	inc	0.00052	U	19	20	0.0013	U	inc	inc
Trichloroethene	0.53		0.19		64	0.062		88	67	0.32		40	inc
Vinyl acetate	0.001	U	0.001	U	0	0.00083	U	17	17	0.002	U	inc	inc
Vinyl chloride	0.072		0.18		inc	0.041		43	77	0.15		inc	inc
1,2-Dichloroethene, Total	0.94		0.37		61	0.1		89	73	0.5		47	inc
Xylenes, Total	0.0013	U	0.0013	U	0	0.001	U	23	23	0.0025	U	inc	inc

Notes:
1) Flags:
U = analyte was not detected at or above the SDL
J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-1C

Volatile Organic Compounds, Area 1 Soil Samples, Zone A, Sample A1-MW-2-(13-14)

Formosa Pilot Treatability Study

ISCO

Location ID:	A1-MW-2												
Sample Depth (ft bgs):	(13-14)												
Sample Date:	3/10/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00088	U	0.00079	U	10	0.033		inc	inc	0.00059	U	33	98
1,1,2,2-Tetrachloroethane	0.001	U	0.00093	U	7	0.00069	U	31	26	0.00070	U	30	inc
1,1,2-Trichloroethane	0.4	J	0.6	J	inc	0.58	J	inc	3	0.14		65	76
1,1-Dichloroethane	0.027		0.4		inc	0.067		inc	83	0.032		inc	52
1,1-Dichloroethene	0.0015	U	0.0062		inc	0.0015	J	0	76	0.0025	J	inc	inc
1,2-Dichloroethane	0.044		64		inc	49		inc	23	32		inc	35
1,2-Dichloropropane	0.00085	U	0.00076	U	11	0.00057	U	33	25	0.00057	U	33	0
2-Butanone (MEK)	0.0023	U	0.002	U	13	0.0015	U	35	25	0.004	J	inc	inc
2-Hexanone	0.0012	U	0.0011	U	8	0.0008	U	33	27	0.00081	U	33	inc
4-Methyl-2-pentanone (MIBK)	0.0018	U	0.0016	U	11	0.0012	U	33	25	0.00120	U	33	0
Acetone	0.002	U	0.0018	U	10	0.015		inc	inc	0.12		inc	inc
Benzene	0.0012	J	0.025		inc	0.0033	J	inc	87	0.0021	J	inc	36
Bromodichloromethane	0.00079	U	0.00071	U	10	0.00053	U	33	25	0.00053	U	33	0
Bromoform	0.0016	U	0.0015	U	6	0.0011	U	31	27	0.0011	U	31	0
Bromomethane	0.00099	U	0.00089	U	10	0.00066	U	33	26	0.00067	U	32	inc
Carbon disulfide	0.00066	U	0.00059	U	11	0.00044	U	33	25	0.00044	U	33	0
Carbon tetrachloride	0.0013	U	0.0012	U	8	0.0009	U	31	25	0.00091	U	30	inc
Chlorobenzene	0.0011	U	0.0015	J	inc	0.00076	U	31	49	0.00077	U	30	inc
Chlorobromomethane	0.0021	U	0.0019	U	10	0.0014	U	33	26	0.0014	U	33	0
Chloroethane	0.0017	U	0.0015	U	12	0.0011	U	35	27	0.0011	U	35	0
Chloroform	1.1		5.1		inc	3.6		inc	29	1.2		inc	67
Chloromethane	0.002	U	0.0018	U	10	0.0013	U	35	28	0.0013	U	35	0
cis-1,2-Dichloroethene	0.0035	J	0.035		inc	0.0073		inc	79	0.0054		inc	26
cis-1,3-Dichloropropene	0.00064	U	0.00058	U	9	0.00043	U	33	26	0.00043	U	33	0
Dibromochloromethane	0.0011	U	0.001	U	9	0.00075	U	32	25	0.00075	U	32	0
Ethylbenzene	0.0012	U	0.0011	U	8	0.00081	U	33	26	0.00082	U	32	inc
Methylene Chloride	0.0026	U	0.02		inc	0.0092		inc	54	0.0069	J	inc	25
m-Xylene & p-Xylene	0.0018	U	0.0016	U	11	0.0012	U	33	25	0.0012	U	33	0
o-Xylene	0.0013	U	0.0012	U	8	0.0009	U	31	25	0.00091	U	30	inc
Styrene	0.00085	U	0.00076	U	11	0.00057	U	33	25	0.00057	U	33	0
Tetrachloroethene	0.003	J	0.033		inc	0.013		inc	61	0.00630		inc	52
Toluene	0.0016	J	0.0024	J	inc	0.0011	U	31	54	0.00110	U	31	0
trans-1,2-Dichloroethene	0.0062		0.056		inc	0.014		inc	75	0.0083		inc	41
trans-1,3-Dichloropropene	0.00069	U	0.00062	U	10	0.00046	U	33	26	0.00046	U	33	0
Trichloroethene	0.0069		0.047		inc	0.014		inc	70	0.0083		inc	41
Vinyl acetate	0.0011	U	0.001	U	9	0.00074	U	33	26	0.00075	U	32	inc
Vinyl chloride	0.0011	U	0.021		inc	0.0046	J	inc	78	0.0092		inc	inc
1,2-Dichloroethene, Total	0.0097	J	0.091		inc	0.021		inc	77	0.014		inc	33
Xylenes, Total	0.0013	U	0.0012	U	8	0.0009	U	31	25	0.00091	U	30	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-1D
Volatile Organic Compounds, Area 1 Soil Samples, Zone A, Sample A1-MW-2-(16-17)
Formosa Pilot Treatability Study
ISCO

Location ID:	A1-MW-2												
Sample Depth (ft bgs):	(16-17)												
Sample Date:	3/10/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00076	U	0.00085	U	inc	0.00072	U	5	15	0.0034	J	inc	inc
1,1,2,2-Tetrachloroethane	0.00089	U	0.001	U	inc	0.00085	U	4	15	0.00082	U	8	4
1,1,2-Trichloroethane	0.92	J	0.77	J	16	0.66	J	28	14	0.69	J	25	inc
1,1-Dichloroethane	0.54		0.49		9	0.23	J	57	53	0.53		2	inc
1,1-Dichloroethene	0.003	J	0.0043	J	inc	0.027		inc	inc	0.017		inc	37
1,2-Dichloroethane	120		250		inc	110		8	56	120		0	inc
1,2-Dichloropropane	0.00072	U	0.00081	U	inc	0.00069	U	4	15	0.00067	U	7	3
2-Butanone (MEK)	0.0019	U	0.0022	U	inc	0.0019	U	0	14	0.0043	J	inc	inc
2-Hexanone	0.001	U	0.0012	U	inc	0.00098	U	2	18	0.00095	U	5	3
4-Methyl-2-pentanone (MIBK)	0.0015	U	0.0017	U	inc	0.0014	U	7	18	0.0014	U	7	0
Acetone	0.0017	U	0.0091	J	inc	0.0016	U	6	82	0.0016	U	6	0
Benzene	0.02		0.03		inc	0.075		inc	inc	0.05		inc	33
Bromodichloromethane	0.00067	U	0.00076	U	inc	0.00064	U	4	16	0.0011	J	inc	inc
Bromoform	0.0014	U	0.0016	U	inc	0.0013	U	7	19	0.0013	U	7	0
Bromomethane	0.00085	U	0.00095	U	inc	0.00081	U	5	15	0.00078	U	8	4
Carbon disulfide	0.00056	U	0.00063	U	inc	0.00054	U	4	14	0.00052	U	7	4
Carbon tetrachloride	0.0012	U	0.0013	U	inc	0.0011	U	8	15	0.0011	U	8	0
Chlorobenzene	0.0015	J	0.0017	J	inc	0.0034	J	inc	inc	0.0023	J	inc	32
Chlorobromomethane	0.0018	U	0.002	U	inc	0.0017	U	6	15	0.0017	U	6	0
Chloroethane	0.0014	U	0.0016	U	inc	0.0014	U	0	13	0.0013	U	7	7
Chloroform	6.6		6.3		5	3.3		50	48	6.8		inc	inc
Chloromethane	0.0017	U	0.0019	U	inc	0.0016	U	6	16	0.0016	U	6	0
cis-1,2-Dichloroethene	0.03		0.038		inc	0.09		inc	inc	0.066		inc	27
cis-1,3-Dichloropropene	0.00055	U	0.00062	U	inc	0.00053	U	4	15	0.00051	U	7	4
Dibromochloromethane	0.00096	U	0.0011	U	inc	0.00092	U	4	16	0.00089	U	7	3
Ethylbenzene	0.001	U	0.0012	J	inc	0.00099	U	1	18	0.00096	U	4	3
Methylene Chloride	0.019		0.021		inc	0.044		inc	inc	0.054		inc	inc
m-Xylene & p-Xylene	0.0016	U	0.0017	U	inc	0.0015	U	6	12	0.0014	U	13	7
o-Xylene	0.0012	U	0.0013	U	inc	0.0011	U	8	15	0.0011	U	8	0
Styrene	0.00072	U	0.00081	U	inc	0.00069	U	4	15	0.00067	U	7	3
Tetrachloroethene	0.018		0.025		inc	0.1		inc	inc	0.074		inc	26
Toluene	0.0014	U	0.0028	J	inc	0.0016	J	inc	43	0.0013	J	7	19
trans-1,2-Dichloroethene	0.037		0.045		inc	0.17		inc	inc	0.11		inc	35
trans-1,3-Dichloropropene	0.00059	U	0.00066	U	inc	0.00057	U	3	14	0.00055	U	7	4
Trichloroethene	0.34		0.041		88	0.14		59	inc	0.24		29	inc
Vinyl acetate	0.00095	U	0.0011	U	inc	0.00091	U	4	17	0.00088	U	7	3
Vinyl chloride	0.013		0.014		inc	0.11		inc	inc	0.08		inc	27
1,2-Dichloroethene, Total	0.067		0.083		inc	0.26		inc	inc	0.18		inc	31
Xylenes, Total	0.0012	U	0.0013	U	inc	0.0011	U	8	15	0.0011	U	8	0

Notes:
1) Flags:
U = analyte was not detected at or above the SDL
J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-1E

Volatile Organic Compounds, Area 1 Soil Samples, Zone A, Sample A1-MW-3-(13-14)

Formosa Pilot Treatability Study

ISCO

Location ID:	A1-MW-3												
Sample Depth (ft bgs):	(13-14)												
Sample Date:	3/10/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00077	U	0.00074	U	4	0.00071	U	8	4	0.00079	U	inc	inc
1,1,2,2-Tetrachloroethane	0.0009	U	0.00086	U	4	0.00084	U	7	2	0.00093	U	inc	inc
1,1,2-Trichloroethane	0.084		0.062		26	0.25	J	inc	inc	0.11		inc	56
1,1-Dichloroethane	0.03		0.047		inc	0.11		inc	inc	0.068		inc	38
1,1-Dichloroethene	0.0013	U	0.0023	J	inc	0.0044	J	inc	inc	0.0049	J	inc	inc
1,2-Dichloroethane	0.018		0.098		inc	15		inc	inc	45		inc	inc
1,2-Dichloropropane	0.00074	U	0.00071	U	4	0.00069	U	7	3	0.00076	U	inc	inc
2-Butanone (MEK)	0.002	U	0.0019	U	5	0.0018	U	10	5	0.0035	J	inc	inc
2-Hexanone	0.001	U	0.001	U	0	0.00097	U	3	3	0.0011	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.0015	U	0.0015	U	0	0.0014	U	7	7	0.0016	U	inc	inc
Acetone	0.0017	U	0.0016	U	6	0.019		inc	inc	0.0018	U	inc	91
Benzene	0.0008	J	0.0042	J	inc	0.0045	J	inc	inc	0.0076		inc	inc
Bromodichloromethane	0.00068	U	0.00066	U	3	0.00064	U	6	3	0.0007	U	inc	inc
Bromoform	0.0014	U	0.0014	U	0	0.0013	U	7	7	0.0015	U	inc	inc
Bromomethane	0.00086	U	0.00082	U	5	0.0008	U	7	2	0.00088	U	inc	inc
Carbon disulfide	0.00057	U	0.00055	U	4	0.00053	U	7	4	0.00059	U	inc	inc
Carbon tetrachloride	0.0012	U	0.0011	U	8	0.0011	U	8	0	0.0012	U	0	inc
Chlorobenzene	0.00099	U	0.00095	U	4	0.00093	U	6	2	0.001	U	inc	inc
Chlorobromomethane	0.0018	U	0.0018	U	0	0.0017	U	6	6	0.0019	U	inc	inc
Chloroethane	0.0015	U	0.0014	U	7	0.0014	U	7	0	0.0015	U	0	inc
Chloroform	0.97		2		inc	3.1		inc	inc	4.8		inc	inc
Chloromethane	0.0017	U	0.0016	U	6	0.0016	U	6	0	0.0018	U	inc	inc
cis-1,2-Dichloroethene	0.0075		0.015		inc	0.031		inc	inc	0.026		inc	16
cis-1,3-Dichloropropene	0.00056	U	0.00054	U	4	0.00052	U	7	4	0.00058	U	inc	inc
Dibromochloromethane	0.00097	U	0.00093	U	4	0.00091	U	6	2	0.001	U	inc	inc
Ethylbenzene	0.0011	U	0.001	U	9	0.001	J	9	0	0.0011	U	0	inc
Methylene Chloride	0.0023	U	0.0022	U	4	0.011		inc	inc	0.0089	J	inc	19
m-Xylene & p-Xylene	0.0016	U	0.0015	U	6	0.0015	U	6	0	0.0016	U	0	inc
o-Xylene	0.0012	U	0.0011	U	8	0.0011	U	8	0	0.0012	U	0	inc
Styrene	0.00074	U	0.00071	U	4	0.00069	U	7	3	0.00076	U	inc	inc
Tetrachloroethene	0.004	J	0.0096		inc	0.024		inc	inc	0.016		inc	33
Toluene	0.0014	U	0.0023	J	inc	0.0024	J	inc	inc	0.0016	J	inc	33
trans-1,2-Dichloroethene	0.022		0.051		inc	0.074		inc	inc	0.06		inc	19
trans-1,3-Dichloropropene	0.0006	U	0.00058	U	3	0.00056	U	7	3	0.00062	U	inc	inc
Trichloroethene	0.014		0.028		inc	0.053		inc	inc	0.037		inc	30
Vinyl acetate	0.00096	U	0.00092	U	4	0.0009	U	6	2	0.00099	U	inc	inc
Vinyl chloride	0.00093	U	0.0035	J	inc	0.0076	J	inc	inc	0.024		inc	inc
1,2-Dichloroethene, Total	0.03		0.066		inc	0.11		inc	inc	0.086		inc	22
Xylenes, Total	0.0012	U	0.0011	U	8	0.0011	U	8	0	0.0012	U	0	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-1F
Volatile Organic Compounds, Area 1 Soil Samples, Zone A, Sample A1-MW-3-(16-17)
Formosa Pilot Treatability Study
ISCO

Location ID:	A1-MW-3												
Sample Depth (ft bgs):	(16-17)												
Sample Date:	3/10/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00074	U	0.00079	U	inc	0.0007	U	5	11	0.00085	U	inc	inc
1,1,2,2-Tetrachloroethane	0.00087	U	0.00093	U	inc	0.00083	U	5	11	0.00099	U	inc	inc
1,1,2-Trichloroethane	0.29	J	0.054		81	0.44	J	inc	inc	0.13		55	70
1,1-Dichloroethane	0.081		0.049		40	0.25		inc	inc	0.1		inc	60
1,1-Dichloroethene	0.0045	J	0.0041	J	9	0.0079		inc	inc	0.012		inc	inc
1,2-Dichloroethane	53		13		75	70		inc	inc	65		inc	7
1,2-Dichloropropane	0.00071	U	0.00076	U	inc	0.00068	U	4	11	0.00081	U	inc	inc
2-Butanone (MEK)	0.0019	U	0.002	U	inc	0.0018	U	5	10	0.004	J	inc	inc
2-Hexanone	0.001	U	0.0011	U	inc	0.00096	U	4	13	0.0012	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.0015	U	0.0016	U	inc	0.0014	U	7	13	0.0017	U	inc	inc
Acetone	0.0017	U	0.03		inc	0.0063	J	inc	79	0.0019	U	inc	70
Benzene	0.031		0.014		55	0.032		inc	inc	0.028		10	13
Bromodichloromethane	0.00066	U	0.00071	U	inc	0.00063	U	5	11	0.00075	U	inc	inc
Bromoform	0.0014	U	0.0015	U	inc	0.0013	U	7	13	0.0016	U	inc	inc
Bromomethane	0.00083	U	0.00089	U	inc	0.00079	U	5	11	0.00095	U	inc	inc
Carbon disulfide	0.00055	U	0.00059	U	inc	0.00052	U	5	12	0.00063	U	inc	inc
Carbon tetrachloride	0.0011	U	0.0012	U	inc	0.0011	U	0	8	0.0013	U	inc	inc
Chlorobenzene	0.0015	J	0.001	U	33	0.0012	J	20	inc	0.0011	U	27	8
Chlorobromomethane	0.0018	U	0.0019	U	inc	0.0017	U	6	11	0.002	U	inc	inc
Chloroethane	0.0014	U	0.0015	U	inc	0.0013	U	7	13	0.0016	U	inc	inc
Chloroform	3.7		2.2		41	4.4		inc	inc	5.1		inc	inc
Chloromethane	0.0017	U	0.0018	U	inc	0.0016	U	6	11	0.0019	U	inc	inc
cis-1,2-Dichloroethene	0.041		0.019		54	0.042		inc	inc	0.044		inc	inc
cis-1,3-Dichloropropene	0.00054	U	0.00058	U	inc	0.00051	U	6	12	0.00062	U	inc	inc
Dibromochloromethane	0.00094	U	0.001	U	inc	0.00089	U	5	11	0.0011	U	inc	inc
Ethylbenzene	0.001	U	0.0011	U	inc	0.00097	U	3	12	0.0012	U	inc	inc
Methylene Chloride	0.017		0.0041	J	76	0.016		6	inc	0.014		18	13
m-Xylene & p-Xylene	0.0015	U	0.0016	U	inc	0.0014	U	7	13	0.0017	U	inc	inc
o-Xylene	0.0011	U	0.0012	U	inc	0.0011	U	0	8	0.0013	U	inc	inc
Styrene	0.00071	U	0.00076	U	inc	0.00068	U	4	11	0.00081	U	inc	inc
Tetrachloroethene	0.024		0.018		25	0.026		inc	inc	0.03		inc	inc
Toluene	0.0014	U	0.0023	J	inc	0.0021	J	inc	9	0.0021	J	inc	0
trans-1,2-Dichloroethene	0.072		0.056		22	0.071		1	inc	0.11		inc	inc
trans-1,3-Dichloropropene	0.00058	U	0.00062	U	inc	0.00055	U	5	11	0.00066	U	inc	inc
Trichloroethene	0.047		0.03		36	0.049		inc	inc	0.065		inc	inc
Vinyl acetate	0.00093	U	0.001	U	inc	0.00088	U	5	12	0.0011	U	inc	inc
Vinyl chloride	0.023		0.018		22	0.031		inc	inc	0.068		inc	inc
1,2-Dichloroethene, Total	0.11		0.075		32	0.11		0	inc	0.15		inc	inc
Xylenes, Total	0.0011	U	0.0012	U	inc	0.0011	U	0	8	0.0013	U	inc	inc

Notes:
1) Flags:
U = analyte was not detected at or above the SDL
J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-2A

Volatile Organic Compounds, Area 1 Soil Samples, Zone B, Sample A1-MW-1-(39-40)

Formosa Pilot Treatability Study

ISCO

Location ID:	A1-MW-1												
Sample Depth (ft bgs):	(39-40)												
Sample Date:	3/13/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00071	U	0.00087	U	inc	0.00088	U	inc	inc	0.0046		inc	inc
1,1,2,2-Tetrachloroethane	0.00084	U	0.001	U	inc	0.001	U	inc	0	0.00072	U	14	28
1,1,2-Trichloroethane	0.51	J	0.99	J	inc	2.1	J	inc	inc	1.4	J	inc	33
1,1-Dichloroethane	0.12		0.11		8	1.3		inc	inc	1.2		inc	8
1,1-Dichloroethene	0.03		0.011		63	0.14		inc	inc	0.05		inc	64
1,2-Dichloroethane	65		130		inc	330		inc	inc	290		inc	12
1,2-Dichloropropane	0.00069	U	0.00084	U	inc	0.00084	U	inc	0	0.00065	J	6	23
2-Butanone (MEK)	0.0018	U	0.0022	U	inc	0.0023	U	inc	inc	0.0044	J	inc	inc
2-Hexanone	0.00097	U	0.0012	U	inc	0.0012	U	inc	0	0.00083	U	14	31
4-Methyl-2-pentanone (MIBK)	0.0014	U	0.0017	U	inc	0.0017	U	inc	0	0.015		inc	inc
Acetone	0.0016	U	0.002	U	inc	0.0042	J	inc	inc	0.017		inc	inc
Benzene	0.051		0.038		25	0.47		inc	inc	0.086		inc	82
Bromodichloromethane	0.00064	U	0.00078	U	inc	0.00078	U	inc	0	0.0016	J	inc	inc
Bromoform	0.0013	U	0.0016	U	inc	0.0016	U	inc	0	0.0011	U	15	31
Bromomethane	0.0008	U	0.00098	U	inc	0.00098	U	inc	0	0.00069	U	14	30
Carbon disulfide	0.00053	U	0.00065	U	inc	0.00065	U	inc	0	0.0062	J	inc	inc
Carbon tetrachloride	0.0011	U	0.0013	U	inc	0.0013	U	inc	0	0.00093	U	15	28
Chlorobenzene	0.0027	J	0.0019	J	30	0.0067		inc	inc	0.0029	J	inc	57
Chlorobromomethane	0.0017	U	0.0021	U	inc	0.0021	U	inc	0	0.0015	U	12	29
Chloroethane	0.0014	U	0.0017	U	inc	0.0017	U	inc	0	0.0012	U	14	29
Chloroform	2.6		6.8		inc	14		inc	inc	13		inc	7
Chloromethane	0.0016	U	0.002	U	inc	0.002	U	inc	0	0.0014	U	13	30
cis-1,2-Dichloroethene	0.068		0.046		32	0.61		inc	inc	0.11		inc	82
cis-1,3-Dichloropropene	0.00052	U	0.00064	U	inc	0.00064	U	inc	0	0.00045	U	13	30
Dibromochloromethane	0.00091	U	0.0011	U	inc	0.0011	U	inc	0	0.00078	U	14	29
Ethylbenzene	0.00098	U	0.0012	U	inc	0.0012	U	inc	0	0.00084	U	14	30
Methylene Chloride	0.019	B	0.019		0	0.072		inc	inc	0.043		inc	40
m-Xylene & p-Xylene	0.0015	U	0.0018	U	inc	0.0018	U	inc	0	0.0013	U	13	28
o-Xylene	0.0011	U	0.0013	U	inc	0.0013	U	inc	0	0.00093	U	15	28
Styrene	0.00069	U	0.00084	U	inc	0.00084	U	inc	0	0.00059	U	14	30
Tetrachloroethene	0.051		0.039		24	0.37		inc	inc	0.074		inc	80
Toluene	0.0017	J	0.0024	J	inc	0.0016	U	6	33	0.0013	J	24	19
trans-1,2-Dichloroethene	0.052		0.072		inc	0.69		inc	inc	0.12		inc	83
trans-1,3-Dichloropropene	0.00056	U	0.00069	U	inc	0.00069	U	inc	0	0.00048	U	14	30
Trichloroethene	0.08		0.059		26	0.65	U	inc	inc	0.63		inc	3
Vinyl acetate	0.0009	U	0.0011	U	inc	0.0011		inc	0	0.00077	U	14	30
Vinyl chloride	0.045		0.033		27	0.43	J	inc	inc	0.099		inc	77
1,2-Dichloroethene, Total	0.12		0.12		0	1.3		inc	inc	0.23		inc	82
Xylenes, Total	0.0011	U	0.0013	U	inc	0.0013	U	inc	0	0.00093	U	15	28

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and the sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-2B

Volatile Organic Compounds, Area 1 Soil Samples, Zone B, Sample A1-MW-1-(40-41)

Formosa Pilot Treatability Study

ISCO

Location ID:	A1-MW-1												
Sample Depth (ft bgs):	(40-41												
Sample Date:	3/13/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.001	U	0.00074	U	26	0.00069	U	31	7	0.0024	J	inc	inc
1,1,2,2-Tetrachloroethane	0.0012	U	0.00087	U	28	0.00081	U	33	7	0.00075	U	38	7
1,1,2-Trichloroethane	0.38	J	0.15		61	2		inc	inc	1.4	J	inc	30
1,1-Dichloroethane	0.31		0.076		75	1.2		inc	inc	1.2		inc	0
1,1-Dichloroethene	0.0071		0.015		inc	0.099		inc	inc	0.07		inc	29
1,2-Dichloroethane	66		57		14	320		inc	inc	260		inc	19
1,2-Dichloropropane	0.001	U	0.00071	U	29	0.00066	U	34	7	0.00062	J	38	6
2-Butanone (MEK)	0.0027	U	0.0019	U	30	0.0018	U	33	5	0.0066	J	inc	inc
2-Hexanone	0.0014	U	0.001	U	29	0.00094	U	33	6	0.00087	U	38	7
4-Methyl-2-pentanone (MIBK)	0.0021	U	0.0015	U	29	0.0014	U	33	7	0.0013	U	38	7
Acetone	0.0024	U	0.0017	U	29	0.018		inc	inc	0.0014	U	42	92
Benzene	0.02		0.026		inc	0.4		inc	inc	0.37		inc	8
Bromodichloromethane	0.00093	U	0.00066	U	29	0.00061	U	34	8	0.0018	J	inc	inc
Bromoform	0.0019	U	0.0014	U	26	0.0013	U	32	7	0.0012	U	37	8
Bromomethane	0.0012	U	0.00083	U	31	0.00077	U	36	7	0.00071	U	41	8
Carbon disulfide	0.00078	U	0.00055	U	29	0.00051	U	35	7	0.0011	J	inc	inc
Carbon tetrachloride	0.0016	U	0.0011	U	31	0.001	U	38	9	0.0016	J	0	inc
Chlorobenzene	0.0014	U	0.00096	U	31	0.0051		inc	inc	0.004	J	inc	22
Chlorobromomethane	0.0025	U	0.0018	U	28	0.0017	U	32	6	0.0015	U	40	12
Chloroethane	0.002	U	0.0014	U	30	0.0013	U	35	7	0.0012	U	40	8
Chloroform	3.8		3.5		8	14		inc	inc	10		inc	29
Chloromethane	0.0024	U	0.0017	U	29	0.0015	U	38	12	0.0014	U	42	7
cis-1,2-Dichloroethene	0.03		0.035		inc	0.54		inc	inc	0.42		inc	22
cis-1,3-Dichloropropene	0.00076	U	0.00054	U	29	0.0005	U	34	7	0.00046	U	39	8
Dibromochloromethane	0.0013	U	0.00094	U	28	0.00087	U	33	7	0.00081	U	38	7
Ethylbenzene	0.0014	U	0.001	U	29	0.00095	U	32	5	0.00088	U	37	7
Methylene Chloride	0.014	B	0.006	J	57	0.074		inc	inc	0.043		inc	42
m-Xylene & p-Xylene	0.0022	U	0.0015	U	32	0.0014	U	36	7	0.0013	U	41	7
o-Xylene	0.0016	U	0.0011	U	31	0.001	U	38	9	0.00097	U	39	3
Styrene	0.001	U	0.00071	U	29	0.00066	U	34	7	0.00061	U	39	8
Tetrachloroethene	0.017		0.023		inc	0.35		inc	inc	0.37		inc	inc
Toluene	0.002	U	0.0015	J	25	0.0013	U	35	13	0.0013	J	35	0
trans-1,2-Dichloroethene	0.02		0.058		inc	0.6		inc	inc	0.53		inc	12
trans-1,3-Dichloropropene	0.00082	U	0.00058	U	29	0.00054	U	34	7	0.0005	U	39	7
Trichloroethene	0.029		0.042		inc	0.55		inc	inc	0.64		inc	inc
Vinyl acetate	0.0013	U	0.00093	U	28	0.00086	U	34	8	0.0008	U	38	7
Vinyl chloride	0.0091	J	0.026		inc	0.14		inc	inc	0.13		inc	7
1,2-Dichloroethene, Total	0.05		0.093		inc	1.1		inc	inc	0.95		inc	14
Xylenes, Total	0.0016	U	0.0011	U	31	0.001	U	38	9	0.00097	U	39	3

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-2C

Volatile Organic Compounds, Area 1 Soil Samples, Zone B, Sample A1-MW-2-(40-41)

Formosa Pilot Treatability Study

ISCO

Location ID:	A1-MW-2												
Sample Depth (ft bgs):	(40-41)												
Sample Date:	3/13/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00074	U	0.00082	U	inc	0.00069	U	7	16	0.00069	U	7	0
1,1,2,2-Tetrachloroethane	0.00087	U	0.00096	U	inc	0.00081	U	7	16	0.00082	U	6	inc
1,1,2-Trichloroethane	0.096		0.28	J	inc	0.017	J	82	94	0.15		inc	inc
1,1-Dichloroethane	0.033		0.092		inc	0.0044	J	87	95	0.025		24	inc
1,1-Dichloroethene	0.015		0.041		inc	0.0011	U	93	97	0.0069		54	inc
1,2-Dichloroethane	31		44		inc	2.3		93	95	40		inc	inc
1,2-Dichloropropane	0.00071	U	0.00079	U	inc	0.00066	U	7	16	0.00067	U	6	inc
2-Butanone (MEK)	0.0019	U	0.0021	U	inc	0.0018	U	5	14	0.0053	J	inc	inc
2-Hexanone	0.001	U	0.0011	U	inc	0.00094	U	6	15	0.00095	U	5	inc
4-Methyl-2-pentanone (MIBK)	0.0015	U	0.0016	U	inc	0.0014	U	7	13	0.0014	U	7	0
Acetone	0.0017	U	0.0018	U	inc	0.027		inc	inc	0.0016	U	6	94
Benzene	0.019		0.05		inc	0.0028	J	85	94	0.013		32	inc
Bromodichloromethane	0.00066	U	0.00073	U	inc	0.00062	U	6	15	0.00062	U	6	0
Bromoform	0.0014	U	0.0015	U	inc	0.0013	U	7	13	0.0013	U	7	0
Bromomethane	0.00083	U	0.00092	U	inc	0.00077	U	7	16	0.00078	U	6	inc
Carbon disulfide	0.00055	U	0.00061	U	inc	0.00051	U	7	16	0.00052	U	5	inc
Carbon tetrachloride	0.0011	U	0.0013	U	inc	0.0011	U	0	15	0.0011	U	0	0
Chlorobenzene	0.00096	U	0.0021	J	inc	0.0009	U	6	57	0.0009	U	6	0
Chlorobromomethane	0.0018	U	0.002	U	inc	0.0017	U	6	15	0.0017	U	6	0
Chloroethane	0.0014	U	0.0015	U	inc	0.0013	U	7	13	0.0013	U	7	0
Chloroform	0.74		1.6		inc	0.041		94	97	0.75		inc	inc
Chloromethane	0.0017	U	0.0018	U	inc	0.0015	U	12	17	0.0016	U	6	inc
cis-1,2-Dichloroethene	0.021		0.056		inc	0.0018	J	91	97	0.017		19	inc
cis-1,3-Dichloropropene	0.00054	U	0.0006	U	inc	0.0005	U	7	17	0.00051	U	6	inc
Dibromochloromethane	0.00094	U	0.001	U	inc	0.00088	U	6	12	0.00088	U	6	0
Ethylbenzene	0.001	U	0.0011	U	inc	0.00095	U	5	14	0.00096	U	4	inc
Methylene Chloride	0.0049	J B	0.0028	J	43	0.002	U	59	29	0.0021	U	57	inc
m-Xylene & p-Xylene	0.0015	U	0.0017	U	inc	0.0014	U	7	18	0.0014	U	7	0
o-Xylene	0.0011	U	0.0013	U	inc	0.0011	U	0	15	0.0011	U	0	0
Styrene	0.00071	U	0.00079	U	inc	0.00066	U	7	16	0.00067	U	6	inc
Tetrachloroethene	0.017		0.054		inc	0.0025	J	85	95	0.0079		54	inc
Toluene	0.0014	U	0.0018	J	inc	0.0015	J	inc	17	0.0013	U	7	13
trans-1,2-Dichloroethene	0.022		0.057		inc	0.0018	J	92	97	0.011		50	inc
trans-1,3-Dichloropropene	0.00058	U	0.00064	U	inc	0.00054	U	7	16	0.00054	U	7	0
Trichloroethene	0.034		0.088		inc	0.0033	J	90	96	0.018		47	inc
Vinyl acetate	0.00093	U	0.001	U	inc	0.00087	U	6	13	0.00087	U	6	0
Vinyl chloride	0.016		0.038		inc	0.00084	U	95	98	0.0024	J	85	inc
1,2-Dichloroethene, Total	0.043		0.11		inc	0.0036	J	92	97	0.028		35	inc
Xylenes, Total	0.0011	U	0.0013	U	inc	0.0011	U	0	15	0.0011	U	0	0

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and the sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-2D

Volatile Organic Compounds, Area 1 Soil Samples, Zone B, Sample A1-MW-2-(41-42)

Formosa Pilot Treatability Study

ISCO

Location ID:	A1-MW-2												
Sample Depth (ft bgs):	(41-42)												
Sample Date:	3/13/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00077	U	0.00077	U	0	0.00072	U	6	6	0.0027	J	inc	inc
1,1,2,2-Tetrachloroethane	0.00091	U	0.00091	U	0	0.00085	U	7	7	0.0012	U	inc	inc
1,1,2-Trichloroethane	0.063		0.18		inc	1.7		inc	inc	1.6		inc	6
1,1-Dichloroethane	0.017		0.054		inc	0.83		inc	inc	1		inc	inc
1,1-Dichloroethene	0.0078		0.02		inc	0.087		inc	inc	0.11		inc	inc
1,2-Dichloroethane	8.7		34		inc	250		inc	inc	390		inc	inc
1,2-Dichloropropane	0.00074	U	0.00074	U	0	0.00069	U	7	7	0.00098	U	inc	inc
2-Butanone (MEK)	0.002	U	0.002	U	0	0.0019	U	5	5	0.0044	J	inc	inc
2-Hexanone	0.0011	U	0.0011	U	0	0.00099	U	10	10	0.0014	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.0015	U	0.0015	U	0	0.0014	U	7	7	0.002	U	inc	inc
Acetone	0.0017	U	0.0017	U	0	0.0042	J	inc	inc	0.013	J	inc	inc
Benzene	0.013		0.031		inc	0.17		inc	inc	0.51		inc	inc
Bromodichloromethane	0.00069	U	0.00069	U	0	0.00065	U	6	6	0.0021	J	inc	inc
Bromoform	0.0014	U	0.0014	U	0	0.0013	U	7	7	0.0019	U	inc	inc
Bromomethane	0.00087	U	0.00087	U	0	0.00081	U	7	7	0.0011	U	inc	inc
Carbon disulfide	0.00058	U	0.00058	U	0	0.00054	U	7	7	0.00076	U	inc	inc
Carbon tetrachloride	0.0012	J	0.0012	U	0	0.05		inc	inc	0.0016	U	inc	97
Chlorobenzene	0.001	U	0.0013	J	inc	0.0058		inc	inc	0.0042	J	inc	28
Chlorobromomethane	0.0019	U	0.0019	U	0	0.0017	U	11	11	0.0025	U	inc	inc
Chloroethane	0.0015	U	0.0015	U	0	0.0014	U	7	7	0.0019	U	inc	inc
Chloroform	0.44		1.3		inc	7.7		inc	inc	9.4		inc	inc
Chloromethane	0.0017	U	0.0017	U	0	0.0016	U	6	6	0.0023	U	inc	inc
cis-1,2-Dichloroethene	0.012		0.034		inc	0.39		inc	inc	0.53		inc	inc
cis-1,3-Dichloropropene	0.00056	U	0.00056	U	0	0.00053	U	5	5	0.00075	U	inc	inc
Dibromochloromethane	0.00098	U	0.00098	U	0	0.00092	U	6	6	0.0013	U	inc	inc
Ethylbenzene	0.0011	U	0.0011	U	0	0.001	U	9	9	0.0014	U	inc	inc
Methylene Chloride	0.0034	J B	0.0023	U	32	0.0021	U	38	9	0.0086	J	inc	inc
m-Xylene & p-Xylene	0.0016	U	0.0016	U	0	0.0015	U	6	6	0.0021	U	inc	inc
o-Xylene	0.0012	U	0.0012	U	0	0.0011	U	8	8	0.0016	U	inc	inc
Styrene	0.00074	U	0.00074	U	0	0.00069	U	7	7	0.00098	U	inc	inc
Tetrachloroethene	0.012		0.029		inc	0.43		inc	inc	0.54		inc	inc
Toluene	0.0017	J	0.0019	J	inc	0.0014	J	18	26	0.0019	U	inc	inc
trans-1,2-Dichloroethene	0.013		0.033		inc	0.5		inc	inc	0.49		inc	2
trans-1,3-Dichloropropene	0.00061	U	0.00061	U	0	0.00057	U	7	7	0.0008	U	inc	inc
Trichloroethene	0.025		0.051		inc	0.71		inc	inc	0.8		inc	inc
Vinyl acetate	0.00097	U	0.00097	U	0	0.00091	U	6	6	0.0013	U	inc	inc
Vinyl chloride	0.0057	J	0.019		inc			100	100	0.14		inc	inc
1,2-Dichloroethene, Total	0.025		0.067		inc	0.89		inc	inc	1		inc	inc
Xylenes, Total	0.0012	U	0.0012	U	0	0.0011	U	8	8	0.0016	U	inc	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-2E

Volatile Organic Compounds, Area 1 Soil Samples, Zone B, Sample A1-MW-3-(40-41)

Formosa Pilot Treatability Study

ISCO

Location ID:	A1-MW-3												
Sample Depth (ft bgs):	(40-41)												
Sample Date:	3/13/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00079	U	0.0008	U	inc	0.00094	U	inc	inc	0.00092	U	inc	2
1,1,2,2-Tetrachloroethane	0.00093	U	0.00094	U	inc	0.0011	U	inc	inc	0.0011	U	inc	0
1,1,2-Trichloroethane	0.51	J	1.2	J	inc	0.078		85	94	0.058		89	26
1,1-Dichloroethane	0.31		0.12		61	0.032		90	73	0.018		94	44
1,1-Dichloroethene	0.035		0.041		inc	0.017		51	59	0.0069		80	59
1,2-Dichloroethane	120		100		17	17		86	83	6		95	65
1,2-Dichloropropane	0.00076	U	0.00076	U	0	0.0009	U	inc	inc	0.00089	U	inc	1
2-Butanone (MEK)	0.002	U	0.002	U	0	0.0024	U	inc	inc	0.0066	J	inc	inc
2-Hexanone	0.0011	U	0.0011	U	0	0.0013	U	inc	inc	0.0013	U	inc	0
4-Methyl-2-pentanone (MIBK)	0.0016	U	0.0016	U	0	0.0019	U	inc	inc	0.0018	U	inc	5
Acetone	0.0018	U	0.0018	U	0	0.0021	U	inc	inc	0.0021	U	inc	0
Benzene	0.053		0.091		inc	0.021		60	77	0.0067		87	68
Bromodichloromethane	0.00071	U	0.00071	U	0	0.00084	U	inc	inc	0.00082	U	inc	2
Bromoform	0.0015	U	0.0015	U	0	0.0017	U	inc	inc	0.0017	U	inc	0
Bromomethane	0.00089	U	0.00089	U	0	0.0011	U	inc	inc	0.001	U	inc	9
Carbon disulfide	0.00059	U	0.00059	U	0	0.0007	U	inc	inc	0.00069	U	inc	1
Carbon tetrachloride	0.0012	U	0.0012	U	0	0.0014	U	inc	inc	0.0014	U	inc	0
Chlorobenzene	0.0026	J	0.005	J	inc	0.0012	U	54	76	0.0012	U	54	0
Chlorobromomethane	0.0019	U	0.0019	U	0	0.0023	U	inc	inc	0.0022	U	inc	4
Chloroethane	0.0015	U	0.0015	U	0	0.0018	U	inc	inc	0.0017	U	inc	6
Chloroform	2.7		4.5		inc	0.71		74	84	0.4		85	44
Chloromethane	0.0018	U	0.0018	U	0	0.0021	U	inc	inc	0.0021	U	inc	0
cis-1,2-Dichloroethene	0.069		0.057		17	0.017		75	70	0.0078		89	54
cis-1,3-Dichloropropene	0.00058	U	0.00058	U	0	0.00069	U	inc	inc	0.00067	U	inc	3
Dibromochloromethane	0.001	U	0.001	U	0	0.0012	U	inc	inc	0.0012	U	inc	0
Ethylbenzene	0.0011	U	0.0011	U	0	0.0013	U	inc	inc	0.0013	U	inc	0
Methylene Chloride	0.011	B	0.0096	J	13	0.0028	U	75	71	0.0027	U	75	4
m-Xylene & p-Xylene	0.0016	U	0.0016	U	0	0.0019	U	inc	inc	0.0019	U	inc	0
o-Xylene	0.0012	U	0.0012	U	0	0.0014	U	inc	inc	0.0014	U	inc	0
Styrene	0.00076	U	0.00076	U	0	0.0009	U	inc	inc	0.00089	U	inc	1
Tetrachloroethene	0.058		0.16		inc	0.023		60	86	0.014		76	39
Toluene	0.0015	U	0.0024	J	inc	0.0018	U	inc	25	0.0017	U	inc	6
trans-1,2-Dichloroethene	0.058		0.083		inc	0.023		60	72	0.013		78	43
trans-1,3-Dichloropropene	0.00062	U	0.00062	U	0	0.00074	U	inc	inc	0.00072	U	inc	3
Trichloroethene	0.28		0.21		25	0.044		84	79	0.028		90	36
Vinyl acetate	0.001	U	0.001	U	0	0.0012	U	inc	inc	0.0012	U	inc	0
Vinyl chloride	0.04		0.015		63	0.0098	J	76	35	0.0058	J	86	41
1,2-Dichloroethene, Total	0.13		0.14		inc	0.04		69	71	0.021		84	48
Xylenes, Total	0.0012	U	0.0012	U	0	0.0014	U	inc	inc	0.0014	U	inc	0

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and the sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-2F
Volatile Organic Compounds, Area 1 Soil Samples, Zone B, Sample A1-MW-3-(41-42)
Formosa Pilot Treatability Study
ISCO

Location ID:	A1-MW-3												
Sample Depth (ft bgs):	(41-42)												
Sample Date:	3/13/2014		3/31/2014			4/22/2014				5/13/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00086	U	0.00085	U	1	0.00065	U	24	24	0.00065	U	24	0
1,1,2,2-Tetrachloroethane	0.001	U	0.001	U	0	0.00077	U	23	23	0.00077	U	23	0
1,1,2-Trichloroethane	0.13		0.74	J	inc	0.17		inc	77	0.073		44	57
1,1-Dichloroethane	0.037		0.32		inc	0.053		inc	83	0.024		35	55
1,1-Dichloroethene	0.015		0.0014	U	91	0.023		inc	inc	0.0094		37	59
1,2-Dichloroethane	14		59		inc	18		inc	69	13		7	28
1,2-Dichloropropane	0.00082	U	0.00082	U	0	0.00063	U	23	23	0.00063	U	23	0
2-Butanone (MEK)	0.0022	U	0.0022	U	0	0.0017	U	23	23	0.0049	J	inc	inc
2-Hexanone	0.0012	U	0.0012	U	0	0.00089	U	26	26	0.00089	U	26	0
4-Methyl-2-pentanone (MIBK)	0.0017	U	0.0017	U	0	0.0013	U	24	24	0.0013	U	24	0
Acetone	0.0019	U	0.015		inc	0.0072	J	inc	52	0.0015	U	21	79
Benzene	0.027		0.037		inc	0.031		inc	16	0.012		56	61
Bromodichloromethane	0.00076	U	0.00076	U	0	0.00058	U	24	24	0.00058	U	24	0
Bromoform	0.0016	U	0.0016	U	0	0.0012	U	25	25	0.0012	U	25	0
Bromomethane	0.00096	U	0.00096	U	0	0.00073	U	24	24	0.00073	U	24	0
Carbon disulfide	0.00064	U	0.00064	U	0	0.00049	U	23	23	0.00049	U	23	0
Carbon tetrachloride	0.0013	U	0.0013	U	0	0.001	U	23	23	0.0014	J	inc	inc
Chlorobenzene	0.0011	U	0.0025	J	inc	0.0013	J	inc	48	0.00085	U	23	35
Chlorobromomethane	0.0021	U	0.0021	U	0	0.0016	U	24	24	0.0016	U	24	0
Chloroethane	0.0016	U	0.0016	U	0	0.0012	U	25	25	0.0012	U	25	0
Chloroform	0.53		3.2		inc	0.65		inc	80	0.57		inc	12
Chloromethane	0.0019	U	0.0019	U	0	0.0015	U	21	21	0.0015	U	21	0
cis-1,2-Dichloroethene	0.026		0.026		0	0.031		inc	inc	0.013		50	58
cis-1,3-Dichloropropene	0.00062	U	0.00062	U	0	0.00048	U	23	23	0.00048	U	23	0
Dibromochloromethane	0.0011	U	0.0011	U	0	0.00083	U	25	25	0.00083	U	25	0
Ethylbenzene	0.0012	U	0.0012	U	0	0.0009	U	25	25	0.0009	U	25	0
Methylene Chloride	0.0046	J B	0.0066	J B	inc	0.0019	U	59	71	0.0019	U	59	0
m-Xylene & p-Xylene	0.0018	U	0.0018	U	0	0.0013	U	28	28	0.0013	U	28	0
o-Xylene	0.0013	U	0.0013	U	0	0.001	U	23	23	0.001	U	23	0
Styrene	0.00082	U	0.00082	U	0	0.00063	U	23	23	0.00063	U	23	0
Tetrachloroethene	0.022		0.055		inc	0.036		inc	35	0.012		45	67
Toluene	0.0023	J	0.0016	U	30	0.0012	U	48	25	0.0017	J	26	inc
trans-1,2-Dichloroethene	0.028		0.029		inc	0.035		inc	inc	0.014		50	60
trans-1,3-Dichloropropene	0.00067	U	0.00067	U	0	0.00051	U	24	24	0.00051	U	24	0
Trichloroethene	0.049		0.073		inc	0.066		inc	10	0.027		45	59
Vinyl acetate	0.0011	U	0.0011	U	0	0.00082	U	25	25	0.00082	U	25	0
Vinyl chloride	0.011	J	0.0047	J	57	0.013		inc	inc	0.0067	J	39	48
1,2-Dichloroethene, Total	0.054		0.055		inc	0.066		inc	inc	0.027		50	59
Xylenes, Total	0.0013	U	0.0013	U	0	0.001	U	23	23	0.001	U	23	0

Notes:
1) Flags:
U = analyte was not detected at or above the SDL
J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
B = compound was found in the blank and the sample
2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-3A
Volatile Organic Compounds, Area 2 Soil Samples, Zone A, Sample A2-MW-1-(16-17)
Formosa Pilot Treatability Study
ISCO

Location ID:	A2-MW-1												
Sample Depth (ft bgs):	(16-17)												
Sample Date:	3/6/2014		4/1/2014			4/21/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00067	U	0.00089	U	inc	0.0007	U	inc	21	0.00089	U	inc	inc
1,1,2,2-Tetrachloroethane	0.00079	U	0.001	U	inc	0.00083	U	inc	17	0.001	U	inc	inc
1,1,2-Trichloroethane	0.0068	J	0.00088	U	87	0.0033	J	51	inc	0.024	J	inc	inc
1,1-Dichloroethane	0.0021	J	0.001	U	52	0.011		inc	inc	0.029		inc	inc
1,1-Dichloroethene	0.0011	U	0.0015	U	inc	0.0012	U	inc	20	0.0015	U	inc	inc
1,2-Dichloroethane	0.26		0.057		78	1.5		inc	inc	7.1		inc	inc
1,2-Dichloropropane	0.00065	U	0.00085	U	inc	0.00068	U	inc	20	0.00086	U	inc	inc
2-Butanone (MEK)	0.0017	U	0.0023	U	inc	0.0018	U	inc	22	0.0048	J	inc	inc
2-Hexanone	0.00092	U	0.0012	U	inc	0.00096	U	inc	20	0.0012	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.0013	U	0.0018	U	inc	0.0014	U	inc	22	0.0018	U	inc	inc
Acetone	0.0015	U	0.002	U	inc	0.0016	U	inc	20	0.0036	J	inc	inc
Benzene	0.0018	J	0.00076	U	58	0.0061		inc	inc	0.015		inc	inc
Bromodichloromethane	0.005		0.00079	U	84	0.00063	U	87	20	0.0008	U	84	inc
Bromoform	0.0012	U	0.0016	U	inc	0.0013	U	inc	19	0.0017	U	inc	inc
Bromomethane	0.00076	U	0.001	U	inc	0.00079	U	inc	21	0.001	U	inc	inc
Carbon disulfide	0.0005	U	0.00066	U	inc	0.00052	U	inc	21	0.00066	U	inc	inc
Carbon tetrachloride	0.001	U	0.0014	U	inc	0.0011	U	inc	21	0.0014	U	inc	inc
Chlorobenzene	0.00087	U	0.0012	U	inc	0.00091	U	inc	24	0.0012	U	inc	inc
Chlorobromomethane	0.0016	U	0.0021	U	inc	0.0017	U	inc	19	0.0021	U	inc	inc
Chloroethane	0.0013	U	0.0017	U	inc	0.0013	U	0	24	0.0017	U	inc	inc
Chloroform	0.0054		0.0017	J B	69	0.013	B	inc	inc	0.031	B	inc	inc
Chloromethane	0.0015	U	0.002	U	inc	0.0016	U	inc	20	0.002	U	inc	inc
cis-1,2-Dichloroethene	0.00076	U	0.001	U	inc	0.0034	J	inc	inc	0.0083		inc	inc
cis-1,3-Dichloropropene	0.00049	U	0.00065	U	inc	0.00051	U	inc	22	0.00065	U	inc	inc
Dibromochloromethane	0.00086	U	0.0011	U	inc	0.00089	U	inc	19	0.0011	U	inc	inc
Ethylbenzene	0.00093	U	0.0012	U	inc	0.00097	U	inc	19	0.0012	U	inc	inc
Methylene Chloride	0.0023	J B	0.0026	U	inc	0.0021	U	9	19	0.0026	U	inc	inc
m-Xylene & p-Xylene	0.0014	U	0.0018	U	inc	0.0014	U	0	22	0.0018	U	inc	inc
o-Xylene	0.001	U	0.0014	U	inc	0.0011	U	inc	21	0.0014	U	inc	inc
Styrene	0.00065	U	0.00085	U	inc	0.00068	U	inc	20	0.00086	U	inc	inc
Tetrachloroethene	0.00065	U	0.00085	U	inc	0.0021	J	inc	inc	0.0041	J	inc	inc
Toluene	0.0013	U	0.0017	U	inc	0.0013	U	0	24	0.0017	U	inc	inc
trans-1,2-Dichloroethene	0.001	U	0.0014	U	inc	0.0011	J	inc	21	0.0023	J	inc	inc
trans-1,3-Dichloropropene	0.00053	U	0.0007	U	inc	0.00055	U	inc	21	0.0007	U	inc	inc
Trichloroethene	0.0016	J	0.0017	U	inc	0.0058		inc	inc	0.015		inc	inc
Vinyl acetate	0.00085	U	0.0011	U	inc	0.00088	U	inc	20	0.0011	U	inc	inc
Vinyl chloride	0.00082	U	0.0011	U	inc	0.0037	J	inc	inc	0.0064	J	inc	inc
1,2-Dichloroethene, Total	0.0017	U	0.0023	U	inc	0.0045	J	inc	inc	0.011	J	inc	inc
Xylenes, Total	0.001	U	0.0014	U	inc	0.0011	U	inc	21	0.0014	U	inc	inc

Notes:
1) Flags:
U = analyte was not detected at or above the SDL
J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
B = compound was found in the blank and the sample
2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-3B

Volatile Organic Compounds, Area 2 Soil Samples, Zone A, Sample A2-MW-1-(20-21)

Formosa Pilot Treatability Study

ISCO

Location ID:	A2-MW-1												
Sample Depth (ft bgs):	(20-21)												
Sample Date:	3/6/2014		4/1/2014			4/21/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00077	U	0.00072	U	6	0.00081	U	inc	inc	0.00084	U	inc	inc
1,1,2,2-Tetrachloroethane	0.00091	U	0.00085	U	7	0.00096	U	inc	inc	0.00098	U	inc	inc
1,1,2-Trichloroethane	0.27		0.00071	U	100	0.42	J	inc	inc	0.49	J	inc	inc
1,1-Dichloroethane	0.11	J	0.0041	J	96	0.59		inc	inc	0.14		inc	76
1,1-Dichloroethene	0.0024	U	0.0012	U	50	0.0085		inc	inc	0.0046	J	inc	46
1,2-Dichloroethane	33		0.048		100	130		inc	inc	50		inc	62
1,2-Dichloropropane	0.00074	U	0.00069	U	7	0.00078	U	inc	inc	0.0008	U	inc	inc
2-Butanone (MEK)	0.002	U	0.0019	U	5	0.0021	U	inc	inc	0.02		inc	inc
2-Hexanone	0.0011	U	0.00099	U	10	0.0011	U	0	inc	0.0011	U	0	0
4-Methyl-2-pentanone (MIBK)	0.0015	U	0.0014	U	7	0.0016	U	inc	inc	0.0017	U	inc	inc
Acetone	0.0017		0.0016	U	6	0.0018	U	inc	inc	0.0049	J	inc	inc
Benzene	0.11		0.0025	J	98	0.58		inc	inc	0.13		inc	78
Bromodichloromethane	0.17	U	0.00065	U	100	0.00073	U	100	inc	0.00087	J	99	inc
Bromoform	0.0014	U	0.0013	U	7	0.0015	U	inc	inc	0.0015	U	inc	0
Bromomethane	0.00087	U	0.00081	U	7	0.00091	U	inc	inc	0.00094	U	inc	inc
Carbon disulfide	0.00058	U	0.00054	U	7	0.00061	U	inc	inc	0.00062	U	inc	inc
Carbon tetrachloride	0.0012	J	0.0011	U	8	0.0012	U	0	inc	0.0013	U	inc	inc
Chlorobenzene	0.0015	U	0.00094	U	37	0.004	J	inc	inc	0.0015	J	0	63
Chlorobromomethane	0.0019	U	0.0017	U	11	0.002	U	inc	inc	0.002	U	inc	0
Chloroethane	0.0015	U	0.0014	U	7	0.0015	U	0	inc	0.0016	U	inc	inc
Chloroform	0.4		0.0022	J B	99	1.1		inc	inc	0.53		inc	52
Chloromethane	0.0017		0.0016	U	6	0.0018	U	inc	inc	0.0019	U	inc	inc
cis-1,2-Dichloroethene	0.041	U	0.0031	J	92	0.094		inc	inc	0.045		inc	52
cis-1,3-Dichloropropene	0.00057	U	0.00053	U	7	0.00059	U	inc	inc	0.00061	U	inc	inc
Dibromochloromethane	0.00098	U	0.00092	U	6	0.001	U	inc	inc	0.0011	U	inc	inc
Ethylbenzene	0.0011	B	0.001	U	9	0.0011	U	0	inc	0.0012	U	inc	inc
Methylene Chloride	0.013	U	0.0021	U	84	0.015	B	inc	inc	0.026		inc	inc
m-Xylene & p-Xylene	0.0016	U	0.0015	U	6	0.0017	U	inc	inc	0.0023	J	inc	inc
o-Xylene	0.0012	U	0.0011	U	8	0.0012	U	0	inc	0.0019	J	inc	inc
Styrene	0.00074		0.00069	U	7	0.00078	U	inc	inc	0.0008	U	inc	inc
Tetrachloroethene	0.021	U	0.00073	J	97	0.057		inc	inc	0.022		inc	61
Toluene	0.0014		0.0014	U	0	0.0015	U	inc	inc	0.0018	J	inc	inc
trans-1,2-Dichloroethene	0.0097	U	0.0011	U	89	0.027		inc	inc	0.015		inc	44
trans-1,3-Dichloropropene	0.00061		0.00057	U	7	0.00064	U	inc	inc	0.00065	U	inc	inc
Trichloroethene	0.071	U	0.0033	J	95	0.47		inc	inc	0.086		inc	82
Vinyl acetate	0.00097		0.00091	U	6	0.001	U	inc	inc	0.001	U	inc	0
Vinyl chloride	0.027		0.0018	J	93	0.075		inc	inc	0.0093	J	66	88
1,2-Dichloroethene, Total	0.051		0.0031	J	94	0.12		inc	inc	0.06		inc	50
Xylenes, Total	0.0012		0.0011	U	8	0.0012	U	0	inc	0.0042	J	inc	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and the sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-3C

Volatile Organic Compounds, Area 2 Soil Samples, Zone A, Sample A2-MW-2-(18-19)

Formosa Pilot Treatability Study

ISCO

Location ID:	A2-MW-2												
Sample Depth (ft bgs):	(18-19)												
Sample Date:	3/6/2014		4/1/2014			4/21/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00071	U	0.00073	U	inc	0.00079	U	inc	inc	0.00077	U	inc	3
1,1,2,2-Tetrachloroethane	0.00083	U	0.00086	U	inc	0.00093	U	inc	inc	0.00091	U	inc	2
1,1,2-Trichloroethane	0.0052	J	0.13		inc	0.067		inc	48	0.00076	U	85	99
1,1-Dichloroethane	0.00083	U	0.11		inc	0.13		inc	inc	0.0022	J	inc	98
1,1-Dichloroethene	0.0012	U	0.0035	J	inc	0.0053	J	inc	inc	0.0013	U	inc	75
1,2-Dichloroethane	0.033		9.3		inc	3.6		inc	61	0.0072	B	78	100
1,2-Dichloropropane	0.00068	U	0.0007	U	inc	0.00076	U	inc	inc	0.00074	U	inc	3
2-Butanone (MEK)	0.013		0.0019	U	85	0.002	U	85	inc	0.002	U	85	0
2-Hexanone	0.00096	U	0.001	U	inc	0.0011	U	inc	inc	0.0011	U	inc	0
4-Methyl-2-pentanone (MIBK)	0.0014	U	0.0015	U	inc	0.0016	U	inc	inc	0.0015	U	inc	6
Acetone	0.013		0.0016	U	88	0.0018	U	86	inc	0.0017	U	87	6
Benzene	0.0006	U	0.38		inc	0.15		inc	61	0.00066	U	inc	100
Bromodichloromethane	0.00063	U	0.00065	U	inc	0.00071	U	inc	inc	0.00069	U	inc	3
Bromoform	0.0013	U	0.0014	U	inc	0.0015	U	inc	inc	0.0063		inc	inc
Bromomethane	0.00079	U	0.00082	U	inc	0.00089	U	inc	inc	0.00087	U	inc	2
Carbon disulfide	0.00052	U	0.00054	U	inc	0.00059	U	inc	inc	0.00057	U	inc	3
Carbon tetrachloride	0.0011	U	0.0011	U	0	0.0012	U	inc	inc	0.0012	U	inc	0
Chlorobenzene	0.00092	U	0.0019	J	inc	0.0022	J	inc	inc	0.001	U	inc	55
Chlorobromomethane	0.0017	U	0.0018	U	inc	0.0019	U	inc	inc	0.0019	U	inc	0
Chloroethane	0.0013	U	0.0014	U	inc	0.0015	U	inc	inc	0.0015	U	inc	0
Chloroform	0.0015	J	0.46		inc	0.14	B	inc	70	0.0022	J B	inc	98
Chloromethane	0.0016	U	0.0016	U	0	0.0018	U	inc	inc	0.0017	U	inc	6
cis-1,2-Dichloroethene	0.00079	U	0.045		inc	0.048		inc	inc	0.00087	U	inc	98
cis-1,3-Dichloropropene	0.00052	U	0.00053	U	inc	0.00058	U	inc	inc	0.00056	U	inc	3
Dibromochloromethane	0.0009	U	0.00093	U	inc	0.001	U	inc	inc	0.00098	U	inc	2
Ethylbenzene	0.00097	U	0.001	U	inc	0.0011	U	inc	inc	0.0011	U	inc	0
Methylene Chloride	0.0025	J B	0.0022	U	12	0.0023	U	8	inc	0.0023	U	8	0
m-Xylene & p-Xylene	0.0015	U	0.0015	U	0	0.0016	U	inc	inc	0.0016	U	inc	0
o-Xylene	0.0011	U	0.0011	U	0	0.0012	U	inc	inc	0.0012	U	inc	0
Styrene	0.00068	U	0.0007	U	inc	0.00076	U	inc	inc	0.00074	U	inc	3
Tetrachloroethene	0.00068	U	0.027		inc	0.032		inc	inc	0.00074	U	inc	98
Toluene	0.0013	U	0.0014	U	inc	0.0015	U	inc	inc	0.0014	U	inc	7
trans-1,2-Dichloroethene	0.0011	U	0.014		inc	0.016		inc	inc	0.0012	U	inc	93
trans-1,3-Dichloropropene	0.00055	U	0.00057	U	inc	0.00062	U	inc	inc	0.00061	U	inc	2
Trichloroethene	0.0013	U	0.083		inc	0.1		inc	inc	0.0017	J	inc	98
Vinyl acetate	0.00089	U	0.00092	U	inc	0.001	U	inc	inc	0.00097	U	inc	3
Vinyl chloride	0.00086	U	0.043		inc	0.078		inc	inc	0.00094	U	inc	99
1,2-Dichloroethene, Total	0.0018	U	0.059		inc	0.064		inc	inc	0.002	U	inc	97
Xylenes, Total	0.0011	U	0.0011	U	0	0.0012	U	inc	inc	0.0012	U	inc	0

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and the sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-3D
Volatile Organic Compounds, Area 2 Soil Samples, Zone A, Sample A2-MW-2-(20-21)
Formosa Pilot Treatability Study
ISCO

Location ID:	A2-MW-2												
Sample Depth (ft bgs):	(20-21)												
Sample Date:	3/6/2014		4/1/2014			4/21/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00072	U	0.00079	U	inc	0.00078	U	inc	1	0.0008	U	inc	inc
1,1,2,2-Tetrachloroethane	0.00085	U	0.00093	U	inc	0.00091	U	inc	2	0.00095	U	inc	inc
1,1,2-Trichloroethane	0.013	J	0.42	J	inc	0.13		inc	69	0.00089	J	93	99
1,1-Dichloroethane	0.0025	J	0.43		inc	0.42		inc	2	0.016		inc	96
1,1-Dichloroethene	0.0012	U	0.0079		inc	0.0023	J	inc	71	0.0013	U	inc	43
1,2-Dichloroethane	0.46		22		inc	22		inc	0	0.067	B	85	100
1,2-Dichloropropane	0.00069	U	0.00076	U	inc	0.00075	U	inc	1	0.00077	U	inc	inc
2-Butanone (MEK)	0.0018	U	0.002	U	inc	0.002	U	inc	0	0.0021	U	inc	inc
2-Hexanone	0.00098	U	0.0011	U	inc	0.0011	U	inc	0	0.0011	U	inc	0
4-Methyl-2-pentanone (MIBK)	0.0014	U	0.0016	U	inc	0.0015	U	inc	6	0.0016	U	inc	inc
Acetone	0.0016	U	0.0018	U	inc	0.0017	U	inc	6	0.0018	U	inc	inc
Benzene	0.002	J	0.52		inc	0.36		inc	31	0.0064		inc	98
Bromodichloromethane	0.011		0.00071	U	94	0.00069	U	94	3	0.00072	U	93	inc
Bromoform	0.0013	U	0.0015	U	inc	0.0014	U	inc	7	0.0015	U	inc	inc
Bromomethane	0.00081	U	0.00089	U	inc	0.00087	U	inc	2	0.0009	U	inc	inc
Carbon disulfide	0.00053	U	0.00059	U	inc	0.00058	U	inc	2	0.0006	U	inc	inc
Carbon tetrachloride	0.0011	U	0.0012	U	inc	0.0012	U	inc	0	0.0012	U	inc	0
Chlorobenzene	0.00093	U	0.0035	J	inc	0.001	J	inc	71	0.001	U	inc	0
Chlorobromomethane	0.0017	U	0.0019	U	inc	0.0019	U	inc	0	0.0019	U	inc	0
Chloroethane	0.0014	U	0.0015	U	inc	0.0015	U	inc	0	0.0015	U	inc	0
Chloroform	0.0064		0.81		inc	0.69		inc	15	0.0072	B	inc	99
Chloromethane	0.0016	U	0.0018	U	inc	0.0017	U	inc	6	0.0018	U	inc	inc
cis-1,2-Dichloroethene	0.00081	U	0.11		inc	0.029		inc	74	0.0054		inc	81
cis-1,3-Dichloropropene	0.00052	U	0.00058	U	inc	0.00057	U	inc	2	0.00059	U	inc	inc
Dibromochloromethane	0.00091	U	0.001	U	inc	0.00099	U	inc	1	0.001	U	inc	inc
Ethylbenzene	0.00099	U	0.0011	U	inc	0.0011	U	inc	0	0.0011	U	inc	0
Methylene Chloride	0.0041	J B	0.046	B	inc	0.014	B	inc	70	0.0024	U	41	83
m-Xylene & p-Xylene	0.0015	U	0.0016	U	inc	0.0016	U	inc	0	0.0017	U	inc	inc
o-Xylene	0.0011	U	0.0012	U	inc	0.0012	U	inc	0	0.0012	U	inc	0
Styrene	0.00069	U	0.00076	U	inc	0.00075	U	inc	1	0.00077	U	inc	inc
Tetrachloroethene	0.00069	U	0.065		inc	0.014		inc	78	0.0016	J	inc	89
Toluene	0.0013	U	0.0015	U	inc	0.0015	U	inc	0	0.0015	U	inc	0
trans-1,2-Dichloroethene	0.0011	U	0.032		inc	0.0084		inc	74	0.0014	J	inc	83
trans-1,3-Dichloropropene	0.00056	U	0.00062	U	inc	0.00061	U	inc	2	0.00063	U	inc	inc
Trichloroethene	0.0014	J	0.21		inc	0.051		inc	76	0.0084		inc	84
Vinyl acetate	0.0009	U	0.001	U	inc	0.00098	U	inc	2	0.001	U	inc	inc
Vinyl chloride	0.00087	U	0.089		inc	0.024		inc	73	0.0072	J	inc	70
1,2-Dichloroethene, Total	0.0018	U	0.14		inc	0.037		inc	74	0.0068	J	inc	82
Xylenes, Total	0.0011	U	0.0012	U	inc	0.0012	U	inc	0	0.0012	U	inc	0

Notes:
1) Flags:
U = analyte was not detected at or above the SDL
J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
B = compound was found in the blank and the sample
2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-3E

Volatile Organic Compounds, Area 2 Soil Samples, Zone A, Sample A2-MW-3-(16-17)

Formosa Pilot Treatability Study

ISCO

Location ID:	A2-MW-3												
Sample Depth (ft bgs):	(16-17)												
Sample Date:	3/6/2014		4/1/2014			4/21/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00076	U	0.00077	U	inc	0.00073	U	4	5	0.00097	U	inc	inc
1,1,2,2-Tetrachloroethane	0.00089	U	0.0009	U	inc	0.00085	U	4	6	0.0011	U	inc	inc
1,1,2-Trichloroethane	0.0073	J	0.0095	J	inc	0.049		inc	inc	0.011	J	inc	78
1,1-Dichloroethane	0.019		0.041		inc	0.14		inc	inc	0.052		inc	63
1,1-Dichloroethene	0.0013	U	0.0024	U	inc	0.0063		inc	inc	0.0033	J	inc	48
1,2-Dichloroethane	0.0078		0.023		inc	0.41		inc	inc	0.021		inc	95
1,2-Dichloropropane	0.00073	U	0.00074	U	inc	0.0007	U	4	5	0.00093	U	inc	inc
2-Butanone (MEK)	0.0019	U	0.002	U	inc	0.0019	U	0	5	0.0036	J	inc	inc
2-Hexanone	0.001	U	0.001	U	0	0.00099	U	1	1	0.0013	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.0015	U	0.0015	U	0	0.0014	U	7	7	0.0019	U	inc	inc
Acetone	0.0017	U	0.0052	U	inc	0.0016	U	6	69	0.013		inc	inc
Benzene	0.019		0.042		inc	0.16		inc	inc	0.035		inc	78
Bromodichloromethane	0.0063		0.00068	U	89	0.00065	U	90	4	0.00086	U	86	inc
Bromoform	0.0014	U	0.0014	U	0	0.0013	U	7	7	0.0018	U	inc	inc
Bromomethane	0.00085	U	0.00086	U	inc	0.00082	U	4	5	0.0011	U	inc	inc
Carbon disulfide	0.00056	U	0.00057	U	inc	0.00054	U	4	5	0.00072	U	inc	inc
Carbon tetrachloride	0.0012	U	0.0012	U	0	0.0011	U	8	8	0.0015	U	inc	inc
Chlorobenzene	0.00098	U	0.00099	U	inc	0.0017	J	inc	inc	0.0013	U	inc	24
Chlorobromomethane	0.0018	U	0.0018	U	0	0.0017	U	6	6	0.0023	U	inc	inc
Chloroethane	0.0014	U	0.0015	U	inc	0.0014	U	0	7	0.0024	J	inc	inc
Chloroform	0.016		0.022	B	inc	0.31		inc	inc	0.048	B	inc	85
Chloromethane	0.0017	U	0.0017	U	0	0.0016	U	6	6	0.0022	U	inc	inc
cis-1,2-Dichloroethene	0.0093		0.021		inc	0.055		inc	inc	0.019		inc	65
cis-1,3-Dichloropropene	0.00055	U	0.00056	U	inc	0.00053	U	4	5	0.00071	U	inc	inc
Dibromochloromethane	0.00096	U	0.00097	U	inc	0.00092	U	4	5	0.0012	U	inc	inc
Ethylbenzene	0.001	U	0.0011	U	inc	0.001	U	0	9	0.0013	U	inc	inc
Methylene Chloride	0.0032	J B	0.0023	U	28	0.0022	U	31	4	0.0029	U	9	inc
m-Xylene & p-Xylene	0.0016	U	0.0016	U	0	0.0015	U	6	6	0.002	U	inc	inc
o-Xylene	0.0012	U	0.0012	U	0	0.0011	U	8	8	0.0015	U	inc	inc
Styrene	0.00073	U	0.00074	U	inc	0.0007	U	4	5	0.00093	U	inc	inc
Tetrachloroethene	0.0034	J	0.0087		inc	0.031		inc	inc	0.0092		inc	70
Toluene	0.0014	U	0.0014	U	0	0.0014	U	0	0	0.0018	U	inc	inc
trans-1,2-Dichloroethene	0.0022	J	0.0066	J	inc	0.019		inc	inc	0.0067		inc	65
trans-1,3-Dichloropropene	0.0006	U	0.0006	U	0	0.00057	U	5	5	0.00076	U	inc	inc
Trichloroethene	0.014		0.037		inc	0.11		inc	inc	0.042		inc	62
Vinyl acetate	0.00095	U	0.00096	U	inc	0.00091	U	4	5	0.0012	U	inc	inc
Vinyl chloride	0.0099	J	0.036		inc	0.12		inc	inc	0.047		inc	61
1,2-Dichloroethene, Total	0.012		0.028		inc	0.074		inc	inc	0.026		inc	65
Xylenes, Total	0.0012	U	0.0012	U	0	0.0011	U	8	8	0.0015	U	inc	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and the sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-3F

Volatile Organic Compounds, Area 2 Soil Samples, Zone A, Sample A2-MW-3-(20-21)

Formosa Pilot Treatability Study

ISCO

Location ID:	A2-MW-3												
Sample Depth (ft bgs):	(20-21)												
Sample Date:	3/6/2014		4/1/2014			4/21/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00085	U	0.00074	U	13	0.0007	U	18	5	0.00084	U	1	inc
1,1,2,2-Tetrachloroethane	0.001	U	0.00087	U	13	0.00082	U	18	6	0.00099	U	1	inc
1,1,2-Trichloroethane	0.00084	U	0.063		inc	0.11		inc	inc	0.031	J	inc	72
1,1-Dichloroethane	0.001	U	0.076		inc	0.33		inc	inc	0.074		inc	78
1,1-Dichloroethene	0.0014	U	0.0025	J	inc	0.0042	J	inc	inc	0.0034	J	inc	19
1,2-Dichloroethane	0.014		2.1		inc	4.9		inc	inc	0.27		inc	94
1,2-Dichloropropane	0.00081	U	0.00071	U	12	0.00067	U	17	6	0.00081	U	0	inc
2-Butanone (MEK)	0.0022	U	0.0019	U	14	0.0018	U	18	5	0.0022	U	0	inc
2-Hexanone	0.0012	U	0.001	U	17	0.00095	U	21	5	0.0012	U	0	inc
4-Methyl-2-pentanone (MIBK)	0.0017	U	0.0015	U	12	0.0014	U	18	7	0.0017	U	0	inc
Acetone	0.0019	U	0.0017	U	11	0.0067	J	inc	inc	0.0019	U	0	72
Benzene	0.0018	J	0.08		inc	0.38		inc	inc	0.06		inc	84
Bromodichloromethane	0.00076	U	0.00066	U	13	0.00062	U	18	6	0.00075	U	1	inc
Bromoform	0.0016	U	0.0014	U	13	0.0013	U	19	7	0.0016	U	0	inc
Bromomethane	0.00095	U	0.00083	U	13	0.00078	U	18	6	0.00095	U	0	inc
Carbon disulfide	0.00063	U	0.00055	U	13	0.00052	U	17	5	0.00063	U	0	inc
Carbon tetrachloride	0.0013	U	0.0011	U	15	0.0011	U	15	0	0.0013	U	0	inc
Chlorobenzene	0.0011	U	0.00096	U	13	0.0015	J	inc	inc	0.0011	U	0	27
Chlorobromomethane	0.002	U	0.0018	U	10	0.0017	U	15	6	0.002	U	0	inc
Chloroethane	0.0016	U	0.0014	U	13	0.0013	U	19	7	0.0016	U	0	inc
Chloroform	0.0032	J	0.35		inc	0.66		inc	inc	0.1	B	inc	85
Chloromethane	0.0019	U	0.0017	U	11	0.0016	U	16	6	0.0019	U	0	inc
cis-1,2-Dichloroethene	0.00095	U	0.03		inc	0.057		inc	inc	0.028		inc	51
cis-1,3-Dichloropropene	0.00062	U	0.00054	U	13	0.00051	U	18	6	0.00062	U	0	inc
Dibromochloromethane	0.0011	U	0.00094	U	15	0.00088	U	20	6	0.0011	U	0	inc
Ethylbenzene	0.0012	U	0.001	U	17	0.00096	U	20	4	0.0012	U	0	inc
Methylene Chloride	0.0032	J B	0.0022	U	31	0.0062	J B	inc	inc	0.0025	U	22	60
m-Xylene & p-Xylene	0.0017	U	0.0015	U	12	0.0014	U	18	7	0.0017	U	0	inc
o-Xylene	0.0013	U	0.0011	U	15	0.0011	U	15	0	0.0013	U	0	inc
Styrene	0.00081	U	0.00071	U	12	0.00067	U	17	6	0.00081	U	0	inc
Tetrachloroethene	0.00081	U	0.015		inc	0.024		inc	inc	0.013		inc	46
Toluene	0.0016	U	0.0014	U	13	0.0013	U	19	7	0.0016	U	0	inc
trans-1,2-Dichloroethene	0.0013	U	0.0081		inc	0.015		inc	inc	0.0085		inc	43
trans-1,3-Dichloropropene	0.00066	U	0.00058	U	12	0.00055	U	17	5	0.00066	U	0	inc
Trichloroethene	0.0016	U	0.053		inc	0.35		inc	inc	0.058		inc	83
Vinyl acetate	0.0011	U	0.00093	U	15	0.00088	U	20	5	0.0011	U	0	inc
Vinyl chloride	0.001	U	0.04		inc	0.079		inc	inc	0.087		inc	inc
1,2-Dichloroethene, Total	0.0022	U	0.038		inc	0.072		inc	inc	0.037		inc	49
Xylenes, Total	0.0013	U	0.0011	U	15	0.0011		15	0	0.0013	U	0	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and the sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-4A
Volatile Organic Compounds, Area 2 Soil Samples, Zone B, Sample A2-MW-1-(38-39)
Formosa Pilot Treatability Study
ISCO

Location ID:	A2-MW-1												
Sample Depth (ft bgs):	(38-39)												
Sample Date:	3/13/2014		4/1/2014			4/21/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00071	U	0.00072	U	inc	0.00071	U	0	1	0.00086	U	inc	inc
1,1,2,2-Tetrachloroethane	0.00083	U	0.00084	U	inc	0.00083	U	0	1	0.001	U	inc	inc
1,1,2-Trichloroethane	0.07		0.00071	U	99	0.018	J	74	inc	0.11		inc	inc
1,1-Dichloroethane	0.025		0.0052		79	0.0045	J	82	13	0.043		inc	inc
1,1-Dichloroethene	0.0012	U	0.0012	U	0	0.0012	U	0	0	0.0014	U	inc	inc
1,2-Dichloroethane	0.15		0.064		57	0.097		35	inc	0.45		inc	inc
1,2-Dichloropropane	0.00068	U	0.00069	U	inc	0.00068	U	0	1	0.00083	U	inc	inc
2-Butanone (MEK)	0.0018	U	0.0018	U	0	0.0018	U	0	0	0.0022	U	inc	inc
2-Hexanone	0.00097	U	0.00098	U	inc	0.00096	U	1	2	0.0012	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.0014	U	0.0014	U	0	0.0014	U	0	0	0.0017	U	inc	inc
Acetone	0.0016	U	0.0016	U	0	0.0053	J	inc	inc	0.0019	U	inc	64
Benzene	0.014		0.0031	J	78	0.0006	U	96	81	0.0012	J	91	inc
Bromodichloromethane	0.055		0.00064	U	99	0.00063	U	99	2	0.00077	U	99	inc
Bromoform	0.0013	U	0.0013	U	0	0.0013	U	0	0	0.0016	U	inc	inc
Bromomethane	0.0008	U	0.00081	U	inc	0.00079	U	1	2	0.0062	J	inc	inc
Carbon disulfide	0.00053	U	0.00053	U	0	0.00052	U	2	2	0.00064	U	inc	inc
Carbon tetrachloride	0.0011	U	0.0011	U	0	0.0011	U	0	0	0.0013	U	inc	inc
Chlorobenzene	0.0055		0.00093	U	83	0.00092	U	83	1	0.0011	U	80	inc
Chlorobromomethane	0.0017	U	0.0017	U	0	0.0017	U	0	0	0.0021	U	inc	inc
Chloroethane	0.0013	U	0.0014	U	inc	0.0013	U	0	7	0.0016	U	inc	inc
Chloroform	0.062		0.0036	J B	94	0.011	B	82	inc	0.11	B	inc	inc
Chloromethane	0.0016	U	0.0016	U	0	0.0016	U	0	0	0.0067	J	inc	inc
cis-1,2-Dichloroethene	0.009		0.0025	J	72	0.00079	U	91	68	0.0025	J	72	inc
cis-1,3-Dichloropropene	0.00052	U	0.00052	U	0	0.00051	U	2	2	0.00063	U	inc	inc
Dibromochloromethane	0.0009	U	0.00091	U	inc	0.0009	U	0	1	0.0011	U	inc	inc
Ethylbenzene	0.00098	U	0.00099	U	inc	0.00097	U	1	2	0.0012	U	inc	inc
Methylene Chloride	0.0021	U	0.0021	U	0	0.0021	U	0	0	0.0026	U	inc	inc
m-Xylene & p-Xylene	0.0015	U	0.0015	U	0	0.0014	U	7	7	0.0018	U	inc	inc
o-Xylene	0.0011	U	0.0011	U	0	0.0011	U	0	0	0.0013	U	inc	inc
Styrene	0.00068	U	0.00069	U	inc	0.00068	U	0	1	0.00083	U	inc	inc
Tetrachloroethene	0.038		0.0011	J	97	0.0025	J	93	inc	0.033		13	inc
Toluene	0.0013	U	0.0013	U	0	0.0013	U	0	0	0.0016	U	inc	inc
trans-1,2-Dichloroethene	0.0045	J	0.0011	U	76	0.0011	U	76	0	0.002	J	56	inc
trans-1,3-Dichloropropene	0.00056	U	0.00056	U	0	0.00055	U	2	2	0.00068	U	inc	inc
Trichloroethene	0.031		0.0033	J	89	0.0013	U	96	61	0.015		52	inc
Vinyl acetate	0.00089	U	0.0009	U	inc	0.00089	U	0	1	0.0011	U	inc	inc
Vinyl chloride	0.014		0.0023	J	84	0.00086	U	94	63	0.0024	J	83	inc
1,2-Dichloroethene, Total	0.014		0.0025	J	82	0.0018	U	87	28	0.0045	J	68	inc
Xylenes, Total	0.0011	U	0.0011	U	0	0.0011	U	0	0	0.0013	U	inc	inc

Notes:
1) Flags:
U = analyte was not detected at or above the SDL
J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
B = compound was found in the blank and the sample
2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-4B

Volatile Organic Compounds, Area 2 Soil Samples, Zone B, Sample A2-MW-1-(39-40)

Formosa Pilot Treatability Study

ISCO

Location ID:	A2-MW-1												
Sample Depth (ft bgs):	(39-40)												
Sample Date:	3/13/2014		4/1/2014			4/21/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00071	U	0.00073	U	inc	0.0008	U	inc	inc	0.0009	U	inc	inc
1,1,2,2-Tetrachloroethane	0.00084	U	0.00086	U	inc	0.00094	U	inc	inc	0.0011	U	inc	inc
1,1,2-Trichloroethane	0.0055	J	0.00072	U	87	0.0059	J	inc	inc	0.051		inc	inc
1,1-Dichloroethane	0.006		0.0044	J	27	0.019		inc	inc	0.025		inc	inc
1,1-Dichloroethene	0.0012	U	0.0012	U	0	0.0013	U	inc	inc	0.0015	U	inc	inc
1,2-Dichloroethane	0.11		0.057		48	0.75		inc	inc	0.38		inc	49
1,2-Dichloropropane	0.00068	U	0.0007	U	inc	0.00077	U	inc	inc	0.00087	U	inc	inc
2-Butanone (MEK)	0.0018	U	0.0019	U	inc	0.0021	U	inc	inc	0.0023	U	inc	inc
2-Hexanone	0.00097	U	0.001	U	inc	0.0011	U	inc	inc	0.0012	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.0014	U	0.0015	U	inc	0.0016	U	inc	inc	0.0018	U	inc	inc
Acetone	0.0016	U	0.0016	U	0	0.0018	U	inc	inc	0.002	U	inc	inc
Benzene	0.0025	J	0.0028	J	inc	0.0037	J	inc	inc	0.0013	J	48	65
Bromodichloromethane	0.0045	J	0.00065	U	86	0.00072	U	84	inc	0.00081	U	82	inc
Bromoform	0.0013	U	0.0014	U	inc	0.0015	U	inc	inc	0.0017	U	inc	inc
Bromomethane	0.0008	U	0.00082	U	inc	0.0009	U	inc	inc	0.001	U	inc	inc
Carbon disulfide	0.00053	U	0.00054	U	inc	0.0006	U	inc	inc	0.00067	U	inc	inc
Carbon tetrachloride	0.0011	U	0.0011	U	0	0.0012	U	inc	inc	0.0014	U	inc	inc
Chlorobenzene	0.00092	U	0.00095	U	inc	0.001	J	inc	inc	0.0012	U	inc	inc
Chlorobromomethane	0.0017	U	0.0018	U	inc	0.0019	U	inc	inc	0.0022	U	inc	inc
Chloroethane	0.0013	U	0.0014	U	inc	0.0015	U	inc	inc	0.0017	U	inc	inc
Chloroform	0.0037	J	0.0032	J B	14	0.017	B	inc	inc	0.053	B	inc	inc
Chloromethane	0.0016	U	0.0016	U	0	0.0018	U	inc	inc	0.002	U	inc	inc
cis-1,2-Dichloroethene	0.0027	J	0.002	J	26	0.0038	J	inc	inc	0.0026	J	4	32
cis-1,3-Dichloropropene	0.00052	U	0.00053	U	inc	0.00059	U	inc	inc	0.00066	U	inc	inc
Dibromochloromethane	0.0009	U	0.00093	U	inc	0.001	U	inc	inc	0.0011	U	inc	inc
Ethylbenzene	0.00098	U	0.001	U	inc	0.0011	U	inc	inc	0.0012	U	inc	inc
Methylene Chloride	0.0021	U	0.0022	U	inc	0.0024	U	inc	inc	0.0027	U	inc	inc
m-Xylene & p-Xylene	0.0015	U	0.0015	U	0	0.0016	U	inc	inc	0.0019	U	inc	inc
o-Xylene	0.0011	U	0.0011	U	0	0.0012	U	inc	inc	0.0014	U	inc	inc
Styrene	0.00068	U	0.0007	U	inc	0.00077	U	inc	inc	0.00087	U	inc	inc
Tetrachloroethene	0.0061		0.001	J	84	0.013		inc	inc	0.017		inc	inc
Toluene	0.0013	U	0.0014	U	inc	0.0015	U	inc	inc	0.0017	U	inc	inc
trans-1,2-Dichloroethene	0.0011	U	0.0011	U	0	0.0021	J	inc	inc	0.0021	J	inc	0
trans-1,3-Dichloropropene	0.00056	U	0.00057	U	inc	0.00063	U	inc	inc	0.00071	U	inc	inc
Trichloroethene	0.0084		0.0029	J	65	0.014		inc	inc	0.01		inc	29
Vinyl acetate	0.00089	U	0.00092	U	inc	0.001	U	inc	inc	0.0011	U	inc	inc
Vinyl chloride	0.0054	J	0.0022	J	59	0.011		inc	inc	0.0046	J	15	58
1,2-Dichloroethene, Total	0.0027	J	0.002	J	26	0.0059	J	inc	inc	0.0047	J	inc	20
Xylenes, Total	0.0011	U	0.0011	U	0	0.0012	U	inc	inc	0.0014	U	inc	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and the sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-4C
Volatile Organic Compounds, Area 2 Soil Samples, Zone B, Sample A2-MW-2-(38-39)
Formosa Pilot Treatability Study
ISCO

Location ID:	A2-MW-2												
Sample Depth (ft bgs):	(38-39)												
Sample Date:	3/11/2014		4/1/2014			4/21/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00077	U	0.00078	U	inc	0.00069	U	10	12	0.00084	U	inc	inc
1,1,2,2-Tetrachloroethane	0.0009	U	0.00091	U	inc	0.00081	U	10	11	0.00099	U	inc	inc
1,1,2-Trichloroethane	0.037	J	0.18		inc	0.14		inc	22	0.091		inc	35
1,1-Dichloroethane	0.013		0.16		inc	0.089		inc	44	0.067		inc	25
1,1-Dichloroethene	0.0013	U	0.0013	U	0	0.0027	J	inc	inc	0.0014	J	inc	48
1,2-Dichloroethane	0.12		16		inc	15		inc	6	0.28	E B	inc	98
1,2-Dichloropropane	0.00074	U	0.00075	U	inc	0.00066	U	11	12	0.00081	U	inc	inc
2-Butanone (MEK)	0.002	U	0.002	U	0	0.0018	U	10	10	0.0022	U	inc	inc
2-Hexanone	0.001	U	0.0011	U	inc	0.00094	U	6	15	0.0012	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.0015	U	0.0015	U	0	0.0014	U	7	7	0.0017	U	inc	inc
Acetone	0.0017	U	0.0017	U	0	0.0015	U	12	12	0.0019	U	inc	inc
Benzene	0.0062		0.21		inc	0.095		inc	55	0.0028	J	55	97
Bromodichloromethane	0.029		0.00069	U	98	0.00061	U	98	12	0.00075	U	97	inc
Bromoform	0.0014	U	0.0014	U	0	0.0013	U	7	7	0.0016	U	inc	inc
Bromomethane	0.00086	U	0.00087	U	inc	0.00077	U	10	11	0.00095	U	inc	inc
Carbon disulfide	0.00057	U	0.00058	U	inc	0.00051	U	11	12	0.00063	U	inc	inc
Carbon tetrachloride	0.0012	U	0.0012	U	0	0.001	U	17	17	0.0013	U	inc	inc
Chlorobenzene	0.0021	J	0.0023	J	inc	0.0011	J	48	52	0.0011	U	48	0
Chlorobromomethane	0.0018	U	0.0019	U	inc	0.0017	U	6	11	0.002	U	inc	inc
Chloroethane	0.0015	U	0.0015	U	0	0.0013	U	13	13	0.0016	U	inc	inc
Chloroform	0.029		0.45		inc	0.29		inc	36	0.17	B	inc	41
Chloromethane	0.0017	U	0.0017	U	0	0.0015	U	12	12	0.0019	U	inc	inc
cis-1,2-Dichloroethene	0.0046	J	0.072		inc	0.036		inc	50	0.0034	J	26	91
cis-1,3-Dichloropropene	0.00056	U	0.00057	U	inc	0.0005	U	11	12	0.00062	U	inc	inc
Dibromochloromethane	0.00097	U	0.00099	U	inc	0.00087	U	10	12	0.0011	U	inc	inc
Ethylbenzene	0.0011	U	0.0011	U	0	0.00095	U	14	14	0.0012	U	inc	inc
Methylene Chloride	0.0023	U	0.012	B	inc	0.0091	J	inc	24	0.0025	U	inc	73
m-Xylene & p-Xylene	0.0016	U	0.0016	U	0	0.0014	U	13	13	0.0017	U	inc	inc
o-Xylene	0.0012	U	0.0012	U	0	0.001	U	17	17	0.0013	U	inc	inc
Styrene	0.00074	U	0.00075	U	inc	0.00066	U	11	12	0.00081	U	inc	inc
Tetrachloroethene	0.016		0.043		inc	0.016		0	63	0.041		inc	inc
Toluene	0.0014	U	0.0014	U	0	0.0013	U	7	7	0.0016	U	inc	inc
trans-1,2-Dichloroethene	0.0021	J	0.02		inc	0.0087		inc	57	0.0026	J	inc	70
trans-1,3-Dichloropropene	0.0006	U	0.00061	U	inc	0.00054	U	10	11	0.00066	U	inc	inc
Trichloroethene	0.014		0.13		inc	0.059		inc	55	0.015		inc	75
Vinyl acetate	0.00096	U	0.00098	U	inc	0.00086	U	10	12	0.0011	U	inc	inc
Vinyl chloride	0.0077	J	0.12		inc	0.04		inc	67	0.013		inc	68
1,2-Dichloroethene, Total	0.0067	J	0.092		inc	0.045		inc	51	0.006	J	10	87
Xylenes, Total	0.0012	U	0.0012	U	0	0.001	U	17	17	0.0013	U	inc	inc

Notes:
1) Flags:
U = analyte was not detected at or above the SDL
J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
E = result is greater than the UQL and the concentration is an estimated value
B = compound was found in the blank and the sample
2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-4D
Volatile Organic Compounds, Area 2 Soil Samples, Zone B, Sample A2-MW-2-(39-40)
Formosa Pilot Treatability Study
ISCO

Location ID:	A2-MW-2												
Sample Depth (ft bgs):	(39-40)												
Sample Date:	3/11/2014		4/1/2014			4/21/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00077	U	0.00092	U	inc	0.00086	U	inc	7	0.00095	U	inc	inc
1,1,2,2-Tetrachloroethane	0.00091	U	0.0011	U	inc	0.001	U	inc	9	0.0011	U	inc	inc
1,1,2-Trichloroethane	0.0071	J	0.026	J	inc	0.074		inc	inc	0.056		inc	24
1,1-Dichloroethane	0.012		0.036		inc	0.051		inc	inc	0.026		inc	49
1,1-Dichloroethene	0.0013	U	0.0015	U	inc	0.0018	J	inc	inc	0.0016	U	inc	11
1,2-Dichloroethane	0.45		2.3		inc	10		inc	inc	0.21	B	53	98
1,2-Dichloropropane	0.00074	U	0.00088	U	inc	0.00082	U	inc	7	0.00091	U	inc	inc
2-Butanone (MEK)	0.002	U	0.0024	U	inc	0.0022	U	inc	8	0.0024	U	inc	inc
2-Hexanone	0.0011	U	0.0013	U	inc	0.0012	U	inc	8	0.0013	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.0015	U	0.0018	U	inc	0.0017	U	inc	6	0.0019	U	inc	inc
Acetone	0.0017	U	0.0021	U	inc	0.0019	U	inc	10	0.0021	U	inc	inc
Benzene	0.0038	J	0.048		inc	0.057		inc	inc	0.0032	J	16	94
Bromodichloromethane	0.0056		0.00082	U	85	0.00076	U	86	7	0.00084	U	85	inc
Bromoform	0.0014	U	0.0017	U	inc	0.0016	U	inc	6	0.0018	U	inc	inc
Bromomethane	0.00087	U	0.001	U	inc	0.00096	U	inc	4	0.0011	U	inc	inc
Carbon disulfide	0.00057	U	0.00068	U	inc	0.0012	J	inc	inc	0.0007	U	inc	42
Carbon tetrachloride	0.0012	U	0.0014	U	inc	0.0013	U	inc	7	0.0014	U	inc	inc
Chlorobenzene	0.001	U	0.0012	U	inc	0.0011	U	inc	8	0.0012	U	inc	inc
Chlorobromomethane	0.0019	U	0.0022	U	inc	0.0021	U	inc	5	0.0023	U	inc	inc
Chloroethane	0.0015	U	0.0017	U	inc	0.0016	U	inc	6	0.0018	U	inc	inc
Chloroform	0.0098		0.069	B	inc	0.1	B	inc	inc	0.066	B	inc	34
Chloromethane	0.0017	U	0.0021	U	inc	0.0019	U	inc	10	0.0021	U	inc	inc
cis-1,2-Dichloroethene	0.0051	J	0.017		inc	0.02		inc	inc	0.0032	J	37	84
cis-1,3-Dichloropropene	0.00056	U	0.00067	U	inc	0.00063	U	inc	6	0.00069	U	inc	inc
Dibromochloromethane	0.00098	U	0.0012	U	inc	0.0011	U	inc	8	0.0012	U	inc	inc
Ethylbenzene	0.0011	U	0.0013	U	inc	0.0012	U	inc	8	0.0013	U	inc	inc
Methylene Chloride	0.0023	U	0.0027	U	inc	0.0025	U	inc	7	0.0028	U	inc	inc
m-Xylene & p-Xylene	0.0016	U	0.0019	U	inc	0.0018	U	inc	5	0.0019	U	inc	inc
o-Xylene	0.0012	U	0.0014	U	inc	0.0013	U	inc	7	0.0014	U	inc	inc
Styrene	0.00074	U	0.00088	U	inc	0.00082	U	inc	7	0.00091	U	inc	inc
Tetrachloroethene	0.006		0.011		inc	0.011		inc	0	0.022		inc	inc
Toluene	0.0014	U	0.0017	U	inc	0.0016	U	inc	6	0.0018	U	inc	inc
trans-1,2-Dichloroethene	0.0022	J	0.0047	J	inc	0.0046	J	inc	2	0.0019	J	14	59
trans-1,3-Dichloropropene	0.00061	U	0.00072	U	inc	0.00067	U	inc	7	0.00074	U	inc	inc
Trichloroethene	0.012		0.031		inc	0.032		inc	inc	0.013		inc	59
Vinyl acetate	0.00097	U	0.0012	U	inc	0.0011	U	inc	8	0.0012	U	inc	inc
Vinyl chloride	0.0091	J	0.03		inc	0.023		inc	23	0.0066	J	27	71
1,2-Dichloroethene, Total	0.0073	J	0.022		inc	0.025		inc	inc	0.0051	J	30	80
Xylenes, Total	0.0012	U	0.0014	U	inc	0.0013	U	inc	7	0.0014	U	inc	inc

Notes:
1) Flags:
U = analyte was not detected at or above the SDL
J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
B = compound was found in the blank and the sample
2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-4E

Volatile Organic Compounds, Area 2 Soil Samples, Zone B, Sample A2-MW-3-(38-39)

Formosa Pilot Treatability Study

ISCO

Location ID:	A2-MW-3												
Sample Depth (ft bgs):	(38-39)												
Sample Date:	3/11/2014		4/1/2014			4/22/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00083	U	0.00075	U	10	0.00073	U	12	3	0.00086	U	inc	inc
1,1,2,2-Tetrachloroethane	0.00097	U	0.00088	U	9	0.00086	U	11	2	0.001	U	inc	inc
1,1,2-Trichloroethane	0.11		0.065		41	0.041		63	37	0.32	J	inc	inc
1,1-Dichloroethane	0.041		0.061		inc	0.025		39	59	0.079		inc	inc
1,1-Dichloroethene	0.0023	J	0.0012	U	48	0.0012	U	48	0	0.0014	U	39	inc
1,2-Dichloroethane	0.49		1.2		inc	4.8		inc	inc	1.2		inc	75
1,2-Dichloropropane	0.00079	U	0.00072	U	9	0.0007	U	11	3	0.00082	U	inc	inc
2-Butanone (MEK)	0.0021	U	0.0019	U	10	0.0019	U	10	0	0.0035	J	inc	inc
2-Hexanone	0.0011	U	0.001	U	9	0.001	U	9	0	0.0012	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.0016	U	0.0015	U	6	0.0015	U	6	0	0.0017	U	inc	inc
Acetone	0.0019	U	0.0017	U	11	0.0016	U	16	6	0.0019	U	0	inc
Benzene	0.015		0.044		inc	0.022		inc	50	0.0059		61	73
Bromodichloromethane	0.093		0.00067	U	99	0.00065	U	99	3	0.00076	U	99	inc
Bromoform	0.0015	U	0.0014	U	7	0.0014	U	7	0	0.0016	U	inc	inc
Bromomethane	0.00093	U	0.00084	U	10	0.00082	U	12	2	0.00096	U	inc	inc
Carbon disulfide	0.00062	U	0.00056	U	10	0.00054	U	13	4	0.00064	U	inc	inc
Carbon tetrachloride	0.0013	U	0.0011	U	15	0.0011	U	15	0	0.0013	U	0	inc
Chlorobenzene	0.0044	J	0.0037	J	16	0.00095	U	78	74	0.0011	U	75	inc
Chlorobromomethane	0.002	U	0.0018	U	10	0.0018	U	10	0	0.0021	U	inc	inc
Chloroethane	0.0016	U	0.0014	U	13	0.0014	U	13	0	0.0016	U	0	inc
Chloroform	0.12		0.05	B	58	0.33		inc	inc	0.67		inc	inc
Chloromethane	0.0019	U	0.0017	U	11	0.0016	U	16	6	0.0019	U	0	inc
cis-1,2-Dichloroethene	0.014		0.009		36	0.0091		35	inc	0.0057	J	59	37
cis-1,3-Dichloropropene	0.0006	U	0.00055	U	8	0.00053	U	12	4	0.00062	U	inc	inc
Dibromochloromethane	0.0011	U	0.00095	U	14	0.00093	U	15	2	0.0011	U	0	inc
Ethylbenzene	0.0011	U	0.001	U	9	0.001	U	9	0	0.0012	U	inc	inc
Methylene Chloride	0.0036	J	0.0073	J B	inc	0.0022	U	39	70	0.0025	U	31	inc
m-Xylene & p-Xylene	0.0017	U	0.0015	U	12	0.0015	U	12	0	0.0018	U	inc	inc
o-Xylene	0.0013	U	0.0011	U	15	0.0011	U	15	0	0.0013	U	0	inc
Styrene	0.00079	U	0.00072	U	9	0.0007	U	11	3	0.00082	U	inc	inc
Tetrachloroethene	0.038		0.031		18	0.0068		82	78	0.026		32	inc
Toluene	0.0015	U	0.0014	U	7	0.0016	J	inc	inc	0.0018	J	inc	inc
trans-1,2-Dichloroethene	0.0078		0.0016	J	79	0.0022	J	72	inc	0.0031	J	60	inc
trans-1,3-Dichloropropene	0.00065	U	0.00059	U	9	0.00057	U	12	3	0.00067	U	inc	inc
Trichloroethene	0.034		0.012		65	0.015		56	inc	0.013		62	13
Vinyl acetate	0.001	U	0.00094	U	6	0.00092	U	8	2	0.0011	U	inc	inc
Vinyl chloride	0.028		0.011		61	0.0095	J	66	14	0.0072	J	74	24
1,2-Dichloroethene, Total	0.022		0.011		50	0.011		50	0	0.0088	J	60	20
Xylenes, Total	0.0013	U	0.0011	U	15	0.0011	U	15	0	0.0013	U	0	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and the sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-4F
Volatile Organic Compounds, Area 2 Soil Samples, Zone B, Sample A2-MW-3-(39-40)
Formosa Pilot Treatability Study
ISCO

Location ID:	A2-MW-3												
Sample Depth (ft bgs):	(39-40)												
Sample Date:	3/11/2014		4/1/2014			4/22/2014				5/14/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/kg	Flag[1]	mg/kg	Flag	vs. Baseline (% reduction)[2]	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/kg	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.0013	U	0.00073	U	44	0.00075	U	42	inc	0.00095	U	27	inc
1,1,2,2-Tetrachloroethane	0.0015	U	0.00086	U	43	0.00089	U	41	inc	0.0011	U	27	inc
1,1,2-Trichloroethane	0.13		0.056		57	0.083		36	inc	0.37	J	inc	inc
1,1-Dichloroethane	0.054		0.054		0	0.04		26	26	0.1		inc	inc
1,1-Dichloroethene	0.0022	U	0.0012	U	45	0.0012	U	45	0	0.0017	J	23	inc
1,2-Dichloroethane	0.25		2.5		inc	6.7		inc	inc	0.66		inc	90
1,2-Dichloropropane	0.0013	U	0.0007	U	46	0.00072	U	45	inc	0.00092	U	29	inc
2-Butanone (MEK)	0.0034	U	0.0019	U	44	0.0019	U	44	0	0.0048	J	inc	inc
2-Hexanone	0.0018	U	0.001	U	44	0.001	U	44	0	0.0013	U	28	inc
4-Methyl-2-pentanone (MIBK)	0.0026	U	0.0015	U	42	0.0015	U	42	0	0.0019	U	27	inc
Acetone	0.003	U	0.0016	U	47	0.0017	U	43	inc	0.0021	U	30	inc
Benzene	0.021		0.035		inc	0.039		inc	inc	0.012		43	69
Bromodichloromethane	0.11		0.00065	U	99	0.00067	U	99	inc	0.00085	U	99	inc
Bromoform	0.0024	U	0.0014	U	42	0.0014	U	42	0	0.0018	U	25	inc
Bromomethane	0.0015	U	0.00082	U	45	0.00084	U	44	inc	0.0011	U	27	inc
Carbon disulfide	0.00098	U	0.00055	U	44	0.00056	U	43	inc	0.00077	J	21	inc
Carbon tetrachloride	0.002	U	0.0011	U	45	0.0011	U	45	0	0.0015	U	25	inc
Chlorobenzene	0.0061	J	0.0036	J	41	0.00098	U	84	73	0.0017	J	72	inc
Chlorobromomethane	0.0032	U	0.0018	U	44	0.0018	U	44	0	0.0023	U	28	inc
Chloroethane	0.0025	U	0.0014	U	44	0.0014	U	44	0	0.0018	U	28	inc
Chloroform	0.15		0.039	B	74			100	100	0.72		inc	inc
Chloromethane	0.003	U	0.0016	U	47	0.0017	U	43	inc	0.0021	U	30	inc
cis-1,2-Dichloroethene	0.019		0.0068		64	0.019		0	inc	0.011		42	42
cis-1,3-Dichloropropene	0.00096	U	0.00054	U	44	0.00055	U	43	inc	0.0007	U	27	inc
Dibromochloromethane	0.0017	U	0.00093	U	45	0.00096	U	44	inc	0.0012	U	29	inc
Ethylbenzene	0.0018	U	0.001	U	44	0.001	U	44	0	0.0013	U	28	inc
Methylene Chloride	0.0052	J	0.0054	J B	inc	0.0022	U	58	59	0.0028	U	46	inc
m-Xylene & p-Xylene	0.0027	U	0.0015	U	44	0.0015	U	44	0	0.002	U	26	inc
o-Xylene	0.002	U	0.0011	U	45	0.0011	U	45	0	0.0015	U	25	inc
Styrene	0.0013	U	0.0007	U	46	0.00072	U	45	inc	0.00092	U	29	inc
Tetrachloroethene	0.052		0.027		48	0.0055		89	80	0.037		29	inc
Toluene	0.0025	U	0.0014	U	44	0.0014	U	44	0	0.0018	U	28	inc
trans-1,2-Dichloroethene	0.011		0.0012	J	89	0.0029	J	74	inc	0.0065		41	inc
trans-1,3-Dichloropropene	0.001	U	0.00057	U	43	0.00059	U	41	inc	0.00075	U	25	inc
Trichloroethene	0.046		0.0098		79	0.019		59	inc	0.024		48	inc
Vinyl acetate	0.0017	U	0.00092	U	46	0.00095	U	44	inc	0.0012	U	29	inc
Vinyl chloride	0.038		0.0079	J	79	0.0054	J	86	32	0.019		50	inc
1,2-Dichloroethene, Total	0.03		0.008	J	73	0.022		27	inc	0.018		40	18
Xylenes, Total	0.002	U	0.0011	U	45	0.0011	U	45	0	0.0015	U	25	inc

Notes:
1) Flags:
U = analyte was not detected at or above the SDL
J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value
B = compound was found in the blank and the sample
2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-5A

Volatile Organic Compounds and General Chemistry, Area 1 Groundwater Samples, Zone A, Well A1MW-1A

Formosa Pilot Treatability Study

ISCO

Location ID:	A1MW-1A												
Sample Date:	3/17/2014		3/31/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.075	U	0.075	U	0	0.3	U	inc	inc	0.075	U	0	75
1,1,2,2-Tetrachloroethane	0.11	U	0.11	U	0	0.44	U	inc	inc	0.11	U	0	75
1,1,2-Trichloroethane	6.9		7.1		inc	1.9	J	72	73	2.1		70	inc
1,1-Dichloroethane	6		6.1		inc	0.72	J	88	88	1.1		82	inc
1,1-Dichloroethene	0.82		1.2		inc	0.38	U	54	68	0.14	J	83	63
1,2-Dichloroethane	1300	B	1500	B	inc	270		79	82	400		69	inc
1,2-Dichloropropane	0.08	U	0.08	U	0	3.6		inc	inc	0.08	U	0	98
2-Butanone (MEK)	0.38	U	0.38	U	0	1.5	U	inc	inc	0.38	U	0	75
2-Hexanone	0.18	U	0.18	U	0	3.8	J	inc	inc	0.18	U	0	95
4-Methyl-2-pentanone (MIBK)	0.23	U	0.23	U	0	0.9	U	inc	inc	0.23	U	0	74
Acetone	0.5	U	0.5	U	0	2	U	inc	inc	0.5	U	0	75
Benzene	2		2		0	0.19	J	91	91	0.15	J	93	21
Bromodichloromethane	0.08	U	0.08	U	0	0.32	U	inc	inc	0.08	U	0	75
Bromoform	0.095	U	0.095	U	0	0.38	U	inc	inc	0.095	U	0	75
Bromomethane	0.13	U	0.13	U	0	0.5	U	inc	inc	0.13	U	0	74
Carbon disulfide	0.12	U	0.12	U	0	0.48	U	inc	inc	0.12	U	0	75
Carbon tetrachloride	0.075	U	0.075	U	0	0.3	U	inc	inc	0.075	U	0	75
Chlorobenzene	0.1	J	0.11	J	inc	0.42	J	inc	inc	0.06	U	40	86
Chlorobromomethane	0.09	U	0.09	U	0	0.36	U	inc	inc	0.09	U	0	75
Chloroethane	0.04	U	0.04	U	0	0.16	U	inc	inc	0.04	U	0	75
Chloroform	78		66		15	9.2		88	86	13		83	inc
Chloromethane	0.09	U	0.09	U	0	0.36	U	inc	inc	0.09	U	0	75
cis-1,2-Dichloroethene	1.8		2.1		inc	0.12	U	93	94	0.51		72	inc
cis-1,3-Dichloropropene	0.09	U	0.09	U	0	0.36	U	inc	inc	0.09	U	0	75
Dibromochloromethane	0.075	U	0.075	U	0	0.3	U	inc	inc	0.075	U	0	75
Ethylbenzene	0.055	U	0.055	U	0	0.22	U	inc	inc	0.055	U	0	75
Methylene Chloride	0.73	J	1.2	J B	inc	0.3	U	59	75	0.075	U	90	75
m-Xylene & p-Xylene	0.085	U	0.085	U	0	0.34	U	inc	inc	0.085	U	0	75
o-Xylene	0.06	U	0.06	U	0	0.24	U	inc	inc	0.06	U	0	75
Styrene	0.035	U	0.035	U	0	0.14	U	inc	inc	0.035	U	0	75
Tetrachloroethene	2.8		2.8		0	0.26	U	91	91	0.13	J	95	50
Toluene	0.075	U	0.075	U	0	0.3	U	inc	inc	0.075	U	0	75
trans-1,2-Dichloroethene	3.7		4.3		inc	0.18	U	95	96	0.35	J	91	inc
trans-1,3-Dichloropropene	0.11	U	0.11	U	0	0.42	U	inc	inc	0.11	U	0	74
Trichloroethene	3.3		3.6		inc	0.36	U	89	90	0.35	J	89	3
Vinyl acetate	0.11	U	0.11	U	0	0.42	U	inc	inc	0.11	U	0	74
Vinyl chloride	4.8		4.1		15	0.34	J	93	92	0.82	J	83	inc
1,2-Dichloroethene, Total	5.5		6.4	J	inc	0.6	U	89	91	0.86		84	inc
Xylenes, Total	0.13	U	0.13	U	0	0.52	U	inc	inc	0.13	U	0	75
General Chemistry													
Alkalinity	560		500		11	200		64	60	190		66	5
Total Organic Carbon	6.3		2.8		56	.43		inc	inc	55		inc	inc
Nitrate as N	0.047	U	0.047	U	0	2.5		inc	inc	1.5		inc	40
Sulfate	560		570		inc	250		55	56	300		46	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-5B

Volatile Organic Compounds and General Chemistry, Area 1 Groundwater Samples, Zone A, Well A1MW-2A

Formosa Pilot Treatability Study

ISCO

Location ID:	A1MW-2A												
Sample Date:	3/17/2014		3/31/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.15	U	0.075	U	50	0.03	U	80	60	0.075	U	50	inc
1,1,2,2-Tetrachloroethane	0.22	U	0.11	U	50	0.044	U	80	60	0.11	U	50	inc
1,1,2-Trichloroethane	4.8		4.5		6	0.44		91	90	0.32	J	93	27
1,1-Dichloroethane	3.5		3.4		3	0.094	J	97	97	1.1		69	inc
1,1-Dichloroethene	0.36	J	0.35	J	3	0.038	U	89	89	0.43	J	inc	inc
1,2-Dichloroethane	1100		850	B	23	31		97	96	190		83	inc
1,2-Dichloropropane	0.16	U	0.08	U	50	0.032	U	80	60	0.08	U	50	inc
2-Butanone (MEK)	0.76	U	0.38	U	50	0.15	U	80	61	0.38	U	50	inc
2-Hexanone	0.35	U	0.18	U	49	0.07	U	80	61	0.18	U	49	inc
4-Methyl-2-pentanone (MIBK)	0.45	U	0.23	U	49	0.09	U	80	61	0.23	U	49	inc
Acetone	0.99	U	0.5	U	49	0.2	U	80	60	0.5	U	49	inc
Benzene	0.81	J	0.63		22	0.016	U	98	97	0.23	J	72	X
Bromodichloromethane	0.16	U	0.08	U	50	0.032	U	80	60	0.08	U	50	inc
Bromoform	0.19	U	0.095	U	50	0.038	U	80	60	0.095	U	50	inc
Bromomethane	0.25	U	0.13	U	48	0.05	U	80	62	0.13	U	48	inc
Carbon disulfide	0.24	U	0.12	U	50	0.048	U	80	60	0.12	U	50	inc
Carbon tetrachloride	0.15	U	0.075	U	50	0.03	U	80	60	0.075	U	50	inc
Chlorobenzene	0.12	U	0.06	U	50	0.024	U	80	60	0.06	U	50	inc
Chlorobromomethane	0.18	U	0.09	U	50	0.036	U	80	60	0.09	U	50	inc
Chloroethane	0.08	U	0.04	U	50	0.016	U	80	60	0.04	U	50	inc
Chloroform	46		49		inc	1.4		97	97	15		67	inc
Chloromethane	0.18	U	0.09	U	50	0.036	U	80	60	0.09	U	50	inc
cis-1,2-Dichloroethene	0.93	J	0.97		inc	0.012	U	99	99	0.37	J	60	inc
cis-1,3-Dichloropropene	0.18	U	0.09	U	50	0.036	U	80	60	0.09	U	50	inc
Dibromochloromethane	0.15	U	0.075	U	50	0.03	U	80	60	0.075	U	50	inc
Ethylbenzene	0.11	U	0.055	U	50	0.022	U	80	60	0.055	U	50	inc
Methylene Chloride	0.22	J	0.81	J	inc	0.03	U	86	96	0.19	J	14	inc
m-Xylene & p-Xylene	0.17	U	0.085	U	50	0.034	U	80	60	0.085	U	50	inc
o-Xylene	0.12	U	0.06	U	50	0.024	U	80	60	0.06	U	50	inc
Styrene	0.07	U	0.035	U	50	0.014	U	80	60	0.035	U	50	inc
Tetrachloroethene	1.4		1.2		14	0.026	U	98	98	0.22	J	84	inc
Toluene	0.15	U	0.075	U	50	0.03	U	80	60	0.075	U	50	inc
trans-1,2-Dichloroethene	2.3		2.3		0	0.018	U	99	99	1.2		48	inc
trans-1,3-Dichloropropene	0.21	U	0.11	U	48	0.042	U	80	62	0.11	U	48	inc
Trichloroethene	1.9		1.8		5	0.036	U	98	98	0.58		69	inc
Vinyl acetate	0.21	U	0.11	U	48	0.042	U	80	62	0.11	U	48	X
Vinyl chloride	2.5		2.2		12	0.022	U	99	99	1.7		32	X
1,2-Dichloroethene, Total	3.2		3.3	J	inc	0.06	U	98	98	1.6		50	X
Xylenes, Total	0.26	U	0.13	U	50	0.052	U	80	60	0.13	U	50	X
General Chemistry													
Alkalinity	500		500		0	200		60	60	30		94	85
Total Organic Carbon	3.8		2.1		45	33		inc	inc	2.3		39	93
Nitrate as N	0.047	U	0.047	U	0	3.9		inc	inc	0.0072	U	85	100
Sulfate	630		680		inc	190		70	72	630		0	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-5C

Volatile Organic Compounds and General Chemistry, Area 1 Groundwater Samples, Zone A, Well A1MW-3A

Formosa Pilot Treatability Study

ISCO

Location ID:	A1MW-3A												
Sample Date:	3/17/2014		3/31/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.15	U	0.015	U	90	0.038	U	75	inc	0.15	U	0	inc
1,1,2,2-Tetrachloroethane	0.22	U	0.022	U	90	0.055	U	75	inc	0.22	U	0	inc
1,1,2-Trichloroethane	0.33	J	0.28		15	0.27		18	4	2.1		inc	inc
1,1-Dichloroethane	1		1.1		inc	1		0	9	0.44	J	56	56
1,1-Dichloroethene	0.38	J	0.53		inc	0.55		inc	inc	0.19	U	50	65
1,2-Dichloroethane	230	B	190	B	17	120		48	37	360		inc	inc
1,2-Dichloropropane	0.16	U	0.016	U	90	0.04	U	75	inc	0.16	U	0	inc
2-Butanone (MEK)	0.76	U	0.076	U	90	0.19	U	75	inc	0.76	U	0	inc
2-Hexanone	0.35	U	0.035	U	90	0.088	U	75	inc	0.35	U	0	inc
4-Methyl-2-pentanone (MIBK)	0.45	U	0.045	U	90	0.11	U	76	inc	0.45	U	0	inc
Acetone	0.99	U	0.15	J	85	0.25	U	75	inc	0.99	U	0	inc
Benzene	0.26	J	0.3		inc	0.27		inc	10	0.08	U	69	70
Bromodichloromethane	0.16	U	0.016	U	90	0.04	U	75	inc	0.16	U	0	inc
Bromoform	0.19	U	0.019	U	90	0.048	U	75	inc	0.19	U	0	inc
Bromomethane	0.25	U	0.025	U	90	0.063	U	75	inc	0.25	U	0	inc
Carbon disulfide	0.24	U	0.024	U	90	0.06	U	75	inc	0.24	U	0	inc
Carbon tetrachloride	0.15	U	0.015	U	90	0.038	U	75	inc	0.15	U	0	inc
Chlorobenzene	0.12	U	0.013	J	89	0.03	U	75	inc	0.12	U	0	inc
Chlorobromomethane	0.18	U	0.018	U	90	0.045	U	75	inc	0.18	U	0	inc
Chloroethane	0.08	U	0.008	U	90	0.02	U	75	inc	0.08	U	0	inc
Chloroform	17		15		12	12		29	20	7.2		58	40
Chloromethane	0.18	U	0.018	U	90	0.045	U	75	inc	0.18	U	0	inc
cis-1,2-Dichloroethene	0.28	J	0.39		inc	0.38		inc	3	0.06	U	79	84
cis-1,3-Dichloropropene	0.18	U	0.018	U	90	0.045	U	75	inc	0.18	U	0	inc
Dibromochloromethane	0.15	U	0.015	U	90	0.038	U	75	inc	0.15	U	0	inc
Ethylbenzene	0.11	U	0.011	U	90	0.028	U	75	inc	0.11	U	0	inc
Methylene Chloride	0.15	U	0.17	J B	inc	0.038	U	75	78	0.15	U	0	inc
m-Xylene & p-Xylene	0.17	U	0.017	U	90	0.043	U	75	inc	0.17	U	0	inc
o-Xylene	0.12	U	0.012	U	90	0.03	U	75	inc	0.12	U	0	inc
Styrene	0.07	U	0.007	U	90	0.018	U	74	inc	0.07	U	0	inc
Tetrachloroethene	0.36	J	0.38		inc	0.36		0	5	0.13	U	64	64
Toluene	0.15	U	0.015	U	90	0.038	U	75	inc	0.15	U	0	inc
trans-1,2-Dichloroethene	1.1		1.5		inc	1.3		inc	13	0.09	U	92	93
trans-1,3-Dichloropropene	0.21	U	0.021	U	90	0.053	U	75	inc	0.21	U	0	inc
Trichloroethene	0.64	J	0.71		inc	0.71		inc	0	0.18	U	72	75
Vinyl acetate	0.21	U	0.021	U	90	0.053	U	75	inc	0.21	U	0	inc
Vinyl chloride	1	J	1.1		inc	1.2		inc	inc	0.11	U	89	91
1,2-Dichloroethene, Total	1.4		1.9	J	inc	1.7		inc	11	0.3	U	79	82
Xylenes, Total	0.26	U	0.026	U	90	0.065	U	75	inc	0.26	U	0	inc
General Chemistry													
Alkalinity	80		170		inc	37		54	78	160		inc	inc
Total Organic Carbon	4.6		3.2		30	3		35	6	4.6		0	inc
Nitrate as N	0.047	U	0.047	U	0	0.24	U	inc	inc	0.69		inc	inc
Sulfate	590		570		3	440		25	23	900		inc	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-6A

Volatile Organic Compounds and General Chemistry, Area 1 Groundwater Samples, Zone B, Well A1MW-1B

Formosa Pilot Treatability Study

ISCO

Location ID:	A1MW-1B												
Sample Date:	3/17/2014		3/31/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.15	U	0.015	U	90	0.56	J	inc	inc	0.29		inc	48
1,1,2,2-Tetrachloroethane	0.22	U	0.022	U	90	0.44	U	inc	inc	0.022	U	90	95
1,1,2-Trichloroethane	2.4		0.59		75	1.6	J	33	inc	0.4		83	75
1,1-Dichloroethane	2.2		0.34		85	0.82	J	63	inc	0.18		92	78
1,1-Dichloroethene	0.47	J	0.019	U	96	0.38	U	19	inc	0.021	J	96	94
1,2-Dichloroethane	700	B	120	B	83	190		73	inc	27		96	86
1,2-Dichloropropane	0.16	U	0.016	U	90	0.32	U	inc	inc	0.016	U	90	95
2-Butanone (MEK)	0.76	U	0.076	U	90	1.5	U	inc	inc	0.083	J	89	94
2-Hexanone	0.35	U	0.035	U	90	0.7	U	inc	inc	0.035	U	90	95
4-Methyl-2-pentanone (MIBK)	0.45	U	0.045	U	90	0.9	U	inc	inc	0.045	U	90	95
Acetone	0.99	U	0.39	J	61	2	U	inc	inc	0.57		42	72
Benzene	0.58	J	0.013	J	98	0.16	U	72	inc	0.0088	J	98	95
Bromodichloromethane	0.16	U	0.016	U	90	0.32	U	inc	inc	0.016	U	90	95
Bromoform	0.19	U	0.019	U	90	0.38	U	inc	inc	0.019	U	90	95
Bromomethane	0.25	U	0.025	U	90	0.5	U	inc	inc	0.025	U	90	95
Carbon disulfide	0.24	U	0.024	U	90	0.48	U	inc	inc	0.024	U	90	95
Carbon tetrachloride	0.15	U	0.015	U	90	0.3	U	inc	inc	0.015	U	90	95
Chlorobenzene	0.12	U	0.012	U	90	0.24	U	inc	inc	0.012	U	90	95
Chlorobromomethane	0.18	U	0.018	U	90	0.36	U	inc	inc	0.018	U	90	95
Chloroethane	0.08	U	0.008	U	90	0.16	U	inc	inc	0.008	U	90	95
Chloroform	27		4.6	B	83	9.6		64	inc	1.5		94	84
Chloromethane	0.18	U	0.018	U	90	0.36	U	inc	inc	0.018	U	90	95
cis-1,2-Dichloroethene	0.65	J	0.019	J	97	0.12	U	82	inc	0.58		11	inc
cis-1,3-Dichloropropene	0.18	U	0.018	U	90	0.36	U	inc	inc	0.018	U	90	95
Dibromochloromethane	0.15	U	0.015	U	90	0.3	U	inc	inc	0.015	U	90	95
Ethylbenzene	0.11	U	0.011	U	90	0.22	U	inc	inc	0.011	U	90	95
Methylene Chloride	0.15	U	0.065	J B	57	0.3	U	inc	inc	0.015	U	90	95
m-Xylene & p-Xylene	0.17	U	0.017	U	90	0.34	U	inc	inc	0.017	U	90	95
o-Xylene	0.12	U	0.012	U	90	0.24	U	inc	inc	0.012	U	90	95
Styrene	0.07	U	0.007	U	90	0.14	U	inc	inc	0.007	U	90	95
Tetrachloroethene	0.54	J	0.032	J	94	0.26	U	52	inc	0.027	J	95	90
Toluene	0.15	U	0.015	U	90	0.3	U	inc	inc	0.015	U	90	95
trans-1,2-Dichloroethene	1.4		0.04	J	97	0.18	U	87	inc	0.044	J	97	76
trans-1,3-Dichloropropene	0.21	U	0.021	U	90	0.42	U	inc	inc	0.021	U	90	95
Trichloroethene	1.1		0.035	J	97	0.36	U	67	inc	0.19		83	47
Vinyl acetate	0.21	U	0.021	U	90	0.42	U	inc	inc	0.021	U	90	95
Vinyl chloride	1.4	J	0.022	J	98	0.22	U	84	inc	0.16	J	89	27
1,2-Dichloroethene, Total	2.1		0.059	J	97	0.6	U	71	inc	0.62		70	inc
Xylenes, Total	0.26	U	0.026	U	90	0.52	U	inc	inc	0.026	U	90	95
General Chemistry													
Alkalinity	380		430		inc	520		inc	inc	220		42	58
Total Organic Carbon	4		7.3		inc	150		inc	inc	110		inc	27
Nitrate as N	0.047	U	5.2		inc	5.9		inc	inc	3.9		inc	34
Sulfate	620		680		inc	740		inc	inc	490		21	34

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-6B

Volatile Organic Compounds and General Chemistry, Area 1 Groundwater Samples, Zone B, Well A1MW-2B

Formosa Pilot Treatability Study

ISCO

Location ID:	A1MW-2B												
Sample Date:	3/17/2014		3/31/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.15	U	0.015	U	90	0.3	U	inc	inc	0.15	U	0	50
1,1,2,2-Tetrachloroethane	0.22	U	0.022	U	90	0.44	U	inc	inc	0.22	U	0	50
1,1,2-Trichloroethane	2.5		2.7		inc	1.9	J	24	30	1.4		44	26
1,1-Dichloroethane	1.7		1.5		12	0.7	J	59	53	1.1		35	inc
1,1-Dichloroethene	0.59	J	0.57		3	0.38	U	36	33	0.19	U	68	50
1,2-Dichloroethane	560	B	480	B	14	230		59	52	330		41	inc
1,2-Dichloropropane	0.16	U	0.016	U	90	0.32	U	inc	inc	0.16	U	0	50
2-Butanone (MEK)	0.76	U	0.076	U	90	1.5	U	inc	inc	0.76	U	0	49
2-Hexanone	0.35	U	0.035	U	90	0.7	U	inc	inc	0.35	U	0	50
4-Methyl-2-pentanone (MIBK)	0.45	U	0.045	U	90	0.9	U	inc	inc	0.45	U	0	50
Acetone	0.99	U	0.37	J	63	2	U	inc	inc	0.99	U	0	51
Benzene	0.79	J	0.74		6	0.16	U	80	78	0.13	J	84	19
Bromodichloromethane	0.16	U	0.016	U	90	0.32	U	inc	inc	0.16	U	0	50
Bromoform	0.19	U	0.019	U	90	0.38	U	inc	inc	0.19	U	0	50
Bromomethane	0.25	U	0.025	U	90	0.5	U	inc	inc	0.25	U	0	50
Carbon disulfide	0.24	U	0.024	U	90	0.48	U	inc	inc	0.24	U	0	50
Carbon tetrachloride	0.2	J	0.1		50	0.3	U	inc	inc	0.15	U	25	50
Chlorobenzene	0.12	U	0.024	J	80	0.24	U	inc	inc	0.12	U	0	50
Chlorobromomethane	0.18	U	0.018	U	90	0.36	U	inc	inc	0.18	U	0	50
Chloroethane	0.08	U	0.008	U	90	0.16	U	inc	inc	0.08	U	0	50
Chloroform	18		16		11	7		61	56	13		28	inc
Chloromethane	0.18	U	0.018	U	90	0.36	U	inc	inc	0.18	U	0	50
cis-1,2-Dichloroethene	0.58	J	0.64		inc	0.53	J	9	17	0.3	J	48	43
cis-1,3-Dichloropropene	0.18	U	0.018	U	90	0.36	U	inc	inc	0.18	U	0	50
Dibromochloromethane	0.15	U	0.015	U	90	0.3	U	inc	inc	0.15	U	0	50
Ethylbenzene	0.11	U	0.011	U	90	0.22	U	inc	inc	0.11	U	0	50
Methylene Chloride	0.15	U	0.067	J B	55	0.3	U	inc	inc	0.15	U	0	50
m-Xylene & p-Xylene	0.17	U	0.017	U	90	0.34	U	inc	inc	0.17	U	0	50
o-Xylene	0.12	U	0.012	U	90	0.24	U	inc	inc	0.12	U	0	50
Styrene	0.07	U	0.007	U	90	0.14	U	inc	inc	0.07	U	0	50
Tetrachloroethene	0.85	J	0.74		13	0.26	U	69	65	0.13	U	85	50
Toluene	0.15	U	0.015	U	90	0.3	U	inc	inc	0.15	U	0	50
trans-1,2-Dichloroethene	1.1		1.1		0	0.49	J	55	55	0.39	J	65	20
trans-1,3-Dichloropropene	0.21	U	0.021	U	90	0.42	U	inc	inc	0.21	U	0	50
Trichloroethene	1.6		1.5		6	0.36	U	78	76	0.31	J	81	14
Vinyl acetate	0.21	U	0.021	U	90	0.42	U	inc	inc	0.21	U	0	50
Vinyl chloride	0.93	J	0.6		35	0.22	U	76	63	0.11	U	88	50
1,2-Dichloroethene, Total	1.7		1.7		0	1	J	41	41	0.69	J	59	31
Xylenes, Total	0.26	U	0.026	U	90	0.52	U	inc	inc	0.26	U	0	50
General Chemistry													
Alkalinity	360		390		inc	390		inc	0	530		inc	inc
Total Organic Carbon	7.6		100		inc	59		inc	41	170		inc	inc
Nitrate as N	0.047	U	0.047	U	0	0.24	U	inc	inc	4.2		inc	inc
Sulfate	530		710		inc	600		inc	15	940		inc	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-6C

Volatile Organic Compounds and General Chemistry, Area 1 Groundwater Samples, Zone B, Well A1MW-3B

Formosa Pilot Treatability Study

ISCO

Location ID:	A1MW-3B												
Sample Date:	3/17/2014		3/31/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.15	U	0.015	U	90	0.075	U	50	inc	0.038	U	75	49
1,1,2,2-Tetrachloroethane	0.22	U	0.022	U	90	0.11	U	50	inc	0.055	U	75	50
1,1,2-Trichloroethane	1.7		1.6		6	0.8		53	50	7.3		inc	inc
1,1-Dichloroethane	0.9	J	0.62		31	0.16	J	82	74	1.6		inc	inc
1,1-Dichloroethene	0.44	J	0.037	J	92	0.095	U	78	inc	0.048	U	89	49
1,2-Dichloroethane	300	B	240	B	20	58		81	76	68		77	inc
1,2-Dichloropropane	0.16	U	0.016	U	90	0.08	U	50	inc	0.04	U	75	50
2-Butanone (MEK)	0.76	U	0.076	U	90	0.38	U	50	inc	0.2	J	74	47
2-Hexanone	0.35	U	0.035	U	90	0.18	U	49	inc	0.088	U	75	51
4-Methyl-2-pentanone (MIBK)	0.45	U	0.045	U	90	0.23	U	49	inc	0.11	U	76	52
Acetone	0.99	U	1		inc	0.5	U	49	50	2.2		inc	inc
Benzene	0.52	J	0.05	J	90	0.04	U	92	20	0.034	J	93	15
Bromodichloromethane	0.16	U	0.016	U	90	0.08	U	50	inc	0.04	U	75	50
Bromoform	0.19	U	0.019	U	90	0.095	U	50	inc	0.048	U	75	49
Bromomethane	0.25	U	0.025	U	90	0.13	U	48	inc	0.063	U	75	52
Carbon disulfide	0.24	U	0.024	U	90	0.12	U	50	inc	0.06	U	75	50
Carbon tetrachloride	0.15	U	0.058	J	61	0.075	U	50	inc	0.29		inc	inc
Chlorobenzene	0.12	U	0.012	U	90	0.06	U	50	inc	0.03	U	75	50
Chlorobromomethane	0.18	U	0.018	U	90	0.09	U	50	inc	0.045	U	75	50
Chloroethane	0.08	U	0.008	U	90	0.04	U	50	inc	0.02	U	75	50
Chloroform	8.8		7.6		14	1.8		80	76	19		inc	inc
Chloromethane	0.18	U	0.018	U	90	0.09	U	50	inc	0.045	U	75	50
cis-1,2-Dichloroethene	0.31	J	0.052	J	83	0.03	U	90	42	0.052	J	83	inc
cis-1,3-Dichloropropene	0.18	U	0.018	U	90	0.09	U	50	inc	0.045	U	75	50
Dibromochloromethane	0.15	U	0.015	U	90	0.075	U	50	inc	0.038	U	75	49
Ethylbenzene	0.11	U	0.011	U	90	0.055	U	50	inc	0.028	U	75	49
Methylene Chloride	0.15	U	0.055	J B	63	0.075	U	50	inc	0.14	J	7	inc
m-Xylene & p-Xylene	0.17	U	0.017	U	90	0.085	U	50	inc	0.043	U	75	49
o-Xylene	0.12	U	0.012	U	90	0.06	U	50	inc	0.03	U	75	50
Styrene	0.07	U	0.007	U	90	0.035	U	50	inc	0.018	U	74	49
Tetrachloroethene	0.78	J	0.19		76	0.065	U	92	66	0.16	J	79	inc
Toluene	0.15	U	0.015	U	90	0.075	U	50	inc	0.038	U	75	49
trans-1,2-Dichloroethene	0.61	J	0.093	J	85	0.045	U	93	52	0.082	J	87	inc
trans-1,3-Dichloropropene	0.21	U	0.021	U	90	0.11	U	48	inc	0.053	U	75	52
Trichloroethene	1.2		0.18		85	0.09	U	93	50	0.19	J	84	inc
Vinyl acetate	0.21	U	0.021	U	90	0.11	U	48	inc	0.053	U	75	52
Vinyl chloride	0.39	J	0.011	U	97	0.055	U	86	inc	0.028	U	93	49
1,2-Dichloroethene, Total	0.92	J	0.15	J	84	0.15	U	84	0	0.13	J	86	13
Xylenes, Total	0.26	U	0.026	U	90	0.13	U	50	inc	0.065	U	75	50
General Chemistry													
Alkalinity	330		320		3	140		58	56	160		52	inc
Total Organic Carbon	2.6		7.8		inc	0.89	J	66	89	0.47	J	82	47
Nitrate as N	0.047	U	0.047	U	0	2.3		inc	inc	1.3		inc	43
Sulfate	540		550		inc	410		24	25	400		26	2

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-7A

Volatile Organic Compounds and General Chemistry, Area 2 Groundwater Samples, Zone A, Well A2MW-1A

Formosa Pilot Treatability Study

ISCO

Location ID:	A2MW-1A												
Sample Date:	3/17/2014		4/2/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00015	U	0.0075	U	inc	0.0015	U	inc	80	0.003	U	inc	inc
1,1,2,2-Tetrachloroethane	0.00022	U	0.011	U	inc	0.0022	U	inc	80	0.0044	U	inc	inc
1,1,2-Trichloroethane	0.48		0.03	J	94	0.13		73	inc	0.13		73	0
1,1-Dichloroethane	0.67		0.048	J	93	0.25		63	inc	0.27		60	inc
1,1-Dichloroethene	0.00019	U	0.0095	U	inc	0.0087	J	inc	8	0.011	J	inc	inc
1,2-Dichloroethane	67	B	7.6	B	89	9.8		85	inc	14		79	inc
1,2-Dichloropropane	0.00016	U	0.008	U	inc	0.0016	U	inc	80	0.0032	U	inc	inc
2-Butanone (MEK)	0.00076	U	0.038	U	inc	0.0076	U	inc	80	0.015	J	inc	inc
2-Hexanone	0.00035	U	0.018	U	inc	0.0035	U	inc	81	0.007	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.00045	U	0.023	U	inc	0.0045	U	inc	80	0.009	U	inc	inc
Acetone	0.00099	U	0.14	J	inc	0.0099	U	inc	93	0.02	U	inc	inc
Benzene	0.79		0.02	J	97	0.16		80	inc	0.086		89	46
Bromodichloromethane	0.00016	U	0.008	U	inc	0.0016	U	inc	80	0.0032	U	inc	inc
Bromoform	0.00019	U	0.0095	U	inc	0.0019	U	inc	80	0.0038	U	inc	inc
Bromomethane	0.00025	U	0.013	U	inc	0.0025	U	inc	81	0.005	U	inc	inc
Carbon disulfide	0.00063	J	0.012	U	inc	0.0024	U	inc	80	0.0048	U	inc	inc
Carbon tetrachloride	0.00015	U	0.0075	U	inc	0.0015	U	inc	80	0.003	U	inc	inc
Chlorobenzene	0.009		0.006	U	33	0.0023	J	74	62	0.0024	U	73	inc
Chlorobromomethane	0.00018	U	0.009	U	inc	0.0018	U	inc	80	0.0036	U	inc	inc
Chloroethane	0.00045	J	0.004	U	inc	0.0008	U	inc	80	0.0016	U	inc	inc
Chloroform	1.2		0.087		93	0.33		73	inc	0.39		68	inc
Chloromethane	0.00018	U	0.009	U	inc	0.0018	U	inc	80	0.0036	U	inc	inc
cis-1,2-Dichloroethene	0.24		0.01	J	96	0.06		75	inc	0.052		78	13
cis-1,3-Dichloropropene	0.00018	U	0.009	U	inc	0.0018	U	inc	80	0.0036	U	inc	inc
Dibromochloromethane	0.00015	U	0.0075	U	inc	0.0015	U	inc	80	0.003	U	inc	inc
Ethylbenzene	0.0006	J	0.0055	U	inc	0.0011	U	inc	80	0.0022	U	inc	inc
Methylene Chloride	0.028		0.0075	U	73	0.0015	U	95	80	0.003	U	89	inc
m-Xylene & p-Xylene	0.001		0.0085	U	inc	0.0017	U	inc	80	0.0034	U	inc	inc
o-Xylene	0.00034	J	0.006	U	inc	0.0012	U	inc	80	0.0024	U	inc	inc
Styrene	0.00066	J	0.0035	U	inc	0.0007	U	inc	80	0.0014	U	inc	inc
Tetrachloroethene	0.2		0.0074	J	96	0.08		60	inc	0.061		70	24
Toluene	0.0028		0.0075	U	inc	0.0015	U	46	80	0.003	U	inc	inc
trans-1,2-Dichloroethene	0.095		0.0045	U	95	0.026		73	inc	0.029		69	inc
trans-1,3-Dichloropropene	0.00021	U	0.011	U	inc	0.0021	U	inc	81	0.0042	U	inc	inc
Trichloroethene	0.57		0.023	J	96	0.15		74	inc	0.16		72	inc
Vinyl acetate	0.00021	U	0.011	U	inc	0.0021	U	inc	81	0.0042	U	inc	inc
Vinyl chloride	0.65		0.025	J	96	0.1		85	inc	0.034	J	95	66
1,2-Dichloroethene, Total	0.34		0.015	U	96	0.086		75	inc	0.081		76	6
Xylenes, Total	0.0013	U	0.013	U	inc	0.0026	U	inc	80	0.0052	U	inc	inc
General Chemistry													
Alkalinity	660		490		26	930		inc	inc	770		inc	17
Total Organic Carbon	4.3		180		inc	210		inc	inc	160		inc	24
Nitrate as N	0.047	U	2		inc	0.24	U	inc	88	0.0072	U	85	97
Sulfate	120		890		inc	800		inc	10	650		inc	19

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-7B

Volatile Organic Compounds and General Chemistry, Area 2 Groundwater Samples, Zone A, Well A2MW-2A

Formosa Pilot Treatability Study

ISCO

Location ID:	A2MW-2A												
Sample Date:	3/17/2014		4/2/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00015	U	0.00075	U	inc	0.0015	U	inc	inc	0.0015	U	inc	0
1,1,2,2-Tetrachloroethane	0.00022	U	0.0011	U	inc	0.0022	U	inc	inc	0.0022	U	inc	0
1,1,2-Trichloroethane	1.2		0.015		99	0.24		80	inc	0.33		73	inc
1,1-Dichloroethane	1.4		0.014		99	0.18		87	inc	0.31		78	inc
1,1-Dichloroethene	0.00019	U	0.00095	U	inc	0.0033	J	inc	inc	0.011		inc	inc
1,2-Dichloroethane	77	B	0.81	B	99	7.9		90	inc	1.6		98	80
1,2-Dichloropropane	0.00016	U	0.0067		inc	0.0016	U	inc	76	0.0016	U	inc	0
2-Butanone (MEK)	0.00076	U	0.0038	U	inc	0.0076	U	inc	inc	0.021		inc	inc
2-Hexanone	0.00035	U	0.0018	U	inc	0.0035	U	inc	inc	0.0035	U	inc	0
4-Methyl-2-pentanone (MIBK)	0.00062	J	0.0023	U	inc	0.0045	U	inc	inc	0.0045	U	inc	0
Acetone	0.0051		0.037		inc	0.1		inc	inc	0.078		inc	22
Benzene	1.4		0.004	J	100	0.1		93	inc	0.014		99	86
Bromodichloromethane	0.00016	U	0.0008	U	inc	0.0016	U	inc	inc	0.0016	U	inc	0
Bromoform	0.00019	U	0.00095	U	inc	0.0019	U	inc	inc	0.0019	U	inc	0
Bromomethane	0.00025	U	0.0013	U	inc	0.0025	U	inc	inc	0.0025	U	inc	0
Carbon disulfide	0.0011	J	0.0012	U	inc	0.0024	U	inc	inc	0.0024	U	inc	0
Carbon tetrachloride	0.00015	U	0.00075	U	inc	0.0015	U	inc	inc	0.0015	U	inc	0
Chlorobenzene	0.014		0.0006	U	96	0.0012	U	91	inc	0.0072	J	49	inc
Chlorobromomethane	0.00018	U	0.0009	U	inc	0.0018	U	inc	inc	0.0018	U	inc	0
Chloroethane	0.00062	J	0.0004	U	35	0.0008	U	inc	inc	0.0008	U	inc	0
Chloroform	2.7		0.029		99	0.33		88	inc	0.61		77	inc
Chloromethane	0.00018	U	0.0009	U	inc	0.0018	U	inc	inc	0.0018	U	inc	0
cis-1,2-Dichloroethene	0.44		0.0018	J	100	0.04		91	inc	0.065		85	inc
cis-1,3-Dichloropropene	0.00018	U	0.0009	U	inc	0.0018	U	inc	inc	0.0018	U	inc	0
Dibromochloromethane	0.00015	U	0.00075	U	inc	0.0015	U	inc	inc	0.0015	U	inc	0
Ethylbenzene	0.0007	J	0.00055	U	21	0.0011	U	inc	inc	0.0011	U	inc	0
Methylene Chloride	0.082	J	0.00075	U	99	0.0015	U	98	inc	0.0036	J	96	inc
m-Xylene & p-Xylene	0.0014		0.00085	U	39	0.0017	U	inc	inc	0.0017	U	inc	0
o-Xylene	0.00061	J	0.0006	U	2	0.0012	U	inc	inc	0.0012	U	inc	0
Styrene	0.00007	U	0.00035	U	inc	0.0007	U	inc	inc	0.0007	U	inc	0
Tetrachloroethene	0.34		0.0013	J	100	0.022		94	inc	0.2		41	inc
Toluene	0.0044		0.00075	U	83	0.0015	U	66	inc	0.0015	U	66	0
trans-1,2-Dichloroethene	0.18		0.00072	J	100	0.013		93	inc	0.033		82	inc
trans-1,3-Dichloropropene	0.00021	U	0.0011	U	inc	0.0021	U	inc	inc	0.0021	U	inc	0
Trichloroethene	1		0.0042	J	100	0.076		92	inc	0.16		84	inc
Vinyl acetate	0.00021	U	0.0011	U	inc	0.0021	U	inc	inc	0.0021	U	inc	0
Vinyl chloride	1		0.0031	J	100	0.044		96	inc	0.1		90	inc
1,2-Dichloroethene, Total	0.62		0.0025	J	100	0.053		91	inc	0.098		84	inc
Xylenes, Total	0.002	U	0.0013	U	35	0.0026	U	inc	inc	0.0026	U	inc	0
General Chemistry													
Alkalinity	530		200		62	190		64	5	520		2	inc
Total Organic Carbon	5		30		inc	13		inc	57	52		inc	inc
Nitrate as N	0.047	U	2.5		inc	3.1		inc	inc	0.65		inc	79
Sulfate	100		160		inc	140		inc	13	720		inc	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-7C

Volatile Organic Compounds and General Chemistry, Area 2 Groundwater Samples, Zone A, Well A2MW-3A

Formosa Pilot Treatability Study

ISCO

Location ID:	A2MW-3A												
Sample Date:	3/17/2014		4/2/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.00015	U	0.00075	U	inc	0.00015	U	0	80	0.00075	U	inc	inc
1,1,2,2-Tetrachloroethane	0.00022	U	0.0011	U	inc	0.00022	U	0	80	0.0011	U	inc	inc
1,1,2-Trichloroethane	0.041		0.034		17	0.025		39	26	0.097		inc	inc
1,1-Dichloroethane	0.18		0.18		0	0.13		28	28	0.044		76	66
1,1-Dichloroethene	0.0094		0.01		inc	0.0097		inc	3	0.00095	U	90	90
1,2-Dichloroethane	0.55		0.2	B	64	0.047		91	77	2.7		inc	inc
1,2-Dichloropropane	0.00016	U	0.0008	U	inc	0.00016	U	0	80	0.0008	U	inc	inc
2-Butanone (MEK)	0.00076	U	0.0038	U	inc	0.00076	U	0	80	0.017		inc	inc
2-Hexanone	0.00035	U	0.0018	U	inc	0.00035	U	0	81	0.0018	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.00045	U	0.0023	U	inc	0.00045	U	0	80	0.0023	U	inc	inc
Acetone	0.00099	U	0.005	U	inc	0.00099	U	0	80	0.33		inc	inc
Benzene	0.15		0.092		39	0.046		69	50	0.00094	J	99	98
Bromodichloromethane	0.00016	U	0.0008	U	inc	0.00016	U	0	80	0.0008	U	inc	inc
Bromoform	0.00019	U	0.00095	U	inc	0.00019	U	0	80	0.00095	U	inc	inc
Bromomethane	0.00025	U	0.0013	U	inc	0.00025	U	0	81	0.0013	U	inc	inc
Carbon disulfide	0.00024	U	0.0012	U	inc	0.00024	U	0	80	0.0012	U	inc	inc
Carbon tetrachloride	0.00015	U	0.00075	U	inc	0.00015	U	0	80	0.00075	U	inc	inc
Chlorobenzene	0.0024		0.0022	J	8	0.0016		33	27	0.0006	U	75	63
Chlorobromomethane	0.00018	U	0.0009	U	inc	0.00018	U	0	80	0.0009	U	inc	inc
Chloroethane	0.0057		0.0095	J	inc	0.008		inc	16	0.0004	U	93	95
Chloroform	0.18		0.15		17	0.076		58	49	0.11		39	inc
Chloromethane	0.00018	U	0.0009	U	inc	0.00018	U	0	80	0.0009	U	inc	inc
cis-1,2-Dichloroethene	0.06		0.069		inc	0.058		3	16	0.0012	J	98	98
cis-1,3-Dichloropropene	0.00018	U	0.0009	U	inc	0.00018	U	0	80	0.0009	U	inc	inc
Dibromochloromethane	0.00015	U	0.00075	U	inc	0.00015	U	0	80	0.00075	U	inc	inc
Ethylbenzene	0.00044	J	0.00055	U	inc	0.00011	U	75	80	0.00055	U	inc	inc
Methylene Chloride	0.0012	J	0.00075	U	38	0.00015	U	88	80	0.007	J	inc	inc
m-Xylene & p-Xylene	0.00051	J	0.00085	U	inc	0.00017	U	67	80	0.00085	U	inc	inc
o-Xylene	0.00012	U	0.0006	U	inc	0.00012	U	0	80	0.0006	U	inc	inc
Styrene	0.00007	U	0.00035	U	inc	0.00007	U	0	80	0.00035	U	inc	inc
Tetrachloroethene	0.037		0.029		22	0.025		32	14	0.0013	J	96	95
Toluene	0.00052	J	0.00075	U	inc	0.00035	J	33	53	0.00075	U	inc	inc
trans-1,2-Dichloroethene	0.03	J	0.027		10	0.024		20	11	0.00045	U	99	98
trans-1,3-Dichloropropene	0.00021	U	0.0011	U	inc	0.00021	U	0	81	0.0011	U	inc	inc
Trichloroethene	0.16		0.17		inc	0.14		13	18	0.0035	J	98	98
Vinyl acetate	0.00021	U	0.0011	U	inc	0.00021	U	0	81	0.0011	U	inc	inc
Vinyl chloride	0.28		0.3		inc	0.13		54	57	0.00055	U	100	100
1,2-Dichloroethene, Total	0.09		0.096		inc	0.082		9	15	0.0015	U	98	98
Xylenes, Total	0.00051	J	0.0013	U	inc	0.00026	U	49	80	0.0013	U	inc	inc
General Chemistry													
Alkalinity	830		860		inc	830		0	3	130		84	84
Total Organic Carbon	3.5		3.8		inc	2.9		17	24	2.1		40	28
Nitrate as N	0.047	U	0.047	U	0	0.24	U	inc	inc	2.2		inc	inc
Sulfate	110		160		inc	120		inc	25	170		inc	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-8A

Volatile Organic Compounds and General Chemistry, Area 2 Groundwater Samples, Zone B, Well A2MW-1B

Formosa Pilot Treatability Study

ISCO

Location ID:	A2MW-1B												
Sample Date:	3/17/2014		4/2/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.005		0.00075	U	85	0.00015	U	97	80	0.00075	U	85	inc
1,1,2,2-Tetrachloroethane	0.00022	U	0.0011	U	inc	0.00022	U	0	80	0.0011	U	inc	inc
1,1,2-Trichloroethane	0.33		0.098		70	0.21		36	inc	0.33		0	inc
1,1-Dichloroethane	0.36		0.04		89	0.18		50	inc	0.22		39	inc
1,1-Dichloroethene	0.00019	U	0.00095	U	inc	0.0071		inc	inc	0.0016	J	inc	77
1,2-Dichloroethane	2.7	B	0.52	B	81	0.85		69	inc	3.1		inc	inc
1,2-Dichloropropane	0.00016	U	0.0008	U	inc	0.00016	U	0	80	0.0008	U	inc	inc
2-Butanone (MEK)	0.00076	U	0.011		inc	0.021		inc	inc	0.039		inc	inc
2-Hexanone	0.00035	U	0.0018	U	inc	0.00035	U	0	81	0.0018	U	inc	inc
4-Methyl-2-pentanone (MIBK)	0.00045	U	0.0023	U	inc	0.00045	U	0	80	0.0023	U	inc	inc
Acetone	0.00099	U	0.15		inc	0.042		inc	72	0.16		inc	inc
Benzene	0.16		0.002	J	99	0.012		93	inc	0.0056		97	53
Bromodichloromethane	0.0064		0.0008	U	88	0.00016	U	98	80	0.0008	U	88	inc
Bromoform	0.00019	U	0.00095	U	inc	0.00019	U	0	80	0.00095	U	inc	inc
Bromomethane	0.00025	U	0.0013	U	inc	0.00025	U	0	81	0.0013	U	inc	inc
Carbon disulfide	0.00029	J	0.0012	U	inc	0.00059	J	inc	51	0.0012	U	inc	inc
Carbon tetrachloride	0.00015	U	0.00075	U	inc	0.00015	U	0	80	0.00075	U	inc	inc
Chlorobenzene	0.036		0.00065	J	98	0.0059		84	inc	0.0011	J	97	81
Chlorobromomethane	0.00018	U	0.0009	U	inc	0.00018	U	0	80	0.0009	U	inc	inc
Chloroethane	0.00008	U	0.0004	U	inc	0.00008	U	0	80	0.0004	U	inc	inc
Chloroform	0.59		0.13		78	0.38		36	inc	0.42		29	inc
Chloromethane	0.00018	U	0.0009	U	inc	0.00024	J	inc	73	0.0009	U	inc	inc
cis-1,2-Dichloroethene	0.097		0.0018	J	98	0.039		60	inc	0.01		90	74
cis-1,3-Dichloropropene	0.00018	U	0.0009	U	inc	0.00018	U	0	80	0.0009	U	inc	inc
Dibromochloromethane	0.00015	U	0.00075	U	inc	0.00015	U	0	80	0.00075	U	inc	inc
Ethylbenzene	0.00049	J	0.00055	U	inc	0.00011	U	78	80	0.00055	U	inc	inc
Methylene Chloride	0.00033	J	0.00075	U	inc	0.00015	U	55	80	0.0024	J	inc	inc
m-Xylene & p-Xylene	0.00052	J	0.00085	U	inc	0.00017	U	67	80	0.00085	U	inc	inc
o-Xylene	0.00012	U	0.0006	U	inc	0.00012	U	0	80	0.0006	U	inc	inc
Styrene	0.00007	U	0.00035	U	inc	0.00007	U	0	80	0.00035	U	inc	inc
Tetrachloroethene	0.52		0.018		97	0.17		67	inc	0.038		93	78
Toluene	0.0019		0.00075	U	61	0.00032	J	83	57	0.00075	U	61	inc
trans-1,2-Dichloroethene	0.075		0.0017	J	98	0.021		72	inc	0.007		91	67
trans-1,3-Dichloropropene	0.00021	U	0.0011	U	inc	0.00021	U	0	81	0.0011	U	inc	inc
Trichloroethene	0.48		0.009		98	0.11		77	inc	0.037		92	66
Vinyl acetate	0.00021	U	0.0011	U	inc	0.00021	U	0	81	0.0011	U	inc	inc
Vinyl chloride	0.6		0.0044	J	99	0.056		91	inc	0.027		96	52
1,2-Dichloroethene, Total	0.17		0.0035	J	98	0.058		66	inc	0.017		90	71
Xylenes, Total	0.00052	J	0.0013	U	inc	0.00026	U	50	80	0.0013	U	inc	inc
General Chemistry													
Alkalinity	460		330		28	530		inc	inc	310		33	42
Total Organic Carbon	4.2		83		inc	39		inc	53	4.4		inc	89
Nitrate as N	0.047	U	1.9	^	inc	1.8		inc	5	0.64		inc	64
Sulfate	310		610		inc	610		inc	0	300		3	51

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and sample

^ = ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

TABLE B-8B

Volatile Organic Compounds and General Chemistry, Area 2 Groundwater Samples, Zone B, Well A2MW-2B

Formosa Pilot Treatability Study

ISCO

Location ID:	A2MW-2B												
Sample Date:	3/17/2014		4/2/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.0047		0.0015	U	68	0.0015	U	68	0	0.00015	U	97	90
1,1,2,2-Tetrachloroethane	0.00022	U	0.0022	U	inc	0.0022	U	inc	0	0.00022	U	0	90
1,1,2-Trichloroethane	0.41		0.18		56	0.26		37	inc	0.014		97	95
1,1-Dichloroethane	0.43		0.078		82	0.19		56	inc	0.043		90	77
1,1-Dichloroethene	0.00019	U	0.0019	U	inc	0.0037	J	inc	inc	0.0016		inc	57
1,2-Dichloroethane	2.7	B	1.6	B	41	2.1		22	inc	0.069		97	97
1,2-Dichloropropane	0.00016	U	0.0016	U	inc	0.0016	U	inc	0	0.00019	J	inc	88
2-Butanone (MEK)	0.00076	U	0.0076	U	inc	0.0076	U	inc	0	0.077		inc	inc
2-Hexanone	0.00035	U	0.0035	U	inc	0.0035	U	inc	0	0.00091	J	inc	74
4-Methyl-2-pentanone (MIBK)	0.00045	U	0.0045	U	inc	0.0045	U	inc	0	0.00045	U	0	90
Acetone	0.00099	U	0.24		inc	0.054		inc	78	0.26		inc	inc
Benzene	0.16		0.0023	J	99	0.015		91	inc	0.013		92	13
Bromodichloromethane	0.00016	U	0.0016	U	inc	0.0016	U	inc	0	0.00016	U	0	90
Bromoform	0.00019	U	0.0019	U	inc	0.0019	U	inc	0	0.00019	U	0	90
Bromomethane	0.00025	U	0.0025	U	inc	0.0025	U	inc	0	0.00025	U	0	90
Carbon disulfide	0.00079	J	0.0024	U	inc	0.0024	U	inc	0	0.00024	U	70	90
Carbon tetrachloride	0.00015	U	0.0015	U	inc	0.0015	U	inc	0	0.00015	U	0	90
Chlorobenzene	0.036		0.0012	U	97	0.0031	J	91	inc	0.00035	J	99	89
Chlorobromomethane	0.00018	U	0.0018	U	inc	0.0018	U	inc	0	0.00018	U	0	90
Chloroethane	0.00068	J	0.0008	U	inc	0.0008	U	inc	0	0.0028		inc	inc
Chloroform	0.8		0.25		69	0.36		55	inc	0.04		95	89
Chloromethane	0.00018	U	0.0018	U	inc	0.0018	U	inc	0	0.0011	J	inc	39
cis-1,2-Dichloroethene	0.11		0.0024	J	98	0.017		85	inc	0.015		86	12
cis-1,3-Dichloropropene	0.00018	U	0.0018	U	inc	0.0018	U	inc	0	0.00018	U	0	90
Dibromochloromethane	0.00015	U	0.0015	U	inc	0.0015	U	inc	0	0.00015	U	0	90
Ethylbenzene	0.0005	J	0.0011	U	inc	0.0011	U	inc	0	0.00011	U	78	90
Methylene Chloride	0.0034	J	0.0015	U	56	0.0015	U	56	0	0.00035	J	90	77
m-Xylene & p-Xylene	0.00052	J	0.0017	U	inc	0.0017	U	inc	0	0.00017	U	67	90
o-Xylene	0.00012	U	0.0012	U	inc	0.0012	U	inc	0	0.00012	U	0	90
Styrene	0.00007	U	0.0007	U	inc	0.0007	U	inc	0	0.00007	U	0	90
Tetrachloroethene	0.59		0.02		97	0.11		81	inc	0.0042		99	96
Toluene	0.002		0.0015	U	25	0.0015	U	25	0	0.00015	U	93	90
trans-1,2-Dichloroethene	0.094		0.0024	J	97	0.013		86	inc	0.0056		94	57
trans-1,3-Dichloropropene	0.00021	U	0.0021	U	inc	0.0021	U	inc	0	0.00021	U	0	90
Trichloroethene	0.5		0.012		98	0.077		85	inc	0.033		93	57
Vinyl acetate	0.00021	U	0.0021	U	inc	0.0021	U	inc	0	0.00021	U	0	90
Vinyl chloride	0.67		0.0099	J	99	0.047		93	inc	0.034		95	28
1,2-Dichloroethene, Total	0.2		0.0048	J	98	0.03		85	inc	0.021		90	30
Xylenes, Total	0.00052	J	0.0026	U	inc	0.0026	U	inc	0	0.00026	U	50	90
General Chemistry													
Alkalinity	470		52		89	310		34	inc	530		inc	inc
Total Organic Carbon	2.5		10		inc	5.3		inc	47	16		inc	inc
Nitrate as N	0.047	U	0.66	^	inc	1.8		inc	inc	1.4		inc	22
Sulfate	330		580		inc	240		27	59	140		58	42

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and sample

^ = ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

Document Review **Compass Document: GO D00625317** **09/05/17**

Document Summary: General Ledger Entries
Doc Type: GO
Doc No: D00625317
Vendor Code: 856000565D V
IGMS Grant No: 00625317-3
IGMS Budget Start Date: 07/01/2016
IGMS Budget End Date: 06/30/2018
IGMS Project Start Date: 07/01/2016
IGMS Project End Date: 06/30/2018
Order Date: 06/16/16
Closed Date:
Servicing Finance Office: LVFC
Order Amount: $1,272,995.00
Net Paid Amount: $646,428.34
Closed Amount: $646,428.34
Available Amount: $626,566.66
Vendor: NM ENVIRONMENT DEPARTMENT
Alternate Vendor:
Description:
Extended Description:

Document Details: Expand

Line#	Line Amt	Expended Amt	Closed Amt	Refunded Amt	Available Amt	BFY	Fund	Org	Program	Project	FOC	CostOrg	Comments	Extended De
1	$129,272.00	$129,272.00	$129,272.00	$0.00	$0.00	2016	E1	06J3	303D11	n/a	4157		RQ1606JOR003	Amend0
2	$297,750.00	$297,750.00	$297,750.00	$0.00	$0.00	2016	E1	06J3	302D11	n/a	4157		RQ1606JOR003	Amend0
3	$29,636.00	$26,742.36	$26,742.36	$0.00	$2,893.64	20162017	B	06J	303D99	n/a	4157		RQ1706JOR001	Amend1
4	$148,875.00	$134,338.98	$134,338.98	$0.00	$14,536.02	2017	E1	06J3	302D11	n/a	4157		RQ1706JOR004	Amend2
5	$64,636.00	$58,325.00	$58,325.00	$0.00	$6,311.00	2017	E1	06J	303D11	n/a	4157		RQ1706JOR004	Amend2
6	$419,404.00	$0.00	$0.00	$0.00	$419,404.00	2017	E1	06J3	302D11	n/a	4157		RQ1706JOR005	Amend3
7	$183,422.00	$0.00	$0.00	$0.00	$183,422.00	2017	E1	06J3	303D11	n/a	4157		RQ1706JOR005	Amend3

Document Activity:

Warehouse Homepage
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For issues, please contact: The OCFO Sytem Help Desk - OCFO-System-Help@epa.gov or (202) 564-OCFO (6236)

TABLE B-8C

Volatile Organic Compounds and General Chemistry, Area 2 Groundwater Samples, Zone B, Well A2MW-3B

Formosa Pilot Treatability Study

ISCO

Location ID:	A2MW-3B												
Sample Date:	3/17/2014		4/2/2014			4/22/2014				5/12/2014			
	Baseline		Post-1st Injection			Post-2nd Injection				Post-3nd Injection			
Constituent	mg/L	Flag	mg/L	Flag	vs. Baseline (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-1st (% reduction)	mg/L	Flag	vs. Baseline (% reduction)	vs. Post-2nd (% reduction)
Total Volatile Organic Compounds (VOCs) by EPA Method 8260B													
1,1,1-Trichloroethane	0.0075	U	0.006	U	20	0.00075	U	90	88	0.0015	U	80	inc
1,1,2,2-Tetrachloroethane	0.011	U	0.0088	U	20	0.0011	U	90	88	0.0022	U	80	inc
1,1,2-Trichloroethane	0.77		0.74		4	0.86		inc	inc	1		inc	inc
1,1-Dichloroethane	0.81		0.75		7	0.62		23	17	0.88		inc	inc
1,1-Dichloroethene	0.052		0.038	J	27	0.0042	J	92	89	0.024		54	inc
1,2-Dichloroethane	2.8	B	4.5	B	inc	3.2		inc	29	5.3		inc	inc
1,2-Dichloropropane	0.008	U	0.0064	U	20	0.0008	U	90	88	0.0023	J	71	inc
2-Butanone (MEK)	0.038	U	1.7		inc	0.2		inc	88	0.21		inc	inc
2-Hexanone	0.018	U	0.014	U	22	0.0018	U	90	87	0.0035	U	81	inc
4-Methyl-2-pentanone (MIBK)	0.023	U	0.018	U	22	0.0023	U	90	87	0.0045	U	80	inc
Acetone	0.05	U	1.5		inc	0.085		inc	94	0.21		inc	inc
Benzene	0.25		0.22		12	0.018		93	92	0.071		72	inc
Bromodichloromethane	0.008	U	0.0064	U	20	0.0008	U	90	88	0.0085	J	inc	inc
Bromoform	0.0095	U	0.0076	U	20	0.00095	U	90	88	0.0019	U	80	inc
Bromomethane	0.013	U	0.01	U	23	0.0013	U	90	87	0.0025	U	81	inc
Carbon disulfide	0.012	U	0.0096	U	20	0.0012	U	90	88	0.0024	U	80	inc
Carbon tetrachloride	0.0075	U	0.006	U	20	0.00075	U	90	88	0.0015	U	80	inc
Chlorobenzene	0.055		0.04		27	0.0044	J	92	89	0.016		71	inc
Chlorobromomethane	0.009	U	0.0072	U	20	0.0009	U	90	88	0.0018	U	80	inc
Chloroethane	0.004	U	0.0032	U	20	0.0004	U	90	88	0.0008	U	80	inc
Chloroform	2.1		1.9		10	1.6		24	16	2.3		inc	inc
Chloromethane	0.009	U	0.0072	U	20	0.0009	U	90	88	0.0018	U	80	inc
cis-1,2-Dichloroethene	0.2		0.19		5	0.029		86	85	0.11		45	inc
cis-1,3-Dichloropropene	0.009	U	0.0072	U	20	0.0009	U	90	88	0.0018	U	80	inc
Dibromochloromethane	0.0075	U	0.006	U	20	0.00075	U	90	88	0.0015	U	80	inc
Ethylbenzene	0.0055	U	0.0044	U	20	0.00055	U	90	88	0.0011	U	80	inc
Methylene Chloride	0.0075	U	0.006	U	20	0.0047	J	37	22	0.025	J	inc	inc
m-Xylene & p-Xylene	0.0085	U	0.0068	U	20	0.00085	U	90	88	0.0017	U	80	inc
o-Xylene	0.006	U	0.0048	U	20	0.0006	U	90	88	0.0012	U	80	inc
Styrene	0.0035	U	0.0028	U	20	0.00035	U	90	88	0.0007	U	80	inc
Tetrachloroethene	0.83		0.55		34	0.19		77	65	0.4		52	inc
Toluene	0.0075	U	0.006	U	20	0.00075	U	90	88	0.0015	U	80	inc
trans-1,2-Dichloroethene	0.18		0.14		22	0.024		87	83	0.089		51	inc
trans-1,3-Dichloropropene	0.011	U	0.0084	U	24	0.0011	U	90	87	0.0021	U	81	inc
Trichloroethene	0.68		0.47		31	0.097		86	79	0.33		51	inc
Vinyl acetate	0.011	U	0.0084	U	24	0.0011	U	90	87	0.0021	U	81	inc
Vinyl chloride	1.2		0.66		45	0.054		96	92	0.37		69	inc
1,2-Dichloroethene, Total	0.38		0.33		13	0.053		86	84	0.2		47	inc
Xylenes, Total	0.013	U	0.01	U	23	0.0013	U	90	87	0.0026	U	80	inc
General Chemistry													
Alkalinity	510		540		inc	530		inc	2	540		inc	inc
Total Organic Carbon	2.6		5.1		inc	4.9		inc	4	3.4		inc	31
Nitrate as N	0.047	U	0.047	U	0	0.24	U	inc	inc	0.0072	U	85	97
Sulfate	310		350		inc	290		6	17	350		inc	inc

Notes:

1) Flags:

U = analyte was not detected at or above the SDL

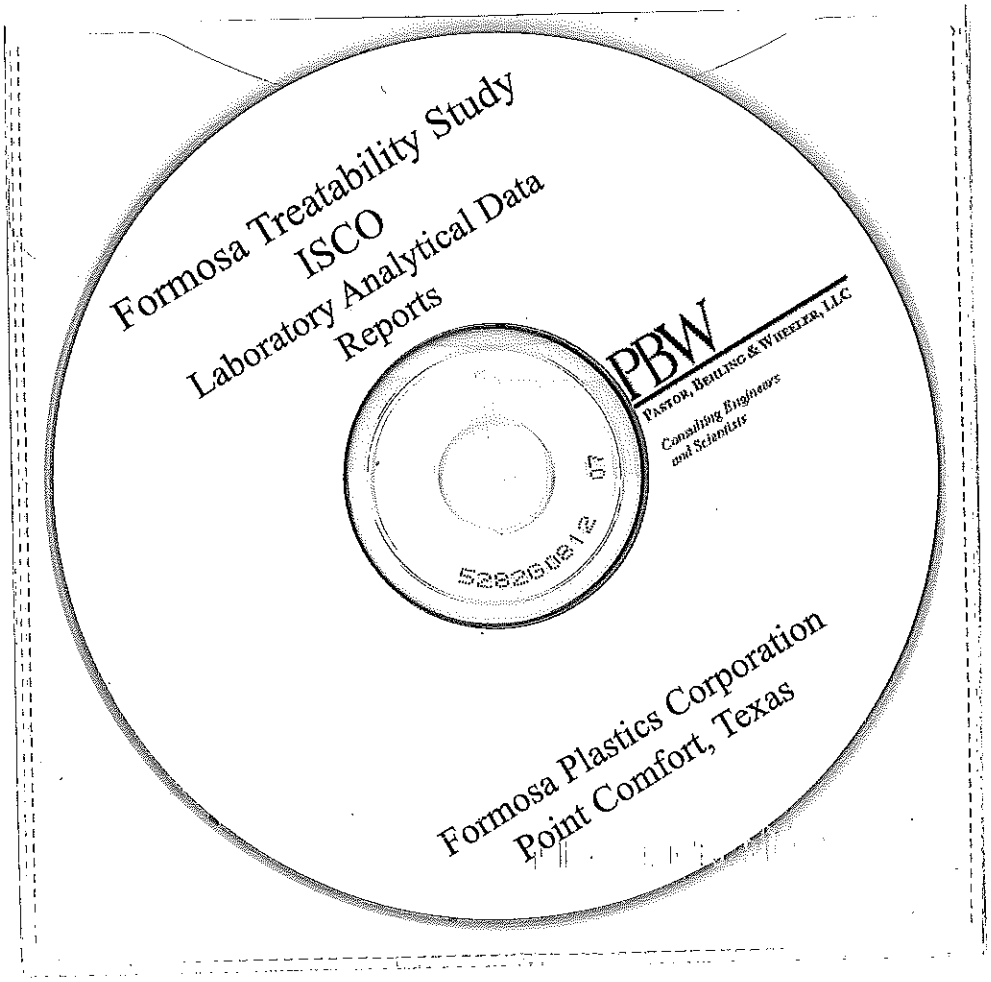
J = result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value

B = compound was found in the blank and sample

2) inc - indicates an increase in the concentration relative to baseline or the previous injection event.

APPENDIX C

Laboratory Analytical Data Reports – ISCO (Electronic Copies)


Formosa Treatability Study
ISCO
Laboratory Analytical Data
Reports
PBW
Pastor, Behling & Wheeler, LLC
Consulting Engineers
and Scientists
Formosa Plastics Corporation
Point Comfort, Texas

APPENDIX D

Pilot-Scale Treatability Testing Report – DPE

GAINCO
ENVIRONMENTAL REMEDIATION

P.O. Box 309
Portland, Texas 78374
Phone 361-643-4378
Fax 866-306-0436

May 15, 2014

Mr. Matt Wickham, PG
Pastor, Behling & Wheeler, LLC
620 E. Airline
Victoria, TX 77901

Re: Phase II Pilot Testing
AOC-1 and AOC-2
Formosa Plant
Point Comfort, TX

Dear Mr. Wickham,

This letter transmits the results of Phase II pilot testing at the above referenced site. In October 2012, Phase I Pilot Testing consisting of soil vapor extraction (SVE), aquifer pump testing, and dual-phase extraction (DPE) was conducted as a preliminary indicative mass removal pilot test. Based on the results of the Phase I testing, Phase II testing, consisting of multi-well high vacuum DPE, was conducted in two areas of concern (AOC) as shown in Attachment 1. The first area was AOC-1 located near Outfall 001 of the former Sanitary Treatment Plant approximately 1600 feet east of the two Ethylene dichloride (EDC) [also know as 1,2-dichloroethane] storage tanks. AOC-1 was the area in which the Phase I testing was performed in 2012. The second area was AOC-2 located approximately 350 south of the two EDC storage tanks and east of the vinyl chloride monomer (VCM) plant.

The purpose of the Phase II pilot test was to gather data to facilitate the potential design by PBW of a DPE remediation system to be used either as a sole remediation technique or in tandem with in-situ chemical oxidation (ISCO) or other technologies. The test apparatus for each AOC consisted of a liquid ring pump connected to a 1-inch (in.) diameter PVC pipe (stinger) inserted into each of the two extraction wells to a depth just below the target groundwater zone. The annular area between the stinger and well casing was sealed at the surface to allow high vacuum DPE to be conducted. The general pilot test arrangement is shown in Attachment 1.

PHASE I PILOT TEST REVIEW

A Phase I pilot test was conducted at the site in October 2012. Three primary parameters were evaluated to determine the relative effectiveness of the three remedial techniques tested:

1) groundwater extraction rate,
2) radius of influence (ROI), and
3) mass removal.

Comparing the aquifer pump test to the DPE test, the average groundwater recovery rate was 0.57 gpm for conventional recovery based on a run-time of only 105 minutes and 0.65 gpm (a 14% increase) for DPE over a similar 105-minute elapsed time. However, the long term groundwater recovery rate under DPE from a single well (after 6 hours of extraction – the length of the DPE test during the Phase I pilot) was 0.42 gpm. The normalized ROI for SVE and DPE

testing was 7.5 ft. and 11.5 ft., respectively, indicating a 53% increase in ROI for DPE relative to conventional SVE. Finally, the clearest indicator of remediation effectiveness is the extraction rate of hydrocarbons from the affected media. Because groundwater recovery is not, in and of itself, a significant hydrocarbon mass removal method, it was not evaluated with respect to hydrocarbon mass removal. Based on the SVE and DPE Phase I data, the hydrocarbon extraction rate was lowest when only SVE was employed (0.07 lb/hr) and was significantly higher when the system was operated in high vacuum DPE mode (0.83 lb/hr – an order of magnitude increase in hydrocarbon mass removal).

The principal contaminant at the site is EDC. The volatility of EDC makes it a viable candidate for remediation via DPE. Although, the low permeability soil reduces the overall influence of vapor phase recovery, DPE remains a viable remedial technique for this site due to the high vapor phase mass removal recorded during the pilot test. Based on the Phase I pilot test data and evaluation, Phase II DPE testing was proposed for this site.

PHASE II PILOT TEST PLAN

Phase II Pilot Testing consisted of two tests (one at AOC-1 and one at AOC-2 as shown on Figure A1-1) extracting from two wells simultaneously for each test. Prior to testing, four extraction wells and eight monitor points were installed (each test area had two extraction wells and four monitor points). The scope of work presented below represents one test area. The scope was repeated for the second test area.

Test Well and Monitoring Point Installation (Scope Repeated for each AOC)

Prior to conducting the Phase II Pilot Test, two temporary 2-in. diameter extraction points were installed in each test area. In addition to the extraction wells, four 1-in. diameter monitor points were installed in each AOC to monitor groundwater level and in-situ vacuum (pressure) prior to and during the test. Based on information provided and field conditions encountered, the top of the thin upper groundwater zone (target zone "Zone A") ranges from approximately 12-17 feet (ft) below ground surface (bgs), with a thickness ranging from approximately 2-3 ft. Construction details for the extraction wells and monitor points is presented in Table 1.

Table 1: Well Construction Details

	AOC – 1	AOC – 2
Extraction Points (EP)		
Descriptions	A1-EP-1 and A1-EP-2	A2-EP-1 and A2-EP-2
Diameter	2 inches	2 inches
Total Depth	17 ft. bgs	20 ft. bgs
Screen/Sandpack	10-17 ft. bgs	13-20 ft. bgs
Bentonite Seal	0-10 ft. bgs	0-13 ft. bgs
Monitor Points (MP)		
Descriptions	A1-MP-1 through 4	A2-MP-1 through 4
Diameter	1 inch	1 inch
Total Depth	20 ft. bgs	20 ft. bgs
Screened Interval	13-20 ft. bgs	13-20 ft. bgs
Bentonite Seal	0-13 ft. bgs	0-13 ft. bgs

Soil cores were collected continuously while drilling for use by the PBW field manager in logging the soil strata, setting the screened interval, screening soil with a photoionization detector (PID) for hydrocarbon vapor, and obtaining samples for laboratory analyses for volatile organic compounds (VOC). The test wells and monitor points were properly plugged and abandoned after completion of the pilot testing.

Background Data Collection (Scope Conducted Concurrently for each Test Area)

Background data was collected over a period of approximately 24 hours prior to the testing. Background data consisted of recording groundwater levels and barometric pressure to establish correlations, if any, between barometric pressure and water levels and to evaluate potential tidal affects. These correlations were used where appropriate to adjust water level data collected during the test.

Phase II Pilot Testing (Scope Repeated for each Test Area)

The pilot test was conducted over 2-days in each area. Testing was initiated by performing a DPE step test followed (in continuous fashion) by DPE testing for approximately 48 hours of testing. The activities conducted during the testing generally consisted of the following.

- A data logging transducer was installed in a nearby well outside the expected influence of the DPE testing to monitor background water level data during the test. A second logging transducer was used to record background barometric pressure during the test.
- DPE testing was conducted by stepping the vacuum up from the minimum required to recover vapors to the maximum vacuum (approximately 2 hours), at which point long term testing was conducted (approximately 46 hours).
- Recovered hydrocarbon vapors were treated with granular activated carbon (GAC).

PILOT TESTING

Phase II pilot testing consisted of background data gathering followed by DPE testing in each AOC. A summary of the pilot test activities is presented below.

Background Data Collection

Background data was collected to evaluate the potential measurable effects of tidal fluctuations and/or barometric pressure on groundwater levels. Barometric data was collected by a data logger strapped to the equipment trailer in an area protected from rain. Tidal influence was recorded by placing a data logger in a well located approximately 200 feet east of the AOC-1 pilot test area.

A graphical summary of the background data is presented below in Figures 1a and 1b for areas AOC-1 and AOC-2, respectively.

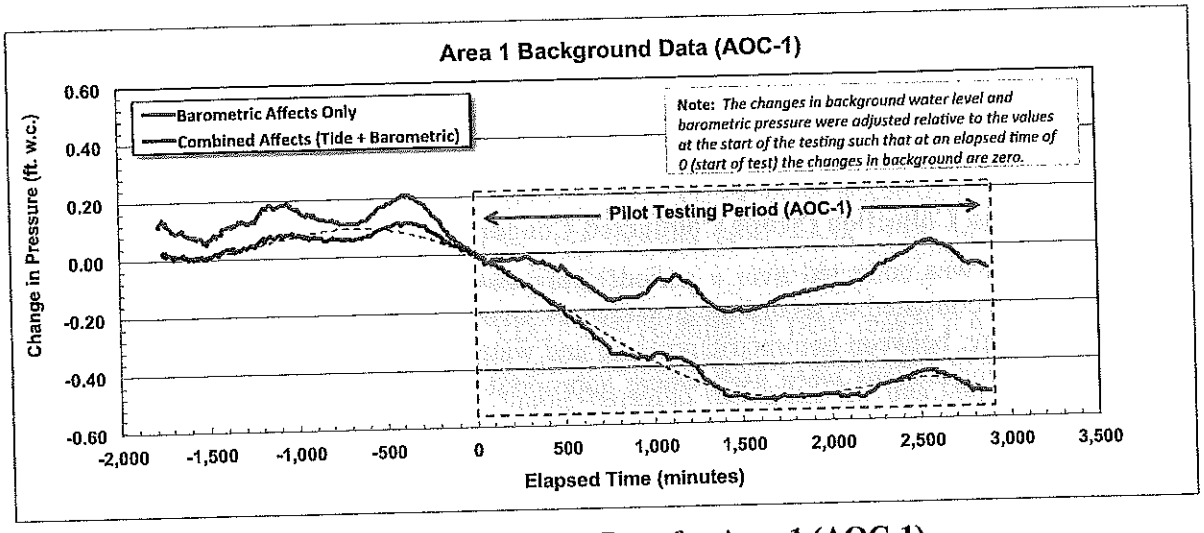


Figure 1a: Background Data for Area 1 (AOC-1)

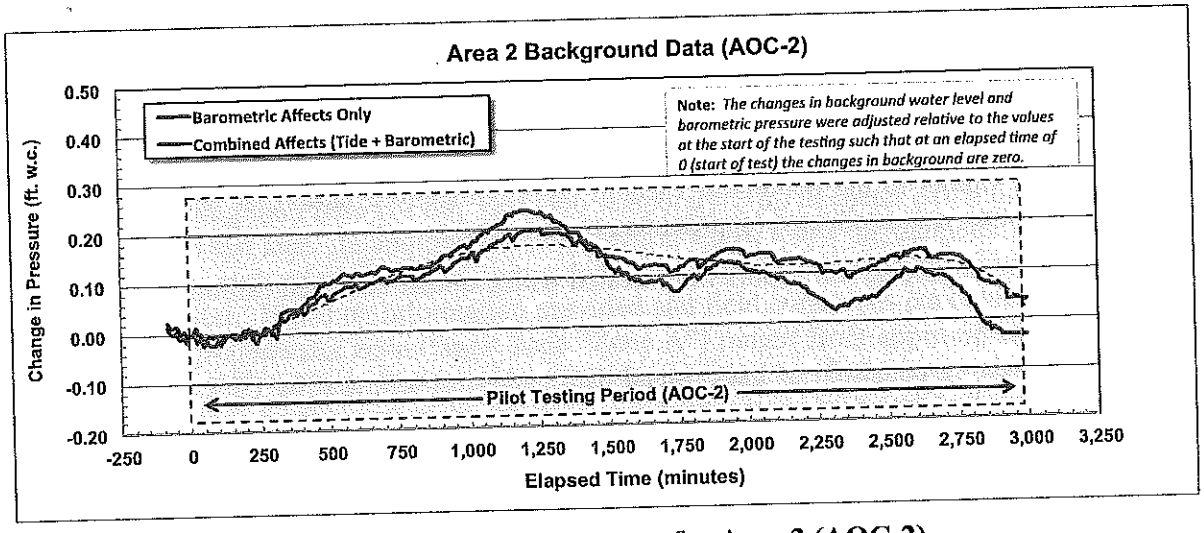


Figure 1b: Background Data for Area 2 (AOC-2)

Pressure transducers such as those used during this test continuously measure pressure. From these measurements, changes in pressure were calculated, and thus, changes from the initial conditions were determined. If the changes due to background affects of barometric pressure and tidal fluctuations are accounted for, then the actual changes due to other influences can be determined (in our case, groundwater drawdown due to pumping from an extraction well). As in the case of this pilot test, the fluctuations recorded by the transducer installed below the groundwater in the background well represent the cumulative fluctuations of pressure incurred due to tidal affects and barometric pressure. Therefore, to correct the transducer readings to represent only those affects from pumping, the actual readings recorded were adjusted for changes in the background water level readings which accounted for the cumulative fluctuations described above.

In Figures 1a and 1b, influences from the changes in barometric pressure and the cumulative affects of barometric pressure plus tidal fluctuations are noticeable. For AOC-1, the maximum

fluctuation due to barometric and combined influences were 0.2221 feet (ft) of water column (w.c.) and 0.529 ft w.c., respectively. For AOC-2, the maximum fluctuation due to barometric and combined influences were 0.2384 feet ft w.c. and 0.1999 ft w.c., respectively.

High Vacuum DPE Testing at Area 1 (AOC-1)

Groundwater Extraction

The DPE test at Area 1 was conducted by extracting from wells A1-EP-1 and A1-EP-2. The Step Test was conducted at applied wellhead vacuums (AWVs) of 5.8 in. mercury (hg.), 11.8 in. hg., and 14.2 in. hg. with the annular area between the stingers and the well casings sealed. Long-term testing was conducted by continuing the third step at an AWV of approximately 14.3 in. hg.

During the test, approximately 1,896 gallons of groundwater was extracted over 48 hours. The groundwater extraction rates for Steps 1 through 3 were 0.48 gpm, 0.68 gpm, 0.95 gpm, with a long term extended extraction rate of 0.65 gpm (starting after the third step). Groundwater extraction data is shown on Figure 2. Tabulated and plotted groundwater recovery and drawdown data is presented in Attachment 2.

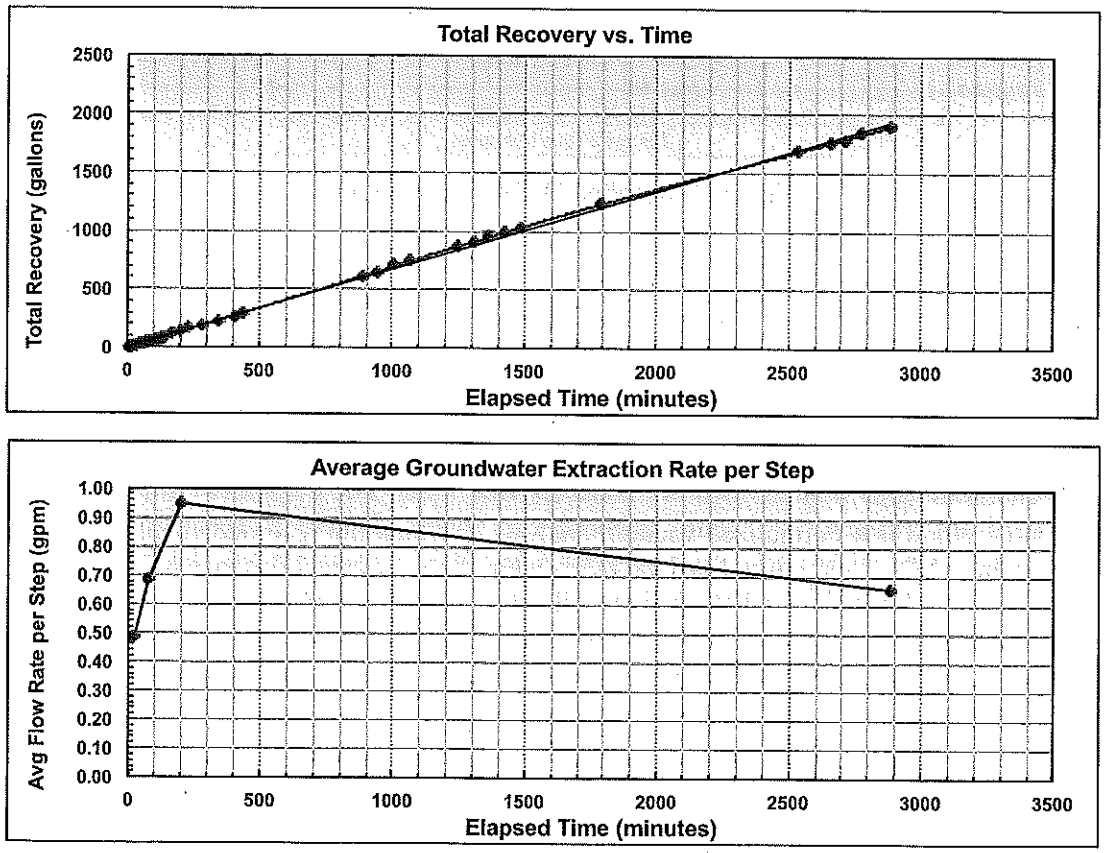


Figure 2: DPE Groundwater Extraction Data

Soil Vacuum and Radius of Influence

As indicated above, the DPE test was conducted at AWVs of 5.8 in. hg., 11.8 in. hg., and 14.3 in. hg. (vacuums varied modestly during each step, values presented here are nominal). Each step was sustained for nominally 1 hour with the final step sustained for the duration of the 48-hour test. Subsurface vacuum readings were taken at monitor points A1-MP-1 through 4. The test data was analyzed to determine soil vapor flow rates, mass removal rates, and radial influence and is presented in Attachment 3. A graphical summary of the vacuum data is shown below in Figure 3. As noted on the figure, measureable vacuum response did not occur until the latter portion of the test.

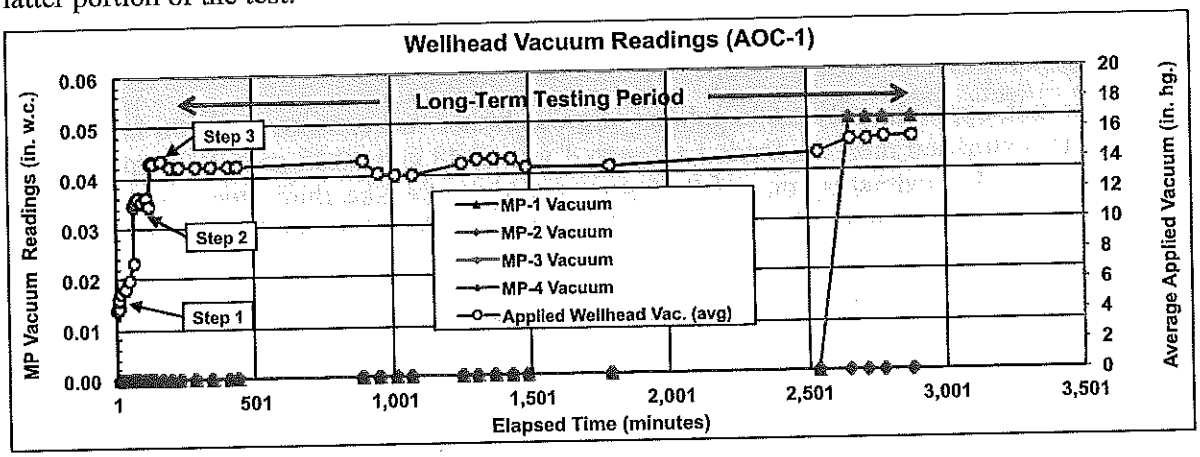


Figure 3: Applied Wellhead Vacuums

The vacuum radius of influence (ROI) was evaluated in two ways.

For the first method of determining ROI, the raw vacuums were plotted versus the distance to the extraction wells (standard vacuum analysis). For the purpose of this multi-well test, the distance was taken as the average distance from the monitor point to the two extraction points. The ROI was taken as the point at which the extrapolated vacuum was 0.1 in. w.c.. Based on this analysis, the extrapolated ROI was approximately 22 feet.

The second method is a normalized vacuum analysis in which the recorded vacuums were each divided by the AWV. The normalized vacuums were plotted against distance as in the standard vacuum analysis. Because the vacuums are all effectively normalized, a single trend line was established and the ROI was taken as the point at which the extrapolated normalized vacuum was 0.01 in. w.c.. The extrapolated ROI using the normalized vacuum analysis was approximately 17 feet.

Graphical data for the standard vacuum analysis and normalized vacuum analysis is presented below in Figures 4 and 5.

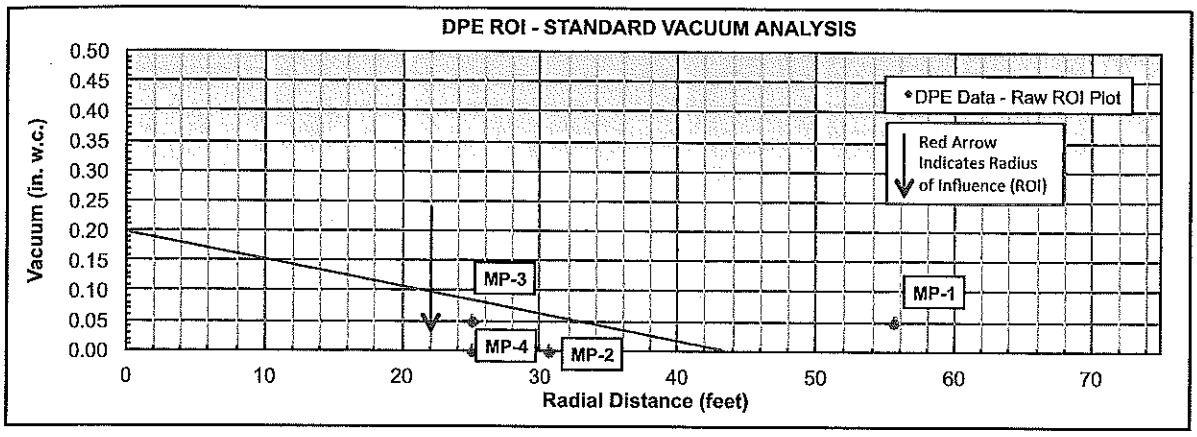


Figure 4: DPE ROI using Standard Vacuum Data

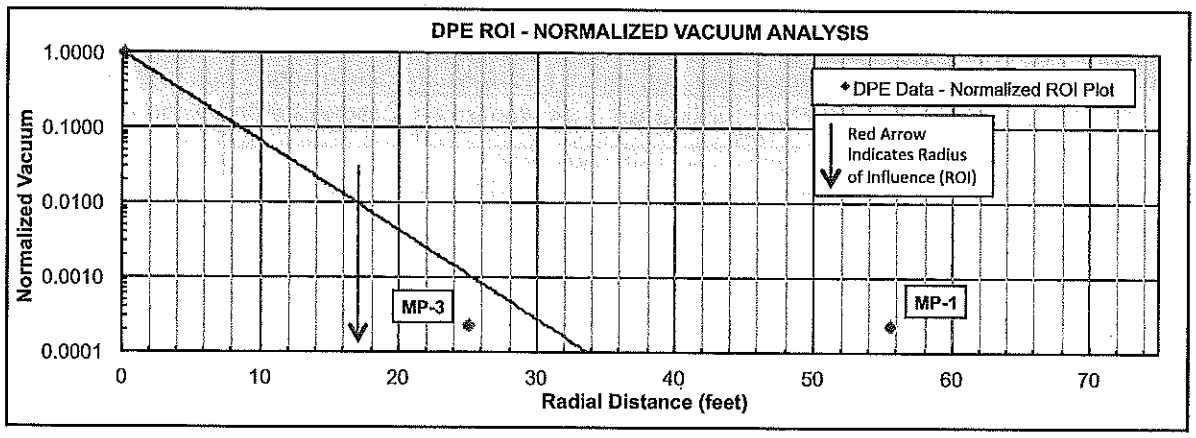


Figure 5: DPE ROI using Normalized Vacuum Data

Soil Vapor Recovery

During the test, the extracted soil vapor was screened for hydrocarbon concentrations using a PID prior to treatment to identify trends in extraction rates. To quantify the hydrocarbon recovery, specifically the recovery of EDC, nine samples were taken of the extracted soil vapor. Each of the nine samples was analyzed for VOC concentrations by EPA Method TO-15 (EDC is among the analytes of the method). A copy of the certified laboratory results for AOC-1 is presented in Attachment 4.

The total hydrocarbon concentration for the laboratory samples was calculated as the sum of the VOCs by Method TO-15. For those analytes where the concentration was below the detection limit, a value of one-half of the detection limit was assigned.

Results of the laboratory analyses ranged from approximately 1,100 ppm to 2,190 ppm for EDC and 1,299 ppm to 2,499 ppm for VOCs as seen on Figure 6 and Table 2 below.

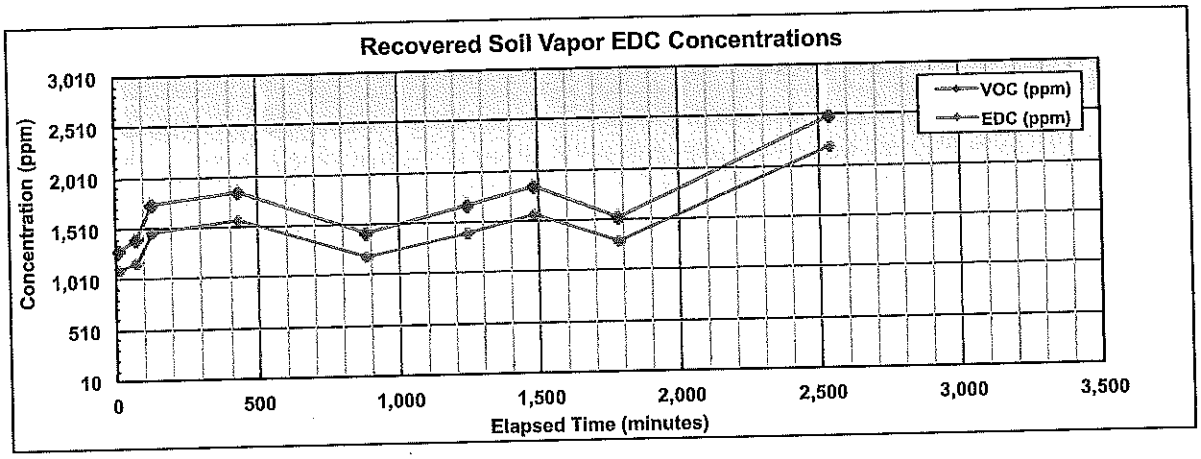


Figure 6: Soil Vapor Concentrations

The concentrations were converted to milligrams per cubic meter (mg/m^3) using the following equation.

$$C\left(\frac{mg}{m^3}\right) = \frac{10^{-6}\, C_{ppm} \times \text{Mol Wt} \times 453592.42\, \frac{mg}{lb} \times 35.314\, \frac{ft^3}{m^3}}{379.56\, \frac{ft^3}{lb\text{-}mol}}$$

The molecular weight (MW) used in the conversion calculation from units of ppm to mg/m^3 was calculated using the concentration of each VOC. The average MW of the recovered soil vapor at AOC-1 was 100.78 lb/mol. A molecular weight of 98.96 lb/mol was used for EDC. The concentration in mg/m^3 was then used along with the vapor flow rate to calculate the mass removal rate using the following equation.

$$\dot{m}\left(\frac{lbs}{hr}\right) = \frac{Q\ scfm \times C\ \frac{mg}{m^3} \times 60\ \frac{min}{hr}}{35.314\ \frac{ft^3}{m^3} \times 453592.42\ \frac{mg}{lb}}$$

At the location where the soil vapor samples were collected, temperature and velocity data were taken using an anenometer to facilitate calculation of flow rate, conversion to standard conditions, and ultimately determination of hydrocarbon mass removal. During the 48-hour DPE test at AOC-1, the mass removal of EDC and total VOCs was an estimated 40.4 pounds (lbs) and 48.2 lbs, respectively for corresponding average recovery rates of 0.84 lbs/hr and 1.00 lbs/hr.

A summary of the extraction flow rates and mass removal data is presented in Table 2.

Table 2: Soil Vapor Data (AOC-1)

Time (min.)	Anal. Type	Flow (scfm)	Concentration EDC (ppm)	Concentration VOC (ppm)	Concentration EDC (mg/m³)	Concentration VOC (mg/m³)	Recovery Rate EDC (lbs/hr)	Recovery Rate VOC (lbs/hr)	Totals (EDC) Per Stage (lbs)	Totals (EDC) Cumulative (lbs)	Totals (VOCs) Per Stage (lbs)	Totals (VOCs) Cumulative (lbs)
0	Est.	40	1,140	1,351	4,761	5,747	0.7133	0.8611	0.0000	0.0001	0.0000	0.000
15	Lab	40	1,100	1,299	4,594	5,523	0.6957	0.8364	0.1761	0.1762	0.2122	0.212
70	Lab	38	1,180	1,404	4,928	5,971	0.6947	0.8417	0.6373	0.8135	0.7691	0.981
125	Lab	25	1,480	1,749	6,181	7,437	0.5717	0.6879	0.5804	1.3939	0.7011	1.682
435	Lab	25	1,570	1,854	6,557	7,886	0.6259	0.7527	3.0937	4.4877	3.7216	5.404
885	Lab	34	1,200	1,427	5,012	6,071	0.6424	0.7782	4.7561	9.2438	5.7408	11.145
1245	Lab	40	1,410	1,692	5,889	7,195	0.8715	1.0649	4.5417	13.7855	5.5292	16.674
1485	Lab	40	1,570	1,866	6,557	7,938	0.9733	1.1783	3.6895	17.4750	4.4863	21.160
1785	Lab	39	1,300	1,536	5,429	6,531	0.7842	0.9434	4.3937	21.8687	5.3042	26.465
2535	Lab	35	2,190	2,499	9,146	10,628	1.1889	1.3816	12.3320	34.2007	14.5310	40.996
2880	Est.	35	1,745	2,017	7,288	8,580	0.9554	1.1248	6.1650	40.3657	7.2058	48.201
DPE Average Soil Vapor Extraction Rate for EDC and VOCs >>							0.8410	1.0042				

Note: "Est" indicates EDC and VOC concentrations were estimated as the average of the two preceding or following concentrations.

A summary of the vapor phase hydrocarbon extraction rates and cumulative mass removal data for EDC is presented in Figure 7.

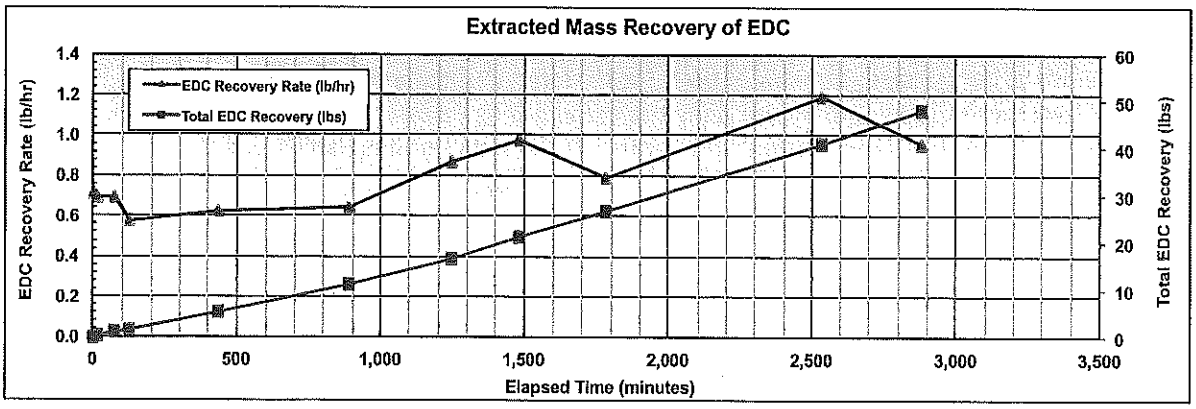


Figure 7: EDC Mass Recovery

High Vacuum DPE Testing at Area 2 (AOC-2)

Groundwater Extraction

The DPE test at Area 2 was conducted by extracting from wells A2-EP-1 and A2-EP-2. The Step Test was conducted at AWVs of 5.5 in. hg., 9.0 in. hg., and 12.6 in. hg. with the annular area between the stingers and the well casings sealed. Long-term testing was conducted by continuing the third step of an AWV of approximately 11.1 in. hg.

During the test, approximately 2,741 gallons of groundwater was extracted over 48 hours. The groundwater extraction rates for Steps 1 through 3 were 0.96 gpm, 1.52 gpm, 2.20 gpm, with a long term extended extraction rate of 0.75 gpm (starting after the third step). Groundwater extraction data is shown on Figure 8. Tabulated and plotted groundwater recovery and drawdown data is presented in Attachment 2.

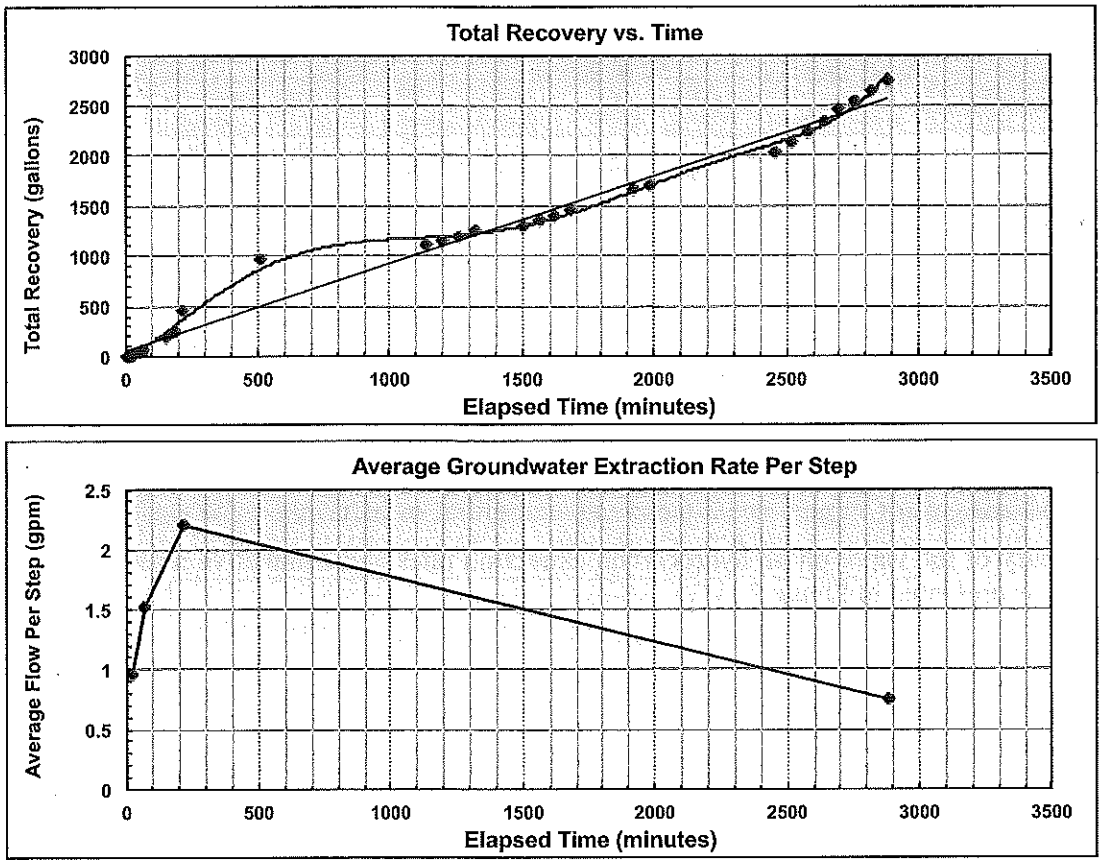


Figure 8: DPE Groundwater Extraction Data

Soil Vacuum and Radius of Influence

As indicated above, the DPE test was conducted at AWVs of 5.5 in. hg., 9.0 in. hg., and 12.6 in. hg. (vacuums varied modestly during each step, values presented here are nominal). Each step was sustained for nominally 1 hour with the final step sustained for the duration of the 48-hour test. Subsurface vacuum readings were taken at monitor points A2-MP-1 through 4. The test data was analyzed to determine soil vapor flow rates, mass removal rates, and radial influence and is presented in Attachment 3. A graphical summary of the vacuum data is shown below in Figure 9.

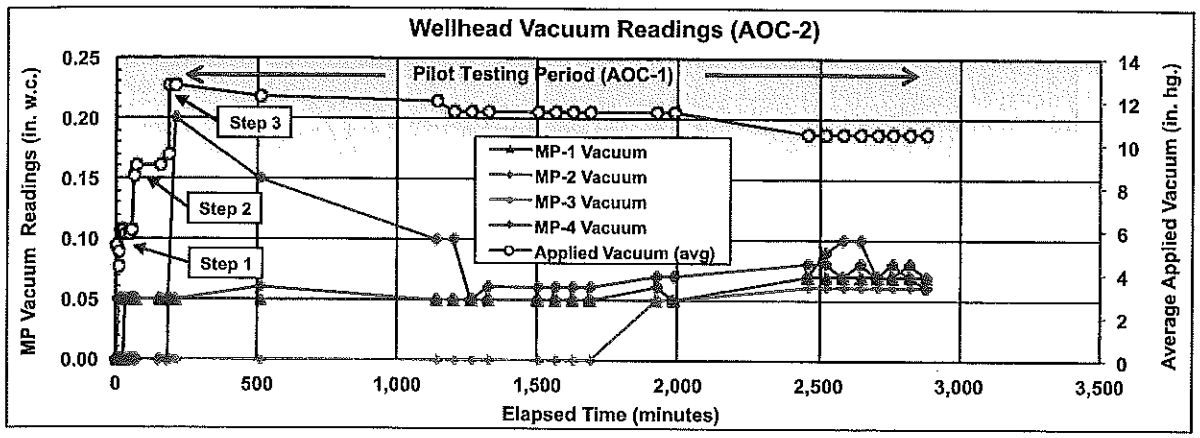


Figure 9: Applied Wellhead Vacuums

As with AOC-1, the vacuum ROI was evaluated in two ways, standard vacuum and normalized vacuum analysis.

For the standard vacuum analysis, the vacuums were plotted versus the average distance to the extraction wells. The ROI was taken as the point at which the extrapolated vacuum was 0.1 in. w.c.. Based on this analysis, the extrapolated ROI was approximately 32 feet.

For the normalized vacuum analysis, the recorded vacuums were each divided by the applied wellhead vacuum and the normalized vacuums were plotted against distance as in the standard vacuum analysis. The ROI was taken as the point at which the extrapolated normalized vacuum was 0.01 in. w.c.. The extrapolated ROI using the normalized vacuum analysis was approximately 21 feet.

Graphical data for the standard vacuum analysis and normalized vacuum analysis is presented below in Figures 10 and 11.

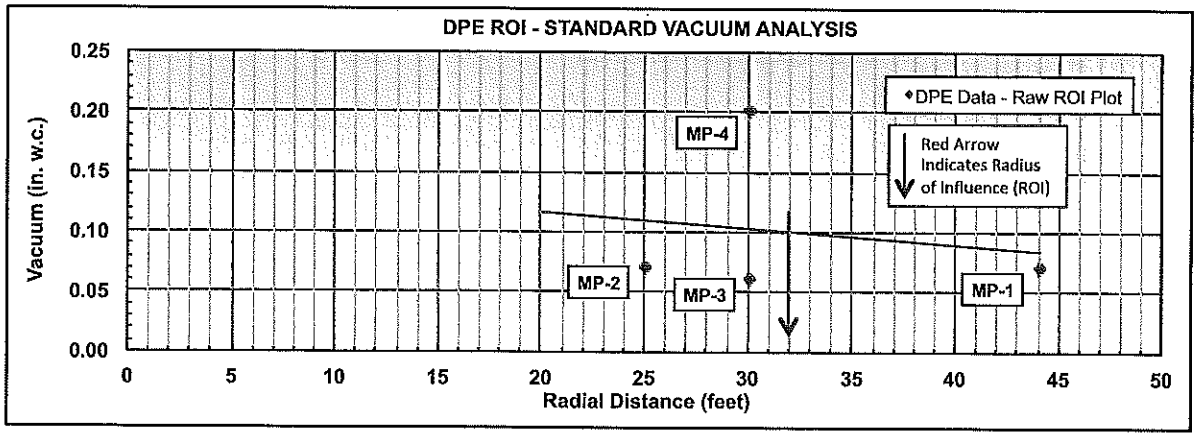


Figure 10: DPE ROI using Standard Vacuum Data

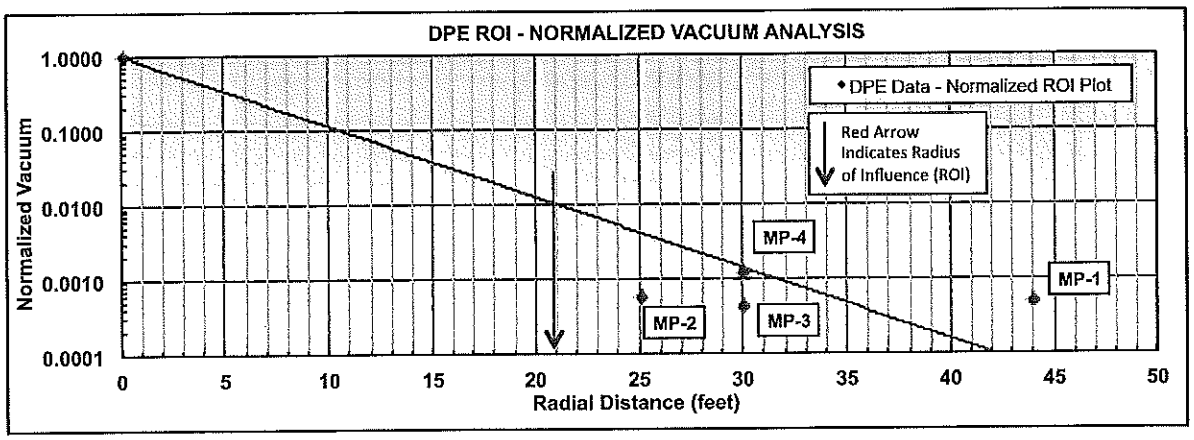


Figure 11: DPE ROI using Normalized Vacuum Data

Soil Vapor Recovery

During the test, the extracted soil vapor was screened for hydrocarbon concentrations using a PID prior to treatment to identify trends in extraction rates. To quantify the hydrocarbon recovery, specifically the recovery of EDC, eleven samples were taken of the soil vapor. Each of the eleven samples was analyzed for VOC concentrations by EPA Method TO-15 (EDC is among the analytes of the method). A copy of the certified laboratory results for AOC-2 is presented in Attachment 5.

The total hydrocarbon concentration for the laboratory samples was calculated as the sum of the VOCs by Method TO-15. For those analytes where the concentration was below the detection limit, a value of one-half of the detection limit was assigned.

Results of the laboratory analyses ranged from approximately 0.17 ppm to 274 ppm for EDC and 0.5 ppm to 328 ppm for VOCs as seen on Figure 12 and Table 3 below.

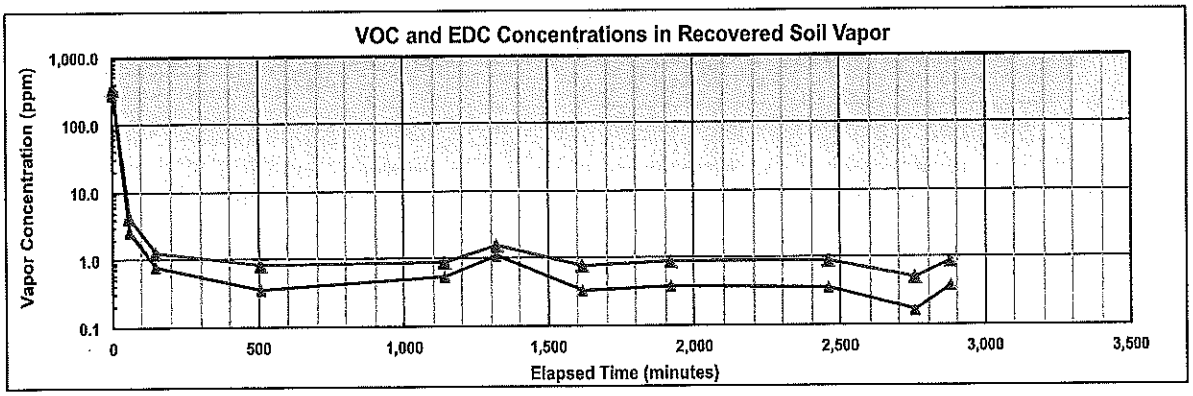


Figure 12: Soil Vapor Concentrations

The concentrations were converted to mg/m^3 as in the case of AOC-1. The average MW of the recovered soil vapor at AOC-2 was calculated to be 101.37 lb/mol using the concentration of each VOC listed in TO-15. The concentration in mg/m^3 was then used along with the vapor flow rate to calculate the mass removal rate.

At the location where the soil vapor samples were collected, temperature and velocity data were taken using an anenometer to facilitate calculation of flow rate and ultimately hydrocarbon mass removal. During the 48-hour DPE test at AOC-2, the mass removal of EDC and total VOCs was an estimated 0.0747 lbs and 0.107 lbs, respectively for corresponding average recovery rates of 0.0016 lbs/hr and 0.0022 lbs/hr.

A summary of the extraction flow rates and mass removal data is presented in Table 3.

Table 3: Soil Vapor Data (AOC-2)

			Concentration				Recovery Rate		Totals (EDC)		Totals (VOCs)	
Time (min.)	Anal. Type	Flow (scfm)	EDC (ppm)	VOC (ppm)	EDC (mg/m³)	VOC (mg/m³)	EDC (lbs/hr)	VOC (lbs/hr)	Per Stage (lbs)	Cumulative (lbs)	Per Stage (lbs)	Cumulative (lbs)
0	Lab	26	274	328	1,144	1,403	0.1103	0.1352	0.0000	0.0001	0.0000	0.000
60	Lab	47	2.58	4.11	10.77	17.58	0.0019	0.0031	0.0561	0.0562	0.0692	0.069
150	Lab	39	0.79	1.28	3.32	5.49	0.0005	0.0008	0.0018	0.0580	0.0029	0.072
510	Lab	41	0.36	0.83	1.50	3.55	0.0002	0.0006	0.0021	0.0601	0.0040	0.076
1140	Lab	50	0.53	0.90	2.21	3.84	0.0004	0.0007	0.0034	0.0635	0.0066	0.083
1320	Lab	52	1.13	1.61	4.72	6.90	0.0009	0.0013	0.0020	0.0655	0.0031	0.086
1620	Lab	55	0.34	0.79	1.41	3.37	0.0003	0.0007	0.0030	0.0685	0.0051	0.091
1920	Lab	55	0.37	0.91	1.55	3.91	0.0003	0.0008	0.0015	0.0701	0.0038	0.095
2460	Lab	57	0.36	0.91	1.50	3.90	0.0003	0.0008	0.0029	0.0729	0.0074	0.102
2760	Lab	64	0.17	0.50	0.70	2.16	0.0002	0.0005	0.0012	0.0742	0.0034	0.106
2880	Lab	65	0.38	0.91	1.59	3.87	0.0004	0.0009	0.0006	0.0747	0.0015	0.107
DPE Average Soil Vapor Extraction Rate for EDC and VOCs >>							0.0016	0.0022				

A summary of the vapor phase hydrocarbon extraction rates and cumulative mass removal data for EDC is presented in Figure 13.

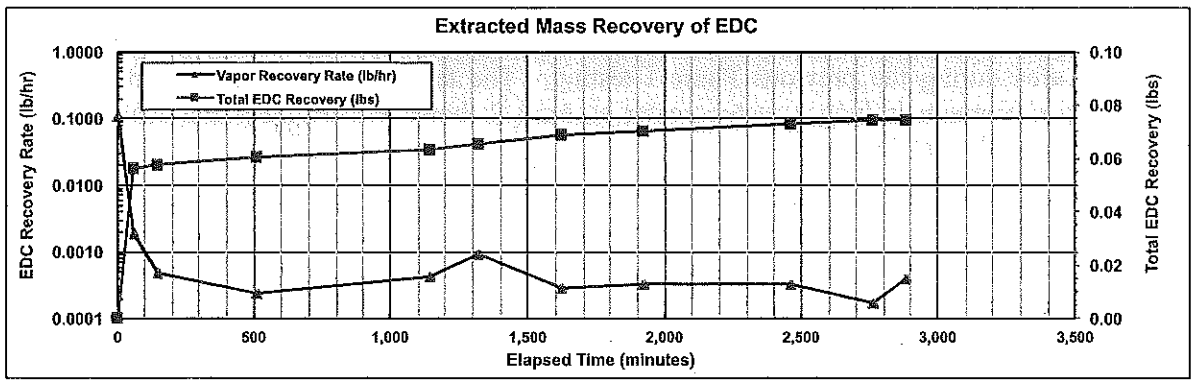


Figure 13: EDC Mass Recovery

WASTE MANAGEMENT

Granular activated carbon (GAC) was used to treat the recovered soil vapor prior to emitting to the atmosphere. The spent GAC remained on-site following the pilot test for characterization and final disposition by others. Additionally, all recovered groundwater was stored in tankage supplied by Formosa plant personnel to be incorporated into the plant waste management program.

SUMMARY

A summary of the pertinent data from the Phase II pilot test is summarized in Table 4 below.

Table 4: Summary of Pilot Test Data

Description	Area 1 (AOC-1)		Area 2 (AOC-2)	
	Applied Well Vac.	GW Ext. Rate	Applied Well Vac.	GW Ext. Rate
Step Test				
Step 1	5.8 in. hg.	0.48 gpm	5.5 in. hg.	0.96 gpm
Step 2	11.8 in. hg.	0.68 gpm	9.0 in. hg.	1.52 gpm
Step 3	14.2 in. hg.	0.95 gpm	12.6 in. hg.	2.20 gpm
Long Term Period				
Applied Wellhead Vacuum	14.3 in. hg.		11.1 in. hg.	
Soil Vapor Flow Rate	35 scfm		56 scfm	
Groundwater Recovery Rate	0.65 gpm		0.75 gpm	
Total Groundwater Recovery	1896 gallons		2741 gallons	
DPE Testing				
Monitor Point Vacuums	Measureable vacuum at 2 points		Measureable vacuum at 4 points	
Vacuum ROI (Standard)	22 feet		32 feet	
Vacuum ROI (Normalized)	17 feet		21 feet	
Soil Vapor Concentrations				
EDC	1100 – 2190 ppm		0.17 – 274 ppm	
VOC	1299 – 2499 ppm		0.50 – 328 ppm	
Soil Vapor Recovery				
EDC	40.4 lbs	0.84 lb/hr	0.075 lbs	0.0016 lb/hr
VOC	48.2 lbs	1.00 lb/hr	0.107 lbs	0.0022 lb/hr

The test data from Phase II testing at Area 1 (AOC-1) closely reproduced the data collected in the same area during the previous Phase I testing. The test data indicates that groundwater recovery and vacuum influence were greater at Area 2; however, the mass removal rate was lower at Area 2 than at Area 1.

The mass removal rate noted during the testing was orders of magnitude greater in AOC-1 as compared to AOC-2. This trend is also represented in the soil and groundwater analytical data for these areas (data included in Attachment 6 for reference). Being the clearest indicator of remediation effectiveness, the mass extraction rate of hydrocarbons confirms DPE to be a viable remediation technique at AOC-1. DPE is not considered a suitable long-term alternative at AOC-2, primarily due to the low overall levels of contaminants in that area; however, if localized 'hot spots' are identifiable, DPE could be used in a mobile fashion to treat 'hot spot' areas.

If you have any questions, please contact me at 210-669-8941 (tweber@gaincoinc.com) or Stas Grover at 210-296-5298 (email: sgrover@gaincoinc.com).

Sincerely,

Tom J Weber, PE
Gainco, Inc.

ATTACHMENT 1

Site Plan and
General Arrangement Plan for Test Apparatus

PO Box 309 • Portland, TX 78374 | Tel: 361.643.4378 | Fax: 866.306.0436
tnix@gaincoinc.com | www.gaincoinc.com

Figure A1-1: Pilot Testing Areas

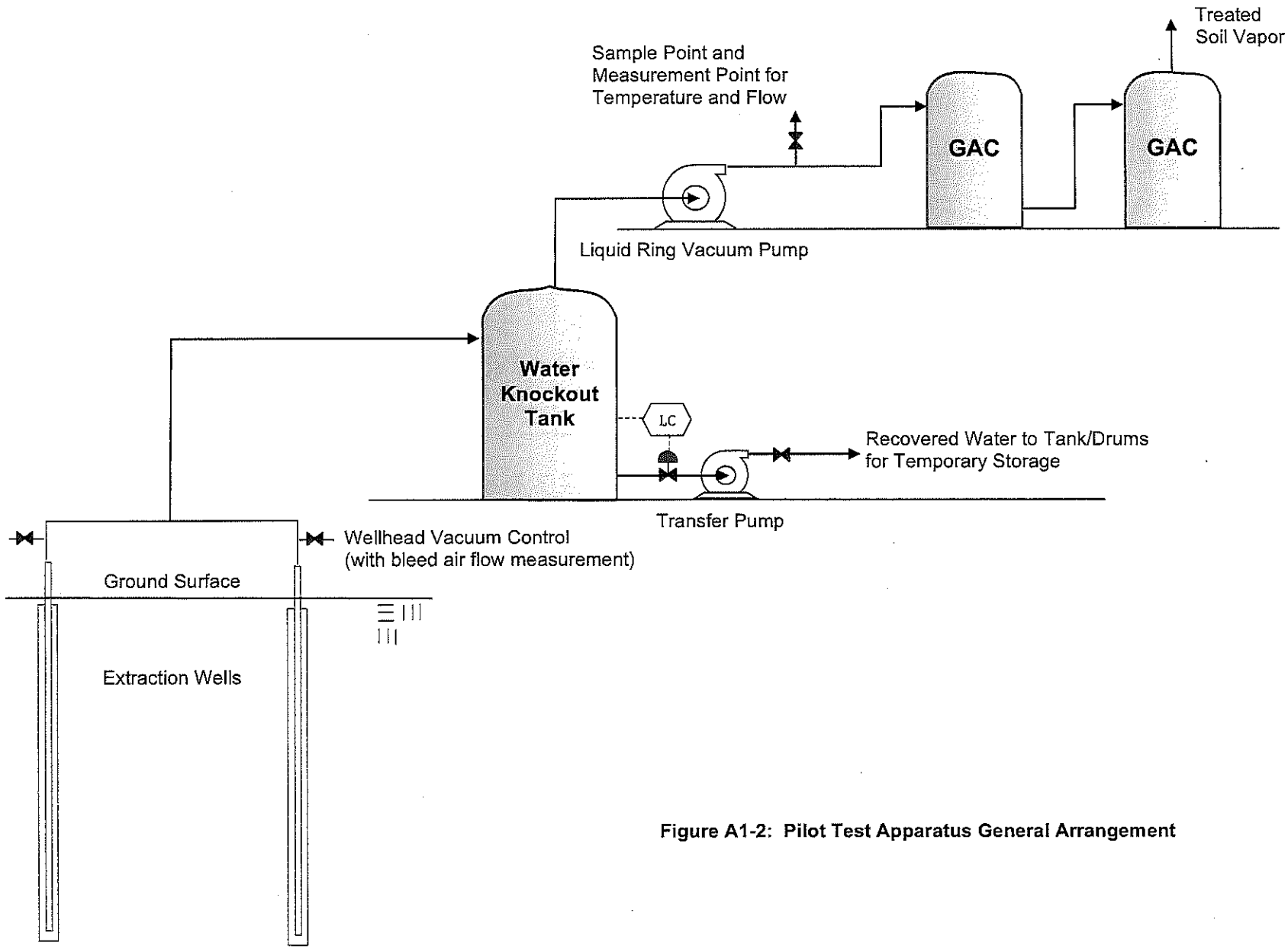


Figure A1-2: Pilot Test Apparatus General Arrangement

ATTACHMENT 2

High Vacuum DPE – Groundwater Data and Analysis

PO Box 309 • Portland, TX 78374 | Tel: 361.643.4378 | Fax: 866.306.0436
tnix@gaincoinc.com | www.gaincoinc.com

PILOT TEST ANALYSIS WORKSHEETS (AOC-1)

AQUIFER PUMP TEST (USING DPE)
FLOW RATE DATA
FORMOSA PLANT
POINT COMFORT, TX

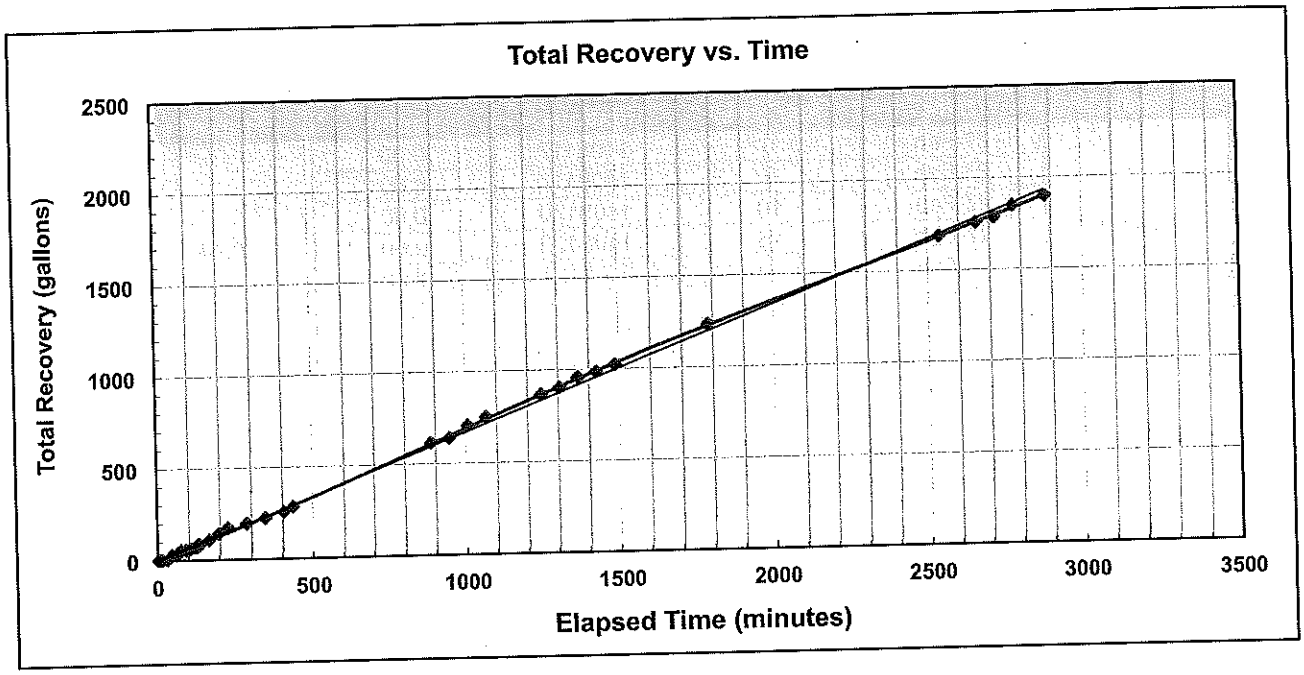
Test Date: **27-Feb-14**
Test Wells: **A1-EP-1 & 2**

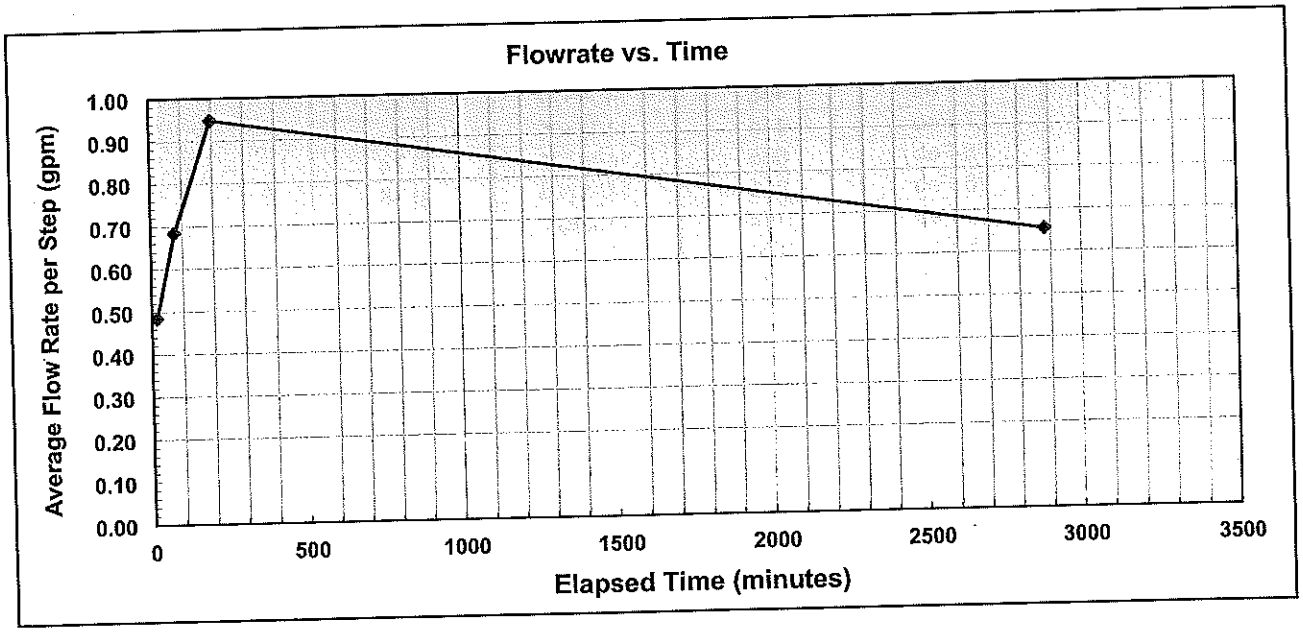
Step	Date	Elapsed Time (minutes)	Meter (gallons)	Incremental Rate (gpm)	Avg. Rate per Step (gpm)	Total Recovery (gallons)
STEP 1	27-Feb	0	1408117	0.00	0.48	0
	27-Feb	5	1408117	0.00		0
	27-Feb	10	1408120	0.60		3
	27-Feb	15	1408120	0.00		3
	27-Feb	30	1408120	0.00		3
	27-Feb	45	1408146	1.73		29
	27-Feb	60	1408146	0.00		29
STEP 2	27-Feb	65	1408158	2.40	0.68	41
	27-Feb	70	1408158	0.00		41
	27-Feb	75	1408170	2.40		53
	27-Feb	90	1408171	0.07		54
	27-Feb	105	1408176	0.33		59
	27-Feb	120	1408187	0.73		70
STEP 3	27-Feb	125	1408187	0.00	0.95	70
	27-Feb	130	1408200	2.60		83
	27-Feb	135	1408200	0.00		83
	27-Feb	165	1408226	0.87		109
	27-Feb	195	1408258	1.07		141
LONG TERM	27-Feb	225	1408290	1.07	0.65	173
	27-Feb	285	1408311	0.35		194
	27-Feb	345	1408340	0.48		223
	27-Feb	405	1408372	0.53		255
	27-Feb	435	1408400	0.93		283
	28-Feb	885	1408731	0.74		614
	28-Feb	945	1408754	0.38		637
	28-Feb	1005	1408822	1.13		705
	28-Feb	1065	1408867	0.75		750
	28-Feb	1245	1408983	0.64		866
	28-Feb	1305	1409018	0.58		901
	28-Feb	1365	1409073	0.92		956
	28-Feb	1425	1409102	0.48		985
	28-Feb	1485	1409139	0.62		1022
	28-Feb	1785	1409350	0.70		1233
	1-Mar	2535	1409804	0.61		1687
	1-Mar	2655	1409874	0.58		1757
	1-Mar	2715	1409901	0.45		1784
	1-Mar	2775	1409964	1.05		1847
	1-Mar	2880	1410013	0.47		1896
					Total (gallons)	**1896**
					Time Weighted Average (gpm)	**0.66**

PILOT TEST ANALYSIS WORKSHEETS (AOC-1)

Test Date: 27-Feb-14
Test Wells: A1-EP-1 & 2

AQUIFER PUMP TEST (USING DPE)
FLOW RATE DATA
FORMOSA PLANT
POINT COMFORT, TX





PILOT TEST ANALYSIS WORKSHEETS (AOC-1)

AQUIFER PUMP TEST (USING DPE)
DATA ANALYSIS WORKSHEET
FORMOSA PLANT
POINT COMFORT, TX

Test Date: **27-Feb-14**
Test Wells: **A1-EP-1 & 2**

$$T = \frac{2.30Q}{1440 \cdot 4\pi \cdot s_{log}} \qquad S = \frac{2.25\ T\ t_0}{7.481 \cdot r^2} \qquad Q = \frac{4\pi}{2.30} * \frac{T\ s}{\mathrm{Log}\left(\frac{2.25\ T\ t}{r^2\ s}\right)}$$

$$K = \frac{T}{7.481 \cdot b} \qquad v = K\,i$$

Cooper - Jacob Approximation
(consistent units)

T = Transmissivity (gpd/ft)
S = Storage Coefficient (unitless)
Q = Pumping Rate (gpm)
K = Hydraulic Conductivity (ft/day)
t_0 = time value at intersection of straight line with zero drawdown (days)
S_{log} = drawdown indicated by straight line over one log cycle (ft)
r = distance from piezometer to pumping well (ft)
b = apparent aquifer thickness (ft)
i = hydraulic gradinet (ft/ft)
v = velocity (flux) of groundwater across aquifer (ft/day)

Reference
Driscoll, Fletcher G. Groundwater and Wells 2nd Edition. St. Paul, MN: Johnson Filtration Systems Inc., 1986.

Piezometer	Q (gpm)	s_{log} (feet)	r (feet)	t_o (min)	t_o (days)	T (gpd/ft)	T (ft^2/day)	S	K (ft/day)
MP-1	1.32	1.850	55.5	40	2.78E-02	188	25.1	0.0005	6.43
MP-2	1.32	1.600	30.5	60	4.17E-02	217	29.0	0.0029	7.43
MP-3	1.32	1.750	25	70	4.86E-02	198	26.5	0.0046	6.80
MP-4	1.32	1.700	25	100	6.94E-02	204	27.3	0.0068	7.00
					Avg.	**202**	**27.0**	**0.0037**	**6.91**

Gradient (*i*)	0.003 ft/ft (AOC 2 Nov. 2012)
Well Bore Radius (feet)	0.344
Max. available drawdown (feet)	3.90
Estimated Max. Well Yield (ft^3/day)	**0.49**
Estimated Max. Well Yield (gpm)	**0.003**
Estimated Max. Well Yield (gpd)	**3.6**

Note: The distance, r, was taken as the average to the two pump wells.

Conductivity, K
K (cm/sec) = 2.44E-03
K (ft/day) = 6.91
Velocity, v
v (ft/day) = 0.017

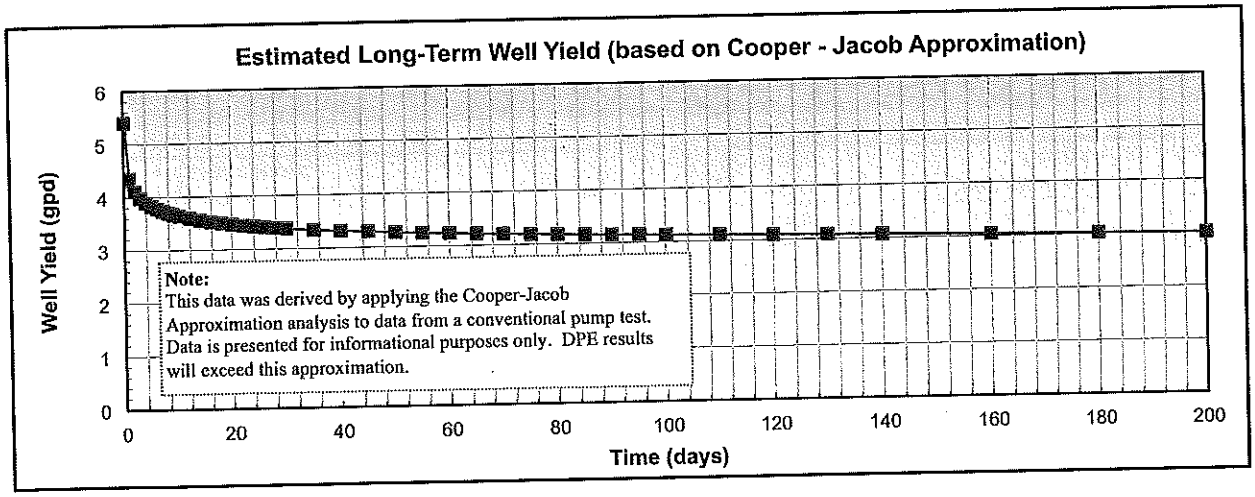
AQUIFER PUMP TEST (USING DPE)
DATA ANALYSIS WORKSHEET
FORMOSA PLANT
POINT COMFORT, TX

Test Date: 27-Feb-14
Test Welsl: A1-EP-1 & 2

$$Q = \frac{4\pi}{2.30} * \frac{T\,s}{\mathrm{Log}\left(\frac{2.25\,T\,t}{r^2\,S}\right)}$$

Time (day)	Well Yield (Q)		
	(ft^3/day)	(gpm)	(gpd)
0.1	0.72	0.004	5.39
1	0.58	0.003	4.34
2	0.55	0.003	4.10
3	0.53	0.003	3.98
4	0.52	0.003	3.89
5	0.51	0.003	3.82
6	0.50	0.003	3.77
7	0.50	0.003	3.73
8	0.49	0.003	3.70
9	0.49	0.003	3.66
10	0.49	0.003	3.64
12	0.48	0.002	3.59
14	0.47	0.002	3.55
16	0.47	0.002	3.52
18	0.47	0.002	3.49
20	0.46	0.002	3.47
22	0.46	0.002	3.44
24	0.46	0.002	3.43
26	0.46	0.002	3.41
28	0.45	0.002	3.39
30	0.45	0.002	3.37

Time (day)	Well Yield (Q)		
	(ft^3/day)	(gpm)	(gpd)
35	0.45	0.002	3.34
40	0.44	0.002	3.31
45	0.44	0.002	3.29
50	0.44	0.002	3.27
55	0.43	0.002	3.25
60	0.43	0.002	3.23
65	0.43	0.002	3.21
70	0.43	0.002	3.20
75	0.43	0.002	3.18
80	0.42	0.002	3.17
85	0.42	0.002	3.16
90	0.42	0.002	3.15
95	0.42	0.002	3.14
100	0.42	0.002	3.13
110	0.42	0.002	3.11
120	0.41	0.002	3.09
130	0.41	0.002	3.08
140	0.41	0.002	3.06
160	0.41	0.002	3.04
180	0.40	0.002	3.02
200	0.40	0.002	3.00



PILOT TEST ANALYSIS WORKSHEETS (AOC-1)

AQUIFER PUMP TEST (USING DPE)
DRAWDOWN DATA
FORMOSA PLANT
POINT COMFORT, TX

Test Date: **27-Feb-14**
Test Wells: **A1-EP-1 & 2**

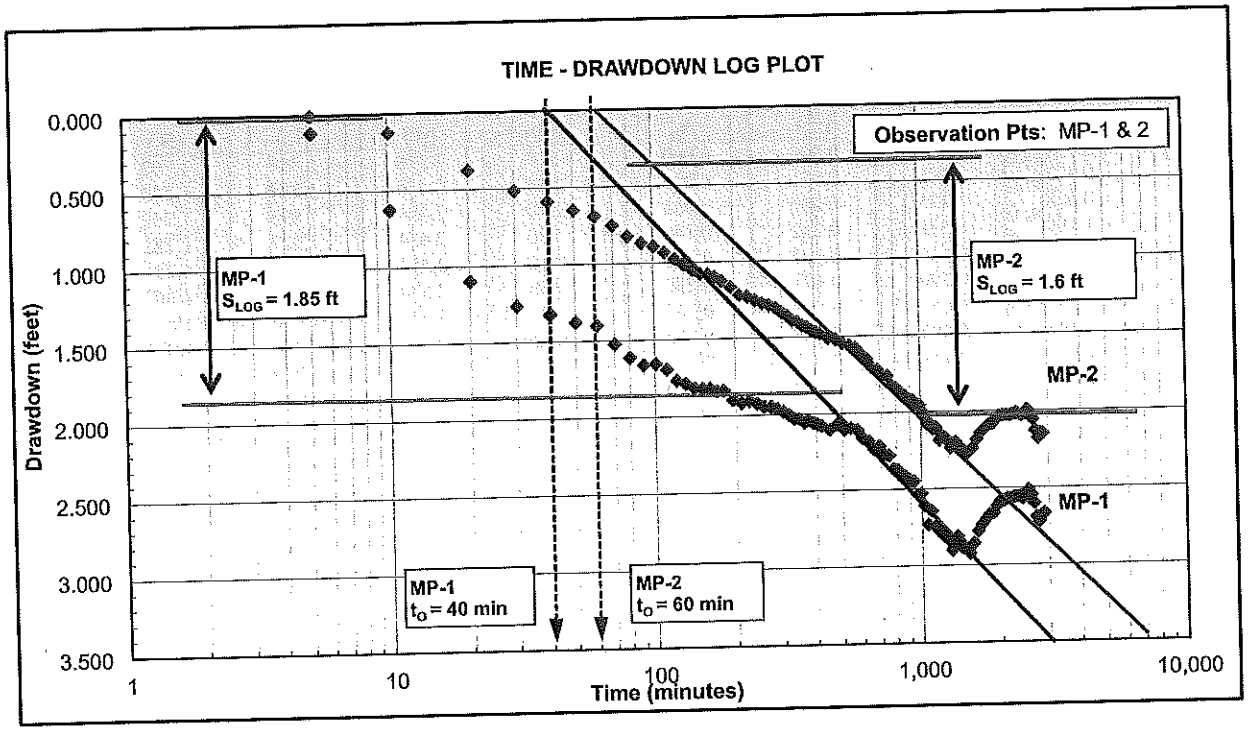
PUMP TEST DRAWDOWN DATA (March 2014)

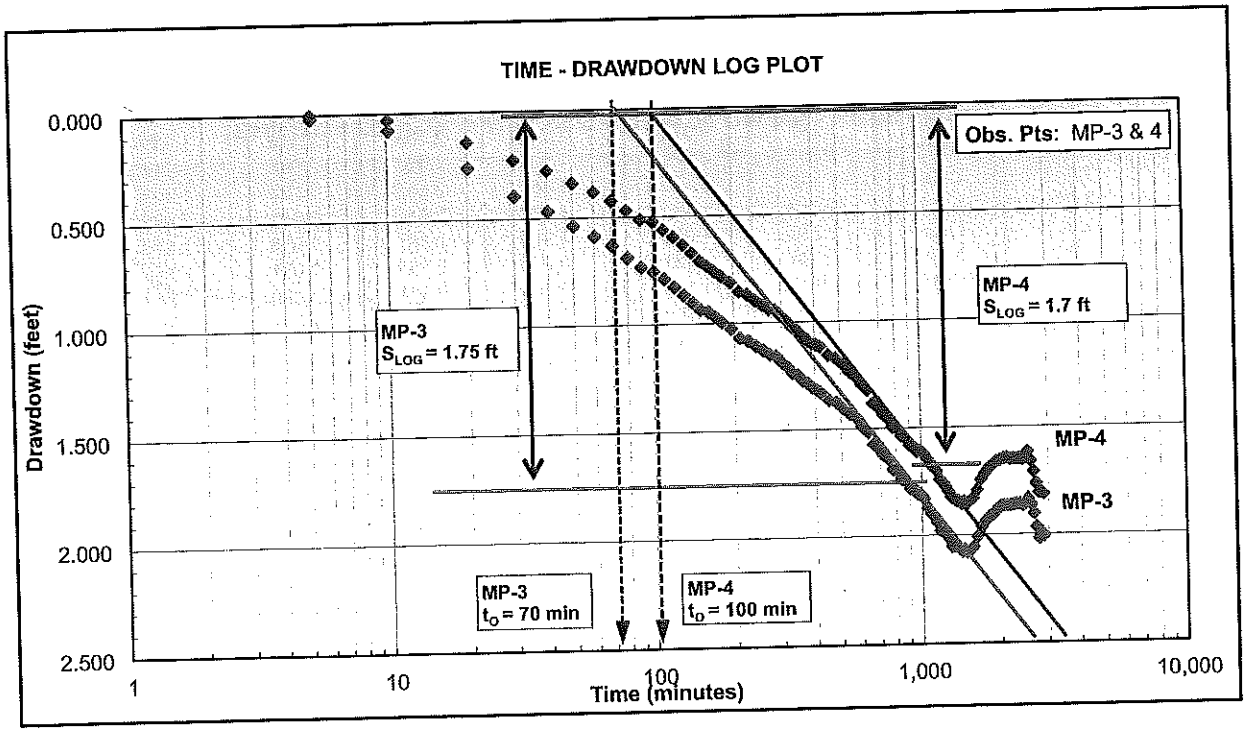
Elapsed Time (min)	Drawdown Data MP-1 (ft.)	MP-2 (ft.)	MP-3 (ft.)	MP-4 (ft.)	Elapsed Time (min)	Drawdown Data MP-1 (ft.)	MP-2 (ft.)	MP-3 (ft.)	MP-4 (ft.)
0	0.000	0.000	0.000	0.000	810	2.378	1.844	1.702	1.501
5	0.122	0.008	0.021	0.005	840	2.416	1.884	1.740	1.538
10	0.628	0.125	0.080	0.032	870	2.424	1.893	1.749	1.547
20	1.100	0.378	0.262	0.140	900	2.454	1.927	1.782	1.581
30	1.267	0.516	0.397	0.227	930	2.452	1.922	1.781	1.585
40	1.325	0.590	0.471	0.280	960	2.538	1.947	1.807	1.611
50	1.378	0.651	0.539	0.339	990	2.533	1.956	1.813	1.610
60	1.402	0.693	0.588	0.382	1,020	2.611	2.004	1.831	1.622
70	1.523	0.754	0.632	0.424	1,050	2.735	2.079	1.874	1.646
80	1.612	0.824	0.690	0.470	1,080	2.647	2.080	1.902	1.675
90	1.663	0.870	0.736	0.513	1,110	2.751	2.115	1.913	1.683
100	1.658	0.893	0.756	0.525	1,140	2.752	2.105	1.943	1.704
110	1.694	0.932	0.792	0.563	1,170	2.793	2.187	1.981	1.742
120	1.767	0.976	0.829	0.597	1,200	2.809	2.160	1.987	1.757
130	1.790	1.013	0.868	0.634	1,230	2.817	2.172	1.999	1.776
140	1.819	1.049	0.903	0.672	1,260	2.840	2.191	2.018	1.798
150	1.824	1.076	0.938	0.710	1,290	2.903	2.238	2.053	1.826
160	1.824	1.080	0.948	0.735	1,320	2.840	2.211	2.050	1.830
170	1.840	1.098	0.972	0.760	1,350	2.813	2.203	2.050	1.844
180	1.839	1.126	0.997	0.783	1,380	2.852	2.226	2.060	1.844
195	1.902	1.167	1.028	0.813	1,410	2.890	2.255	2.077	1.856
210	1.922	1.219	1.072	0.855	1,440	2.881	2.253	2.069	1.847
225	1.910	1.231	1.085	0.869	1,470	2.908	2.270	2.079	1.856
240	1.927	1.255	1.110	0.898	1,500	2.926	2.272	2.077	1.849
255	1.949	1.275	1.130	0.919	1,560	2.859	2.243	2.057	1.832
270	1.950	1.288	1.150	0.940	1,620	2.781	2.185	2.010	1.794
285	1.964	1.306	1.158	0.943	1,680	2.736	2.143	1.965	1.745
300	1.984	1.337	1.187	0.972	1,740	2.703	2.116	1.939	1.716
315	2.003	1.358	1.207	0.994	1,800	2.672	2.093	1.918	1.693
330	2.032	1.390	1.238	1.025	1,860	2.666	2.088	1.908	1.677
345	2.035	1.401	1.249	1.040	1,920	2.617	2.055	1.885	1.662
360	2.057	1.426	1.274	1.064	1,980	2.587	2.038	1.873	1.656
375	2.045	1.436	1.286	1.081	2,040	2.585	2.031	1.868	1.649
390	2.060	1.455	1.307	1.103	2,100	2.571	2.030	1.867	1.646
405	2.069	1.469	1.319	1.109	2,160	2.575	2.031	1.867	1.652
420	2.081	1.480	1.332	1.117	2,220	2.563	2.024	1.864	1.651
450	2.107	1.511	1.367	1.156	2,280	2.560	2.018	1.860	1.651
480	2.074	1.520	1.379	1.173	2,340	2.559	2.022	1.860	1.649
510	2.108	1.545	1.407	1.202	2,400	2.573	2.031	1.866	1.653
540	2.098	1.560	1.433	1.237	2,460	2.559	2.024	1.859	1.643
570	2.112	1.575	1.450	1.262	2,520	2.518	1.995	1.835	1.618
600	2.168	1.623	1.492	1.298	2,580	2.551	2.020	1.865	1.661
630	2.188	1.654	1.519	1.323	2,640	2.604	2.061	1.905	1.711
660	2.241	1.710	1.576	1.384	2,700	2.692	2.134	1.968	1.766
690	2.220	1.722	1.596	1.405	2,760	2.721	2.182	2.021	1.810
720	2.276	1.762	1.628	1.437	2,820	2.680	2.149	2.003	1.808
750	2.282	1.763	1.645	1.458	2,880	2.670	2.153	2.008	1.815
780	2.371	1.828	1.693	1.497					

PILOT TEST ANALYSIS WORKSHEETS (AOC-1)

Test Date: 27-Feb-14
Test Wells: A1-EP-1 & 2

AQUIFER PUMP TEST (USING DPE)
TIME-DRAWDOWN DATA PLOTS
FORMOSA PLANT
POINT COMFORT, TX





PILOT TEST ANALYSIS WORKSHEETS (AOC-2)

AQUIFER PUMP TEST (USING DPE)
FLOW RATE DATA
FORMOSA PLANT
POINT COMFORT, TX

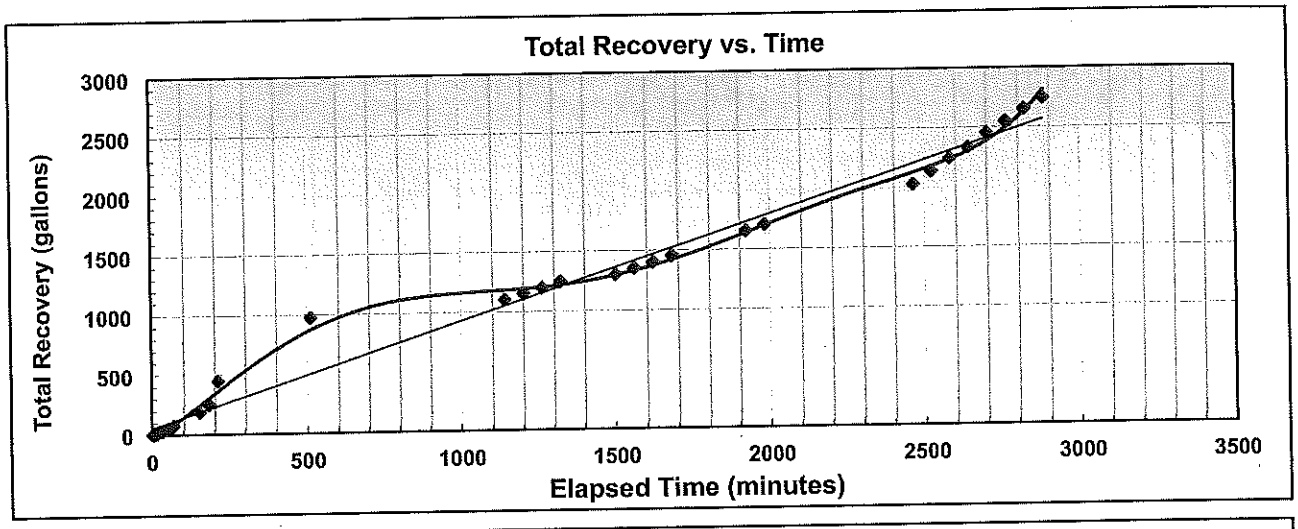
Test Date: **Mar. 5, 2014**
Test Wells: **A2-EP-1 & 2**

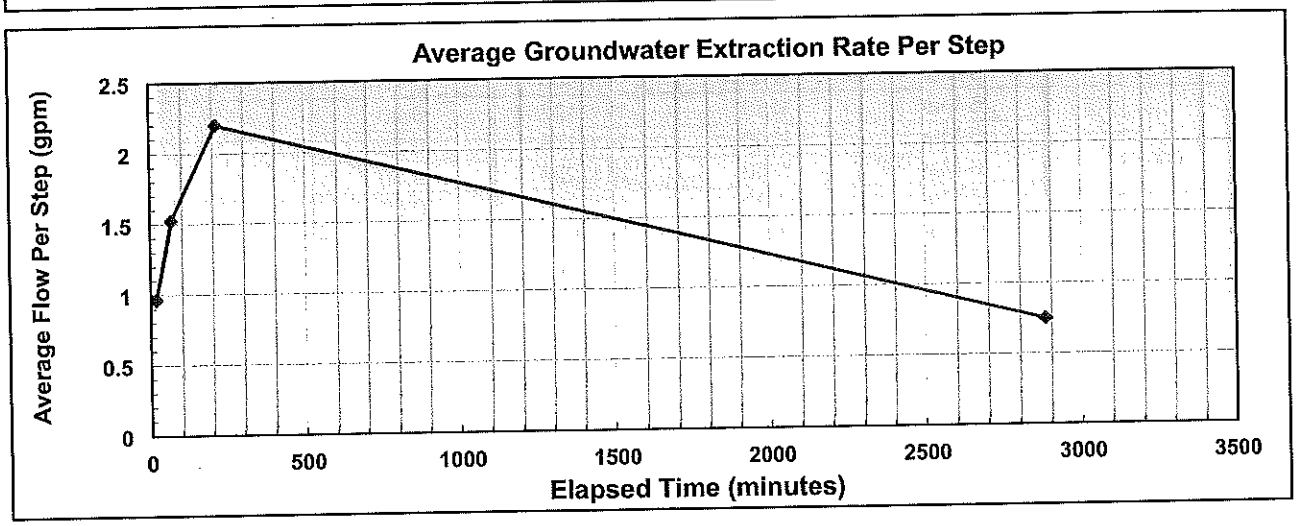
Step	Date	Elapsed Time (minutes)	Meter (gallons)	Incremental Rate (gpm)	Avg. Rate per Step (gpm)	Total Recovery (gallons)
STEP 1	5-Mar	0	1410029	---	0.96	0
	5-Mar	5	1410029	0.00		0
	5-Mar	10	1410040	2.20		11
	5-Mar	15	1410040	0.00		11
	5-Mar	20	1410053	2.60		24
	5-Mar	30	1410053	0.00		24
	5-Mar	45	1410077	1.60		48
	5-Mar	50	1410077	0.00		48
STEP 2	5-Mar	60	1410089	1.20	1.52	60
	5-Mar	65	1410101	2.40		72
	5-Mar	150	1410212	1.31		183
	5-Mar	180	1410275	2.10		246
STEP 3	5-Mar	181	1410275	0.00	2.20	246
	5-Mar	210	1410475	6.90		446
	5-Mar	510	1411000	1.75		971
LONG TERM	6-Mar	1140	1411128	0.20	0.75	1099
	6-Mar	1200	1411176	0.80		1147
	6-Mar	1260	1411224	0.80		1195
	6-Mar	1320	1411274	0.83		1245
	6-Mar	1500	1411325	0.28		1296
	6-Mar	1560	1411377	0.87		1348
	6-Mar	1620	1411426	0.82		1397
	6-Mar	1680	1411479	0.88		1450
	6-Mar	1920	1411681	0.84		1652
	6-Mar	1980	1411732	0.84		1703
	7-Mar	2460	1412053	0.67		2024
	7-Mar	2520	1412161	1.80		2132
	7-Mar	2580	1412269	1.80		2240
	7-Mar	2640	1412361	1.53		2332
	7-Mar	2700	1412478	1.95		2449
	7-Mar	2760	1412577	1.65		2548
	7-Mar	2820	1412678	1.68		2649
	7-Mar	2880	1412770	1.53		2741
					Total (gallons)	**2741**
					Time Weighted Average (gpm)	**0.95**

PILOT TEST ANALYSIS WORKSHEETS (AOC-2)

Test Date: **Mar. 5, 2014**
Test Wells: **A2-EP-1 & 2**

AQUIFER PUMP TEST (USING DPE)
FLOW RATE DATA
FORMOSA PLANT
POINT COMFORT, TX





AQUIFER PUMP TEST (USING DPE)
DATA ANALYSIS WORKSHEET
FORMOSA PLANT
POINT COMFORT, TX

Test Date: **Mar. 5, 2014**
Test Wells: **A2-EP-1 & 2**

$$T = \frac{2.30\,Q}{1440 \cdot 4\pi \cdot s_{log}} \qquad S = \frac{2.25\,T\,t_0}{7.481 \cdot r^2} \qquad Q = \frac{4\pi}{2.30} * \frac{T\,s}{\mathrm{Log}\left(\frac{2.25\,T\,t}{r^2\,S}\right)}$$

$$K = \frac{T}{7.481 \cdot b} \qquad v = K\,i$$

Cooper - Jacob Approximation
(consistent units)

T = Transmissivity (gpd/ft)
S = Storage Coefficient (unitless)
Q = Pumping Rate (gpm)
K = Hydraulic Conductivity (ft/day)
t_0 = time value at intersection of straight line with zero drawdown (days)
S_{log} =drawdown indicated by straight line over one log cycle (ft)
r = distance from piezometer to pumping well (ft)
b = apparent aquifer thickness (ft)
i = hydraulic gradinet (ft/ft)
v = velocity (flux) of groundwater across aquifer (ft/day)

Reference
Driscoll, Fletcher G. Groundwater and Wells 2nd Edition. St. Paul, MN: Johnson Filtration Systems Inc., 1986.

Piezometer	Q (gpm)	s_{log} (feet)	r (feet)	t_o (min)	t_o (days)	T (gpd/ft)	T (ft²/day)	S	K (ft/day)
MP-1	1.90	1.400	44	10.5	7.29E-03	358	47.9	0.0004	12.28
MP-2	1.90	2.150	25	18	1.25E-02	233	31.2	0.0014	8.00
MP-3	1.90	1.900	30	6	4.17E-03	264	35.3	0.0004	9.05
MP-4	1.90	1.750	30	30	2.08E-02	287	38.3	0.0020	9.83
					Avg.	**286**	**38.2**	**0.0010**	**9.79**

Gradient (*i*) 0.003 ft/ft (AOC 2 Nov. 2012)

Well Bore Radius (feet)	0.344
Max. available drawdown (feet)	3.90
Estimated Max. Well Yield (ft³/day)	**0.62**
Estimated Max. Well Yield (gpm)	**0.003**
Estimated Max. Well Yield (gpd)	**4.6**

Note: The distance, r, was taken as the average to the two pump wells.

Conductivity, K
K (cm/sec) = 3.45E-03
K (ft/day) = 9.79
Velocity, v
v (ft/day) = 0.024

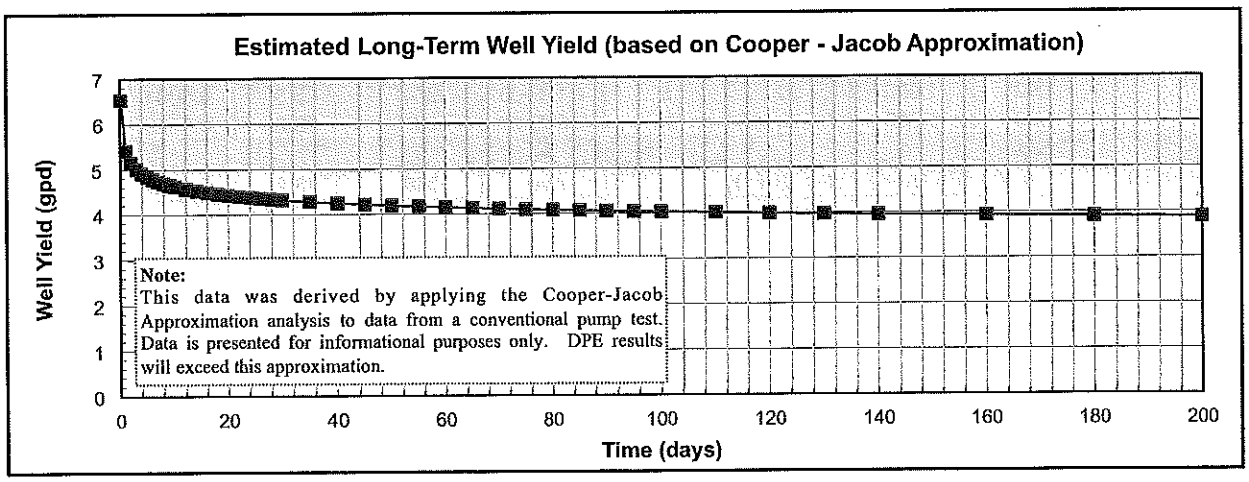
AQUIFER PUMP TEST (USING DPE)
DATA ANALYSIS WORKSHEET
FORMOSA PLANT
POINT COMFORT, TX

Test Date: **Mar. 5, 2014**
Test Wells: **A2-EP-1 & 2**

$$Q = \frac{4\pi}{2.30} * \frac{T\,s}{\mathrm{Log}\left(\frac{2.25\,T\,t}{r^2\,S}\right)}$$

Time (day)	Well Yield (Q) (ft³/day)	(gpm)	(gpd)
0.1	0.87	0.00	6.53
1	0.72	0.00	5.41
2	0.69	0.00	5.15
3	0.67	0.00	5.00
4	0.66	0.00	4.91
5	0.65	0.00	4.83
6	0.64	0.00	4.77
7	0.63	0.00	4.73
8	0.63	0.00	4.69
9	0.62	0.00	4.65
10	0.62	0.00	4.62
12	0.61	0.00	4.57
14	0.60	0.00	4.52
16	0.60	0.00	4.49
18	0.60	0.00	4.45
20	0.59	0.00	4.43
22	0.59	0.00	4.40
24	0.59	0.00	4.38
26	0.58	0.00	4.36
28	0.58	0.00	4.34
30	0.58	0.00	4.32

Time (day)	Well Yield (Q) (ft³/day)	(gpm)	(gpd)
35	0.57	0.00	4.28
40	0.57	0.00	4.25
45	0.56	0.00	4.22
50	0.56	0.00	4.19
55	0.56	0.00	4.17
60	0.55	0.00	4.15
65	0.55	0.00	4.13
70	0.55	0.00	4.11
75	0.55	0.00	4.10
80	0.55	0.00	4.08
85	0.54	0.00	4.07
90	0.54	0.00	4.05
95	0.54	0.00	4.04
100	0.54	0.00	4.03
110	0.54	0.00	4.01
120	0.53	0.00	3.99
130	0.53	0.00	3.97
140	0.53	0.00	3.96
160	0.53	0.00	3.93
180	0.52	0.00	3.90
200	0.52	0.00	3.88



Test Date: **Mar. 5, 2014**
Test Wells: **A2-EP-1 & 2**

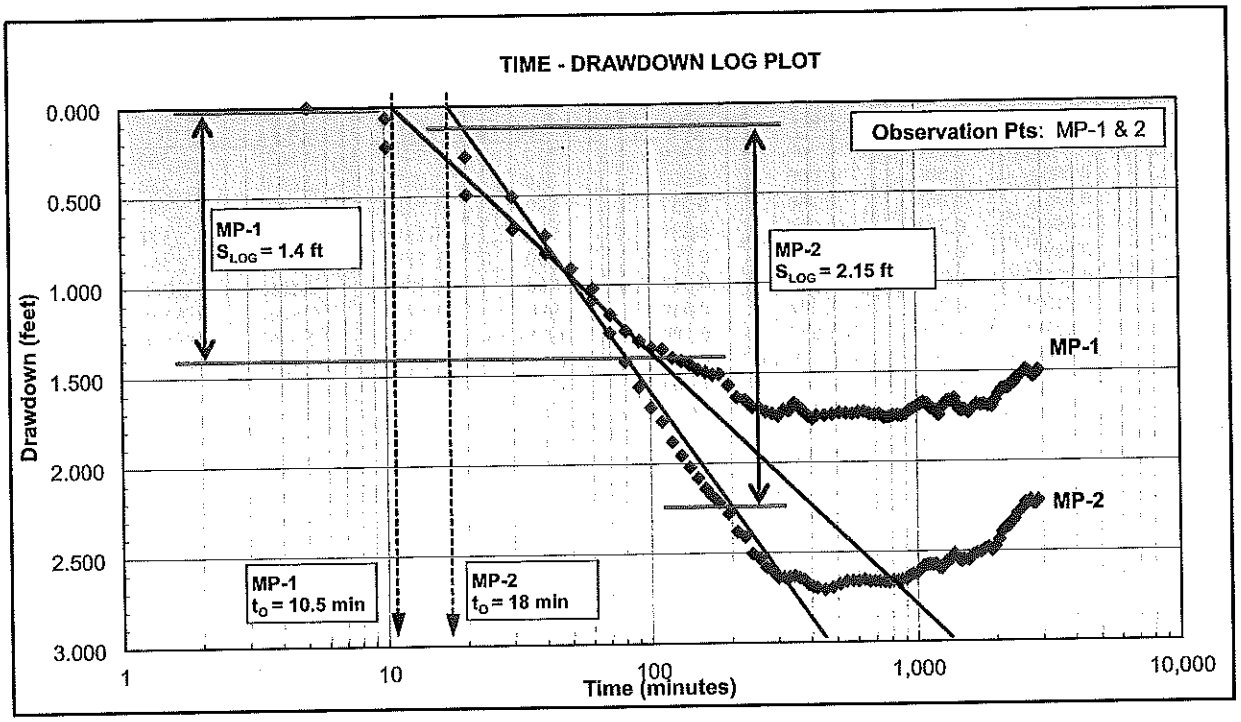
AQUIFER PUMP TEST (USING DPE)
DRAWDOWN DATA
FORMOSA PLANT
POINT COMFORT, TX

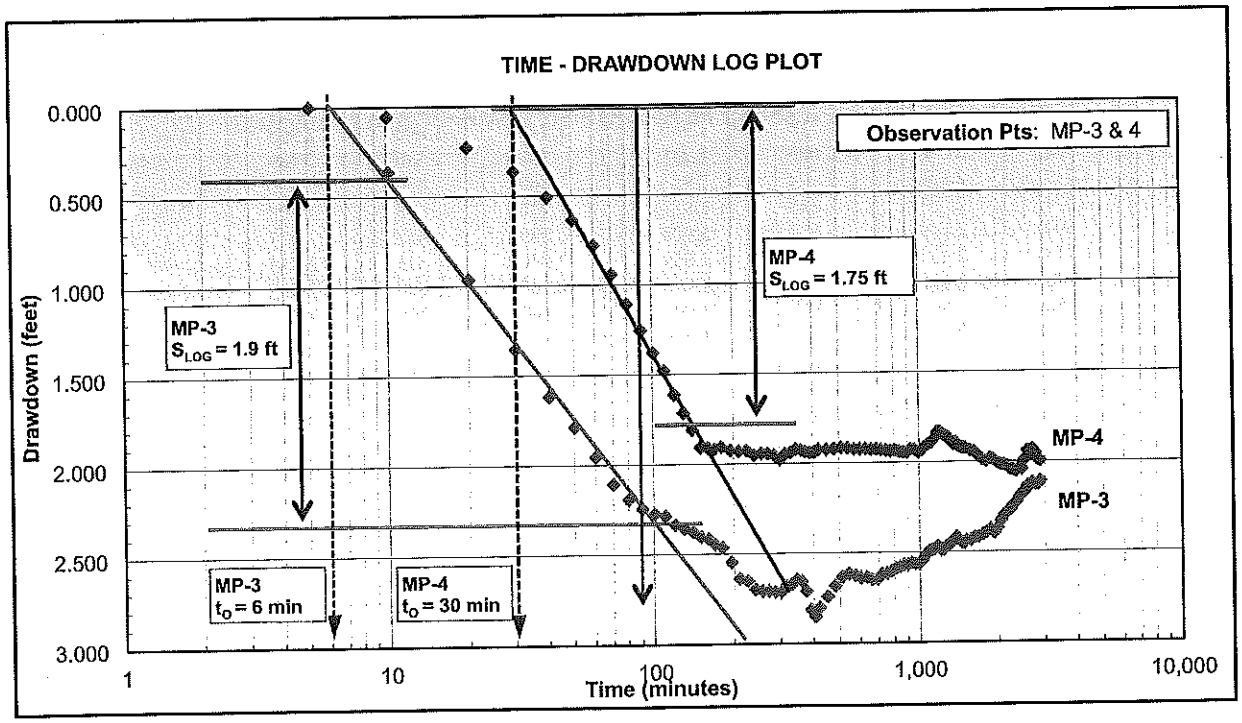
PUMP TEST DRAWDOWN DATA (March 2014)

Elapsed Time (min)	Drawdown Data MP-1 (ft.)	MP-2 (ft.)	MP-3 (ft.)	MP-4 (ft.)	Elapsed Time (min)	Drawdown Data MP-1 (ft.)	MP-2 (ft.)	MP-3 (ft.)	MP-4 (ft.)
0	0.000	0.000	0.000	0.000	810	1.744	2.662	2.589	1.9336
5	0.000	0.000	0.000	0.000	840	1.743	2.663	2.582	1.9431
10	0.225	0.062	0.366	0.057	870	1.745	2.658	2.571	1.9447
20	0.496	0.283	0.967	0.231	900	1.735	2.653	2.571	1.9447
30	0.689	0.507	1.356	0.367	930	1.718	2.636	2.562	1.9283
40	0.825	0.725	1.621	0.512	960	1.706	2.626	2.566	1.9324
50	0.910	0.913	1.792	0.640	990	1.695	2.624	2.566	1.9453
60	1.023	1.086	1.957	0.780	1,020	1.684	2.605	2.546	1.9366
70	1.169	1.269	2.109	0.943	1,050	1.673	2.583	2.519	1.9164
80	1.259	1.429	2.196	1.109	1,080	1.679	2.576	2.497	1.9030
90	1.317	1.572	2.250	1.255	1,110	1.701	2.574	2.493	1.8935
100	1.358	1.687	2.277	1.381	1,140	1.712	2.576	2.484	1.8733
110	1.364	1.765	2.288	1.481	1,170	1.721	2.572	2.471	1.8349
120	1.412	1.880	2.340	1.614	1,200	1.744	2.590	2.490	1.8358
130	1.430	1.955	2.361	1.716	1,230	1.704	2.594	2.489	1.8485
140	1.450	2.021	2.379	1.812	1,260	1.685	2.576	2.470	1.8595
150	1.479	2.082	2.406	1.911	1,290	1.668	2.556	2.462	1.8645
160	1.493	2.141	2.418	1.911	1,320	1.664	2.551	2.448	1.8865
170	1.508	2.184	2.449	1.918	1,350	1.668	2.540	2.438	1.9042
180	1.506	2.220	2.467	1.907	1,380	1.652	2.514	2.420	1.8938
195	1.569	2.281	2.550	1.927	1,410	1.689	2.535	2.440	1.9164
210	1.636	2.383	2.641	1.934	1,440	1.713	2.550	2.451	1.9215
225	1.651	2.413	2.653	1.929	1,470	1.718	2.555	2.453	1.9243
240	1.693	2.506	2.701	1.954	1,500	1.714	2.546	2.441	1.9268
255	1.695	2.532	2.709	1.946	1,560	1.729	2.551	2.436	1.9374
270	1.717	2.581	2.709	1.947	1,620	1.705	2.522	2.422	1.9448
285	1.728	2.605	2.714	1.954	1,680	1.683	2.511	2.419	1.9710
300	1.742	2.640	2.716	1.980	1,740	1.690	2.505	2.407	1.9885
315	1.708	2.638	2.680	1.948	1,800	1.686	2.489	2.394	1.9971
330	1.713	2.638	2.674	1.943	1,860	1.694	2.480	2.376	1.9829
345	1.671	2.631	2.648	1.924	1,920	1.698	2.498	2.398	1.9913
360	1.692	2.641	2.657	1.929	1,980	1.662	2.477	2.371	2.0085
375	1.718	2.651	2.711	1.939	2,040	1.625	2.438	2.329	2.0181
390	1.746	2.680	2.816	1.943	2,100	1.600	2.393	2.296	2.0187
405	1.760	2.693	2.853	1.943	2,160	1.596	2.374	2.279	2.0261
420	1.742	2.699	2.803	1.926	2,220	1.595	2.364	2.270	2.0457
450	1.741	2.708	2.744	1.928	2,280	1.571	2.338	2.242	2.0481
480	1.735	2.697	2.685	1.923	2,340	1.566	2.327	2.226	2.0565
510	1.727	2.680	2.636	1.917	2,400	1.538	2.293	2.199	2.0409
540	1.729	2.663	2.617	1.920	2,460	1.529	2.278	2.177	2.0443
570	1.733	2.661	2.627	1.925	2,520	1.512	2.262	2.170	1.9920
600	1.726	2.663	2.644	1.925	2,580	1.495	2.232	2.137	1.9427
630	1.721	2.656	2.638	1.924	2,640	1.505	2.232	2.137	1.9550
660	1.732	2.665	2.651	1.927	2,700	1.517	2.219	2.120	1.9337
690	1.740	2.665	2.650	1.928	2,760	1.534	2.238	2.130	1.9566
720	1.737	2.666	2.620	1.930	2,820	1.519	2.238	2.130	1.9923
750	1.755	2.668	2.616	1.934	2,880	1.499	2.220	2.110	1.9982
780	1.753	2.672	2.605	1.939					

AQUIFER PUMP TEST (USING DPE)
TIME-DRAWDOWN DATA PLOTS
FORMOSA PLANT
POINT COMFORT, TX

Test Date: Mar. 5, 2014
Test Wells: A2-EP-1 & 2





ATTACHMENT 3

High Vacuum DPE – Vacuum Data and Analysis

PO Box 309 • Portland, TX 78374 | Tel: 361.643.4378 | Fax: 866.306.0436
tnix@gaincoinc.com | www.gaincoinc.com

PILOT TEST ANALYSIS WORKSHEETS (AOC-1)

Test Date: 27-Feb
Test Wells: A1-EP-1 & 2

DPE PILOT TEST - VACUUM DATA
FIELD DATA WORKSHEET
FORMOSA PLANT
POINT COMFORT, TX

Elap. Time (min.)	LRP Manifold Vacuum (in. Hg)	Flow From Wells (scfm)	System Effluent Carbon Treatment: Flow (scfm)	VOC (ppm)	VOC (mg/m³)	EDC (ppm)	EDC (mg/m³)	Test Well Vacuum: EP-1 Vac. (in.hg.)	EP-2 Vac. (in. hg.)	Avg. Vac. (in. hg.)	Monitor Point Vacuum: MP-1 Vac. (in wc)	MP-1 Norm. (---)	MP-2 Vac. (in wc)	MP-2 Norm. (---)	MP-3 Vac. (in wc)	MP-3 Norm. (---)	MP-4 Vac. (in wc)	MP-4 Norm (---)
0	15	41	41					3	6	5	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
5	15	44	44					4	6	5	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
10	15	46	46					5	6	5	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
15	15	40	40	1299	5523	1100	4594	5	7	6	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
30	15	39	39					5	7	6	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
45	15	38	38					6	8	7	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
60	15	34	34					8	8	8	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
65	15	39	39					12	11	12	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
70	15	38	38	1404	5971	1180	4928	12	12	12	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
75	14	36	36					13	12	12	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
90	14	37	37					12	12	12	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
105	14	34	34					12	12	12	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
120	14	31	31					12	11	12	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
125	16	25	25	1749	7437	1480	6181	15	14	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
130	16	28	28					15	14	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
135	16	27	27					15	14	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
165	16	28	28					15	14	15	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
195	16	24	24					15	13	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
225	16	24	24					15	13	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
285	16	25	25					15	13	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
345	16	25	25					15	13	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
405	16	25	25					15	13	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
435	16	25	25	1854	7886	1570	6557	15	13	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
885	15	34	34	1427	6071	1200	5012	15	14	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
945	15	35	35					15	13	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
1005	15	38	38					15	12	13	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
1065	15	40	40					15	12	13	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
1245	15	40	40	1692	7195	1410	5889	15	13	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
1305	15	40	40					15	14	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
1365	15	40	40					15	14	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
1425	15	40	40					15	14	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
1485	15	40	40	1866	7938	1570	6557	15	13	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
1785	15	39	39	1536	6531	1300	5429	15	13	14	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
2535	15	35	35	2499	10628	2190	9146	15	14	15	0.00	0.0000	0.00	0.0000	0.05	0.0002	0.00	0.0000
2655	14	38	38					16	15	15	0.05	0.0002	0.00	0.0000	0.05	0.0002	0.00	0.0000
2715	14	38	38					16	15	15	0.05	0.0002	0.00	0.0000	0.05	0.0002	0.00	0.0000
2775	14	38	38					16	16	16	0.05	0.0002	0.00	0.0000	0.05	0.0002	0.00	0.0000
2880	16	35	35					16	16	16	0.05	0.0002	0.00	0.0000	0.05	0.0002	0.00	0.0000
Avg. Long Term =		35 scfm		Dist. from Extraction Well >>				0 ft.			55.5 ft.		30.5 ft.		25 ft.		25 ft.	

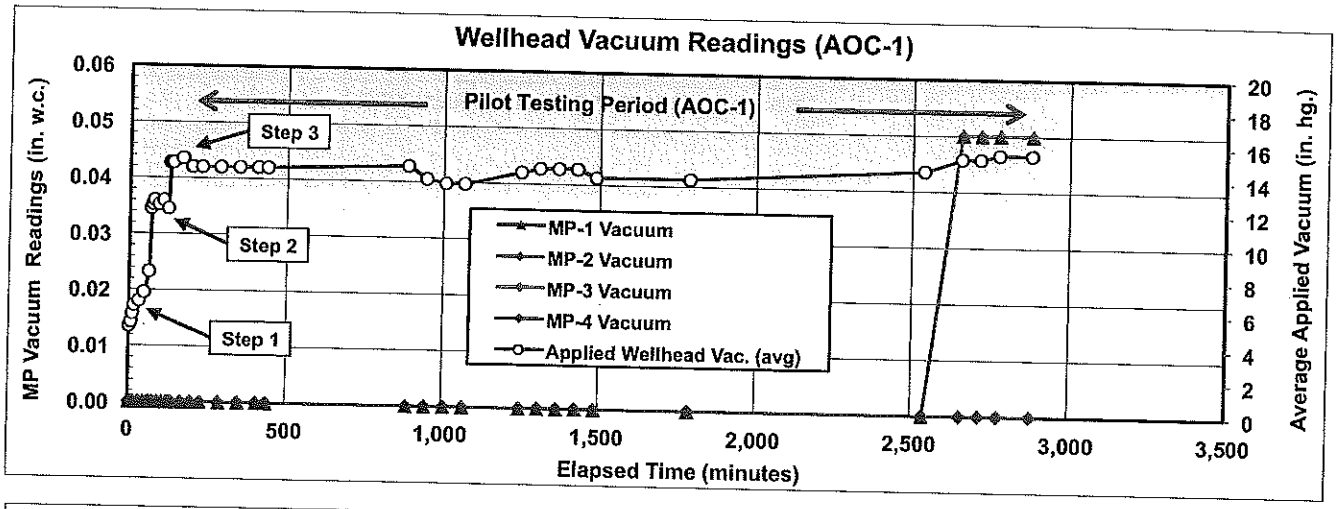
Notes:

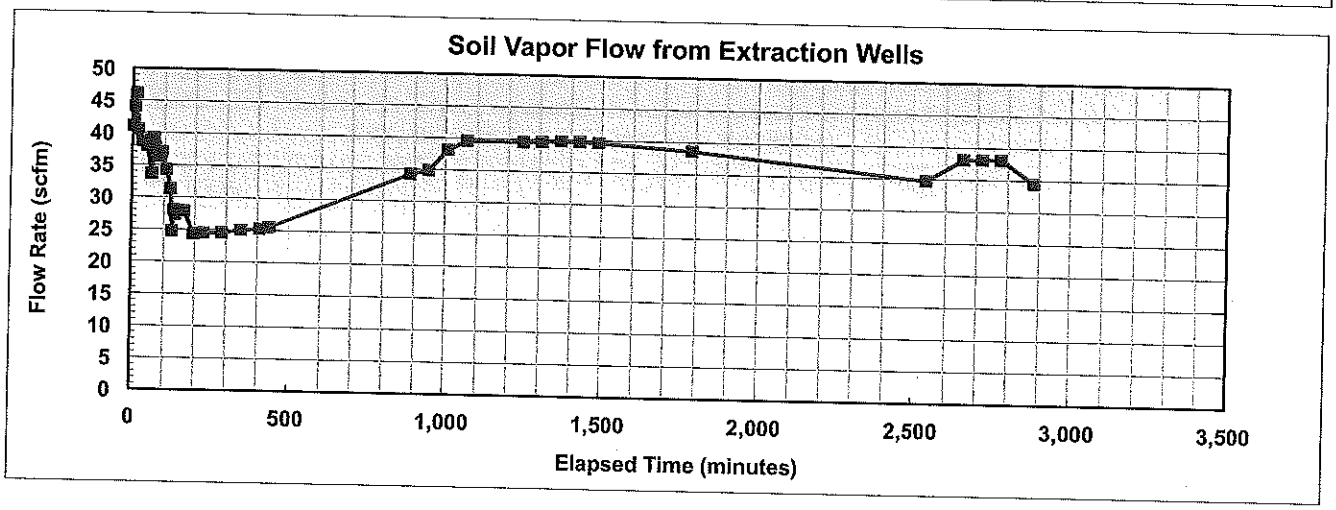
1. Volatile Organic Compound (VOC) concetrations were taken from the sum of the analytes using EPA Method TO-15.
2. Ethylene Dichloride (EDC) concentrations were by EPA Method TO-15 analyses.
3. Sample results in this table, reading from top to bottom, refer, in order, to samples 600-87964-1 through 6 and 600-88118-1 through 3 in the certified lab reports in Attachment 4.

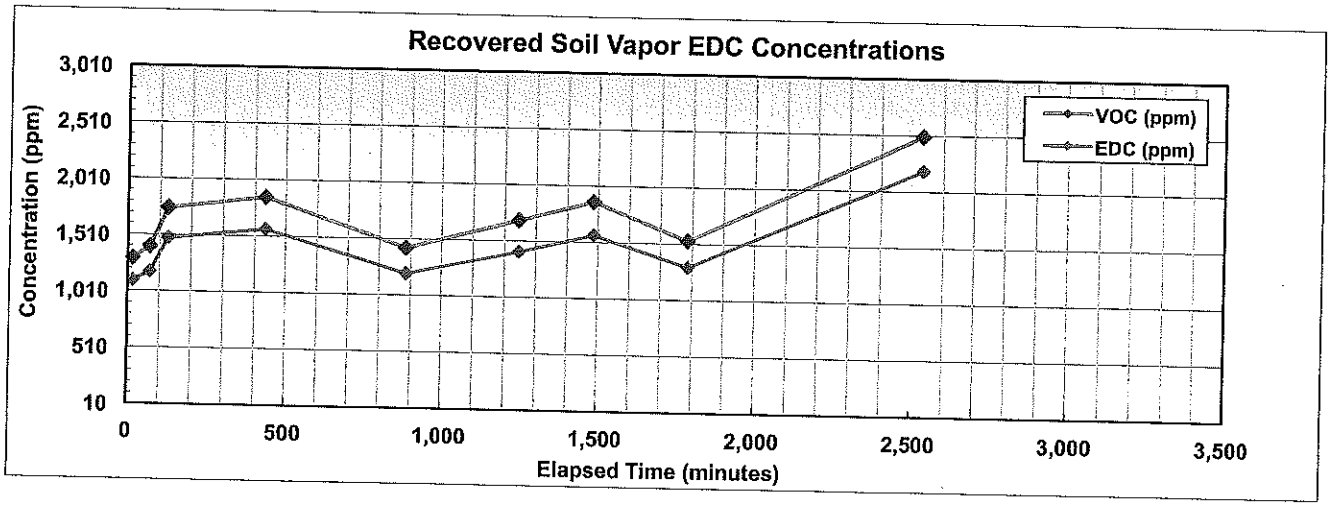
PILOT TEST ANALYSIS WORKSHEETS (AOC-1)

DPE PILOT TEST - VACUUM DATA
WELLHEAD VACUUM AND PID READINGS (DPE TESTING)
FORMOSA PLANT
POINT COMFORT, TX

Test Date: 27-Feb-14
Test Wells: A1-EP-1 & 2



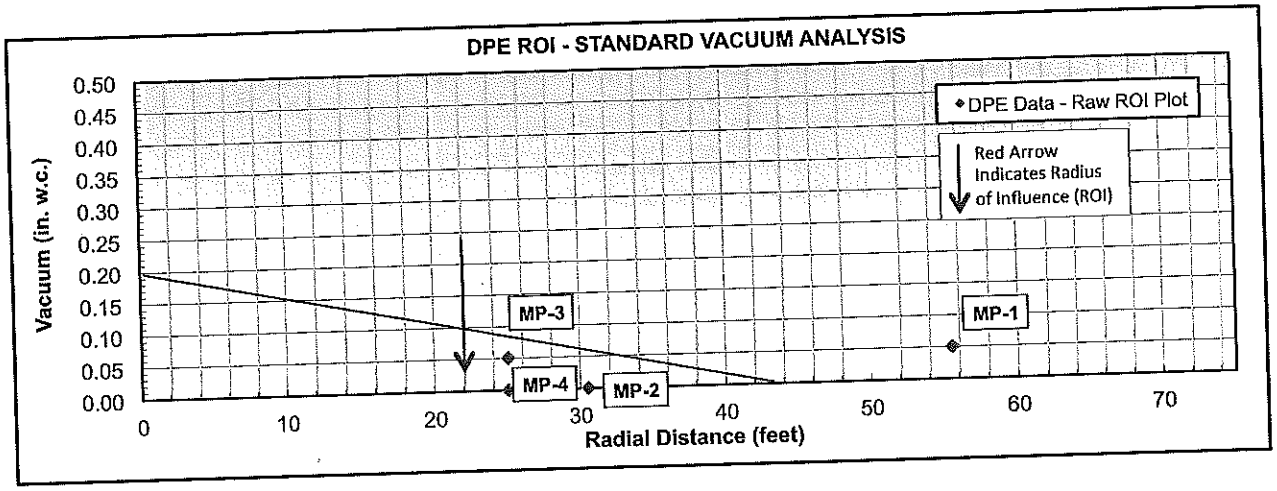


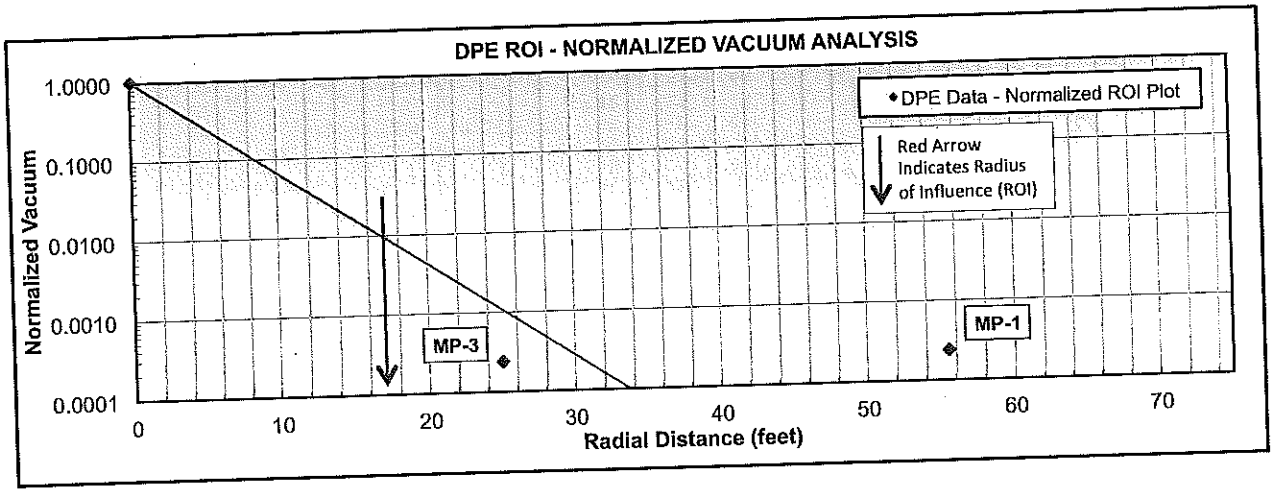


PILOT TEST ANALYSIS WORKSHEETS (AOC-1)

Test Date: 27-Feb-14
Test Wells: A1-EP-1 & 2

DPE PILOT TEST - VACUUM DATA
RADIUS OF INFLUENCE PLOTS
FORMOSA PLANT
POINT COMFORT, TX





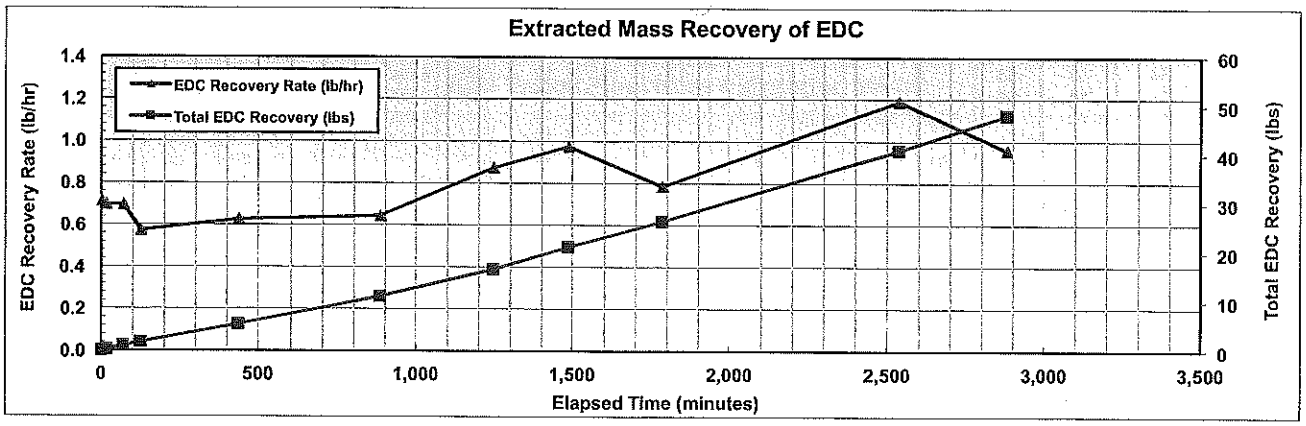
PILOT TEST ANALYSIS WORKSHEETS (AOC-1)

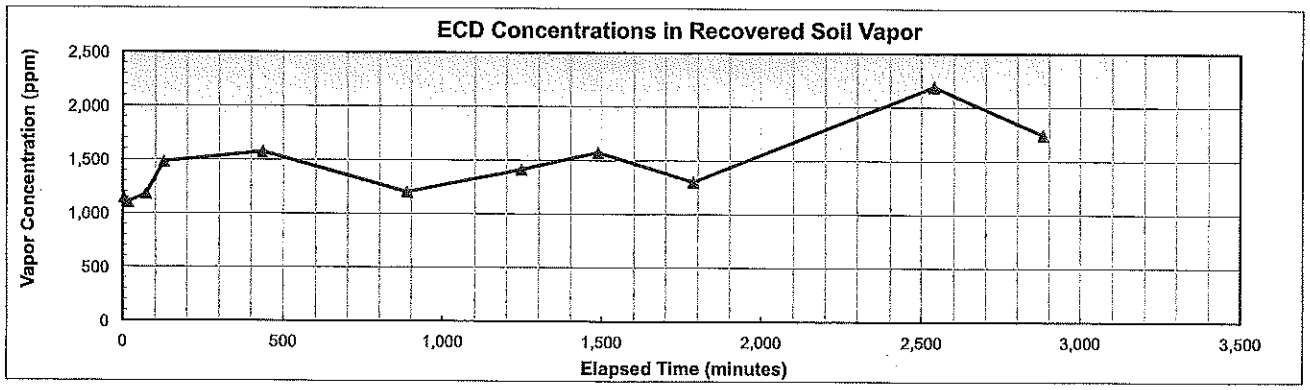
DPE PILOT TEST - VACUUM DATA
VAPOR PHASE AND LNAPL RECOVERY WORKSHEET
FORMOSA PLANT
POINT COMFORT, TX

Test Date: 27-Feb-14
Test Wells: A1-EP-1 & 2

Time (min.)	Anal. Type	Flow (scfm)	Concentration EDC (ppm)	Concentration VOC (ppm)	Concentration EDC (mg/m³)	Concentration VOC (mg/m³)	Recovery Rate EDC (lbs/hr)	Recovery Rate VOC (lbs/hr)	Totals (EDC) Per Stage (lbs)	Totals (EDC) Cumulative (lbs)	Totals (VOCs) Per Stage (lbs)	Totals (VOCs) Cumulative (lbs)
0	Est.	40	1,140	1,351	4,761	5,747	0.7133	0.8611	0.0000	0.0001	0.0000	0.000
15	Lab	40	1,100	1,299	4,594	5,523	0.6957	0.8364	0.1761	0.1762	0.2122	0.212
70	Lab	38	1,180	1,404	4,928	5,971	0.6947	0.8417	0.6373	0.8135	0.7691	0.981
125	Lab	25	1,480	1,749	6,181	7,437	0.5717	0.6879	0.5804	1.3939	0.7011	1.682
435	Lab	25	1,570	1,854	6,557	7,886	0.6259	0.7527	3.0937	4.4877	3.7216	5.404
885	Lab	34	1,200	1,427	5,012	6,071	0.6424	0.7782	4.7561	9.2438	5.7408	11.145
1245	Lab	40	1,410	1,692	5,889	7,195	0.8715	1.0649	4.5417	13.7855	5.5292	16.674
1485	Lab	40	1,570	1,866	6,557	7,938	0.9733	1.1783	3.6895	17.4750	4.4863	21.160
1785	Lab	39	1,300	1,536	5,429	6,531	0.7842	0.9434	4.3937	21.8687	5.3042	26.465
2535	Lab	35	2,190	2,499	9,146	10,628	1.1889	1.3816	12.3320	34.2007	14.5310	40.996
2880	Est.	35	1,745	2,017	7,288	8,580	0.9554	1.1248	6.1650	40.3657	7.2058	48.201
DPE Average Soil Vapor Extraction Rate for EDC and VOCs >>							0.8410	1.0042				

Notes: 1. Estimate (Est.) concentrations were approximated by extrapolation from laboratory values.
2. Volatile Organic Compound (VOC) concentrations were taken from the sum of the analytes using EPA Method TO-15.





PILOT TEST ANALYSIS WORKSHEETS (AOC-2)

Test Date: Mar. 5, 2014
Test Wells: A2-EP-1 & 2

DPE PILOT TEST - VACUUM DATA
FIELD DATA WORKSHEET
FORMOSA PLANT
POINT COMFORT, TX

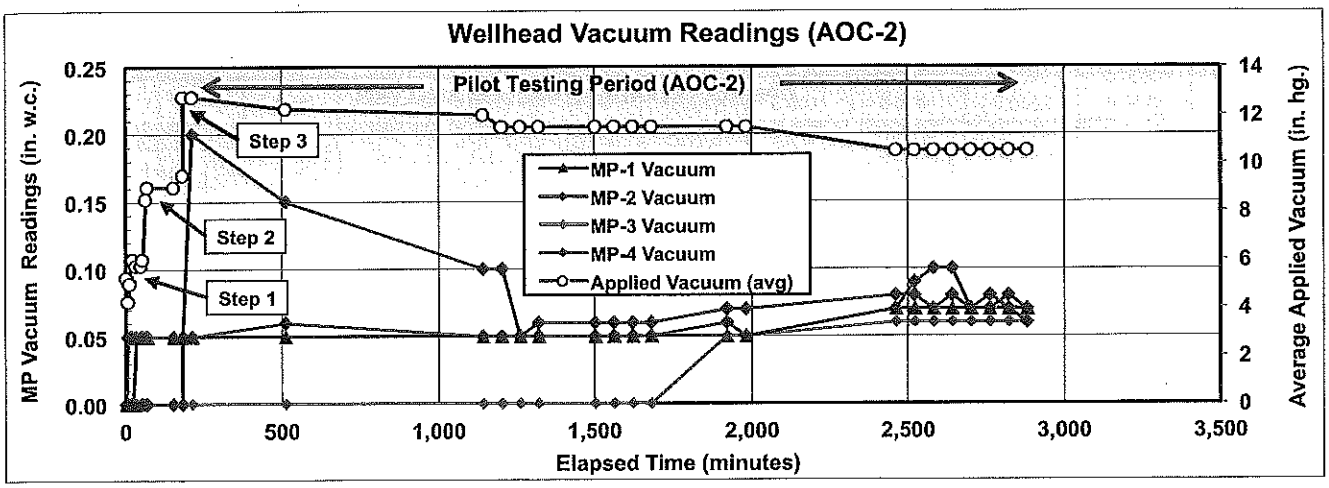
Elap. Time (min.)	LRP Manifold Vacuum (in. Hg)	Flow From Wells (scfm)	System Effluent Carbon Treatment					Test Well Vacuum			Monitor Point Vacuum							
								EW-1	EW-2	Avg.	MP-1		MP-2		MP-3		MP-4	
			Flow (scfm)	VOC (ppm)	VOC (mg/m³)	EDC (ppm)	EDC (mg/m³)	Vac. (in.hg.)	Vac. (in. hg.)	Vac. (in. hg.)	Vac. (in wc)	Norm. (---)	Vac. (in wc)	Norm. (---)	Vac. (in wc)	Norm. (---)	Vac. (in wc)	Norm (---)
0	17	26	26	328	1403	274	1144	5	6	5	0.00	0.0000	0.00	0.0000	0.00	0.0000	0.00	0.0000
5	17	33	33					4	5	4	0.00	0.0000	0.05	0.0011	0.00	0.0000	0.00	0.0000
10	17	40	40					4	6	5	0.00	0.0000	0.05	0.0009	0.00	0.0000	0.00	0.0000
15	17	37	37					5	7	6	0.00	0.0000	0.05	0.0007	0.00	0.0000	0.00	0.0000
20	17	33	33					5	7	6	0.00	0.0000	0.05	0.0007	0.00	0.0000	0.00	0.0000
30	17	38	38					5	7	6	0.05	0.0007	0.05	0.0007	0.00	0.0000	0.00	0.0000
45	16	35	35					5	7	6	0.05	0.0008	0.05	0.0008	0.00	0.0000	0.00	0.0000
50	17	37	37					5	7	6	0.05	0.0007	0.05	0.0007	0.00	0.0000	0.00	0.0000
60	15	47	47	4.11	17.58	2.58	10.8	10	7	9	0.05	0.0004	0.05	0.0004	0.00	0.0000	0.00	0.0000
65	15	45	45					10	8	9	0.05	0.0004	0.05	0.0004	0.00	0.0000	0.00	0.0000
150	15	39	39	1.28	5.49	0.794	3.32	8	10	9	0.05	0.0005	0.05	0.0005	0.00	0.0000	0.00	0.0000
180	15	27	27					8	11	10	0.05	0.0005	0.05	0.0005	0.00	0.0000	0.00	0.0000
181	15	40	40					12	14	13	0.05	0.0003	0.05	0.0003	0.00	0.0000	0.05	0.0003
210	15	40	40					12	14	13	0.05	0.0003	0.05	0.0003	0.00	0.0000	0.20	0.0012
510	16	41	41	0.83	3.55	0.358	1.50	12	13	12	0.05	0.0003	0.06	0.0004	0.00	0.0000	0.15	0.0010
1140	14	50	50	0.90	3.84	0.530	2.21	12	12	12	0.05	0.0003	0.05	0.0003	0.00	0.0000	0.10	0.0006
1200	14	51	51					12	11	12	0.05	0.0003	0.05	0.0003	0.00	0.0000	0.10	0.0006
1260	14	51	51					12	11	12	0.05	0.0003	0.05	0.0003	0.00	0.0000	0.05	0.0003
1320	14	52	52	1.61	6.90	1.13	4.72	12	11	12	0.05	0.0003	0.06	0.0004	0.00	0.0000	0.05	0.0003
1500	14	53	53					12	11	12	0.05	0.0003	0.06	0.0004	0.00	0.0000	0.05	0.0003
1560	14	54	54					12	11	12	0.05	0.0003	0.06	0.0004	0.00	0.0000	0.05	0.0003
1620	14	55	55	0.79	3.37	0.337	1.41	12	11	12	0.05	0.0003	0.06	0.0004	0.00	0.0000	0.05	0.0003
1680	14	54	54					12	11	12	0.05	0.0003	0.06	0.0004	0.00	0.0000	0.05	0.0003
1920	14	55	55	0.91	3.91	0.372	1.55	12	11	12	0.05	0.0003	0.07	0.0004	0.05	0.0003	0.06	0.0004
1980	14	57	57					12	11	12	0.05	0.0003	0.07	0.0004	0.05	0.0003	0.05	0.0003
2460	14	57	57	0.91	3.90	0.359	1.50	11	11	11	0.07	0.0005	0.08	0.0006	0.06	0.0004	0.07	0.0005
2520	13	58	58					11	11	11	0.07	0.0005	0.08	0.0006	0.06	0.0004	0.09	0.0006
2580	13	55	55					11	11	11	0.07	0.0005	0.07	0.0005	0.06	0.0004	0.10	0.0007
2640	13	54	54					11	11	11	0.07	0.0005	0.08	0.0006	0.06	0.0004	0.10	0.0007
2700	13	58	58					11	11	11	0.07	0.0005	0.07	0.0005	0.06	0.0004	0.07	0.0005
2760	13	64	64	0.50	2.16	0.167	0.70	11	11	11	0.07	0.0005	0.07	0.0005	0.06	0.0004	0.08	0.0006
2820	13	65	65					11	11	11	0.07	0.0005	0.08	0.0006	0.06	0.0004	0.07	0.0005
2880	13	65	65	0.91	3.87	0.380	1.59	11	11	11	0.07	0.0005	0.07	0.0005	0.06	0.0004	0.06	0.0004
Avg. Long Term =		56 scfm	Dist. from Extraction Well >>					0 ft.			44 ft.		25 ft.		30 ft.		30 ft.	

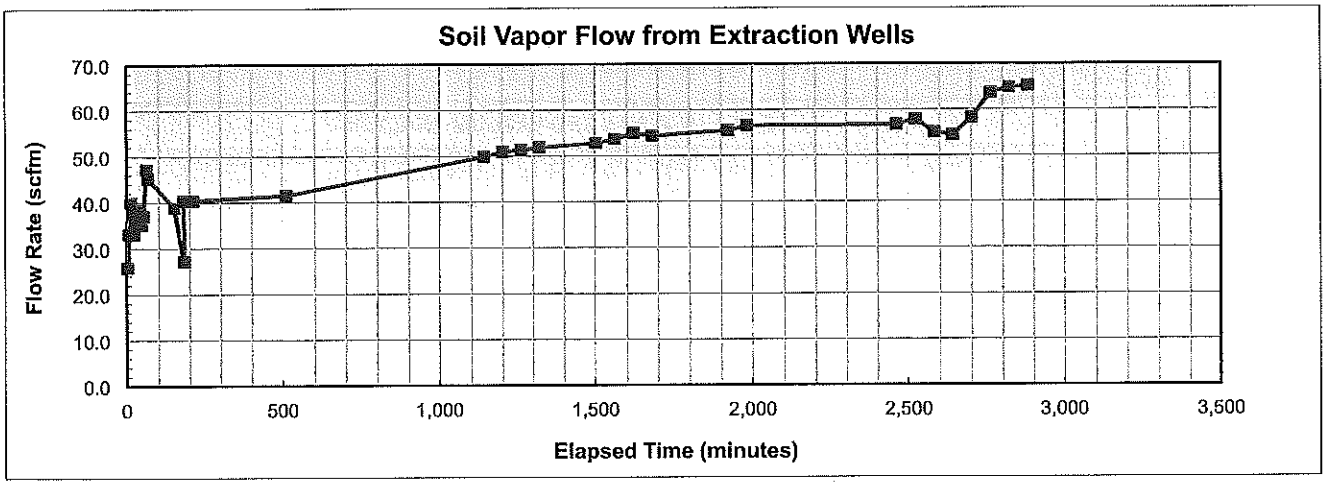
Notes:

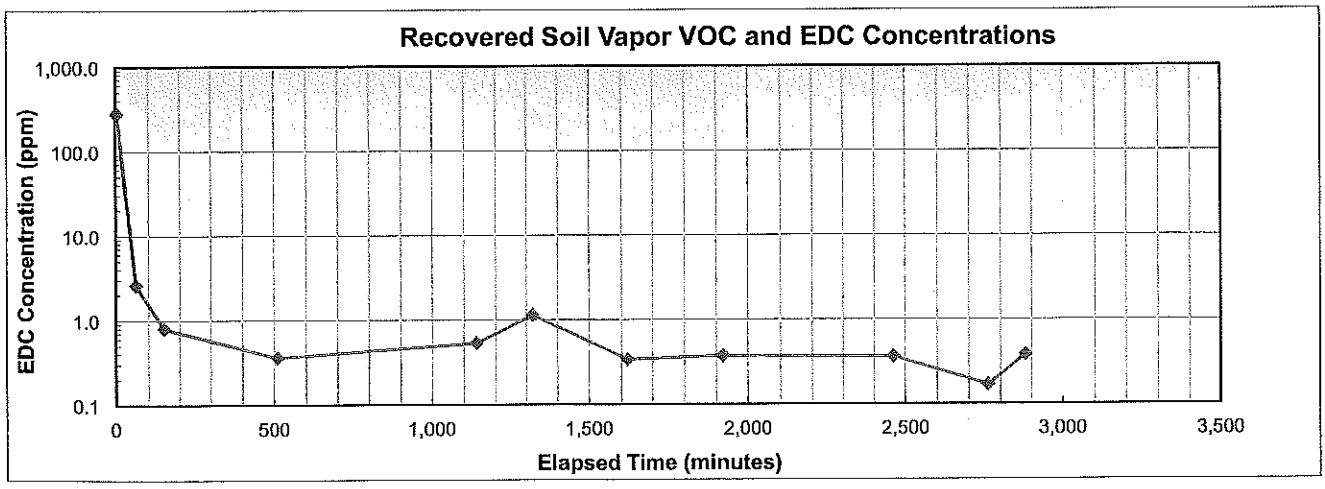
1. Analyses indicated as VOC were obtained by the sum of EPA Method TO-15.
2. Analyses labeled as EDC indicate results of laboratory testing for Ethylene Dichloride.
3. Sample results in this table, reading from top to bottom, refer, in order, to samples 600-88460-1 through 6 and 600-88461-1 through 5 in the certified lab reports in Attachment 5.

DPE PILOT TEST - VACUUM DATA
WELLHEAD VACUUM AND PID READINGS (DPE TESTING)
FORMOSA PLANT
POINT COMFORT, TX

Test Date: Mar. 5, 2014
Test Wells: A2-EP-1 & 2

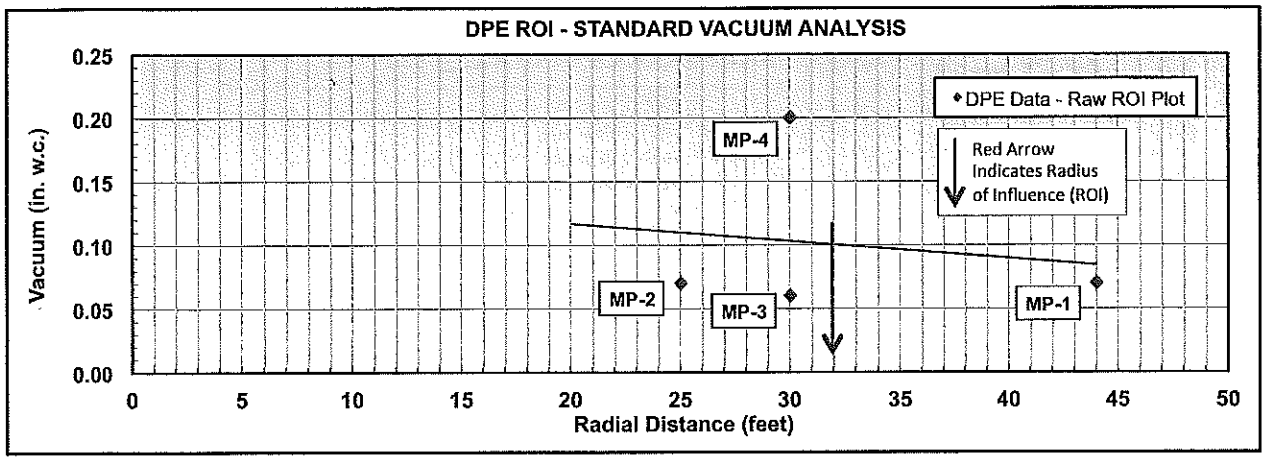


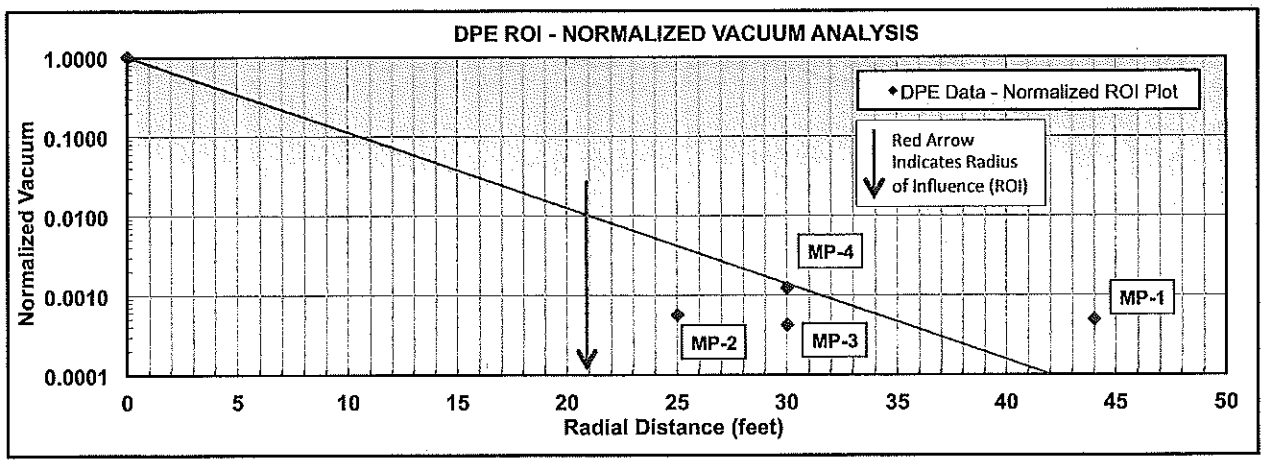




DPE PILOT TEST - VACUUM DATA
RADIUS OF INFLUENCE PLOTS
FORMOSA PLANT
POINT COMFORT, TX

Test Date: Mar. 5, 2014
Test Wells: A2-EP-1 & 2

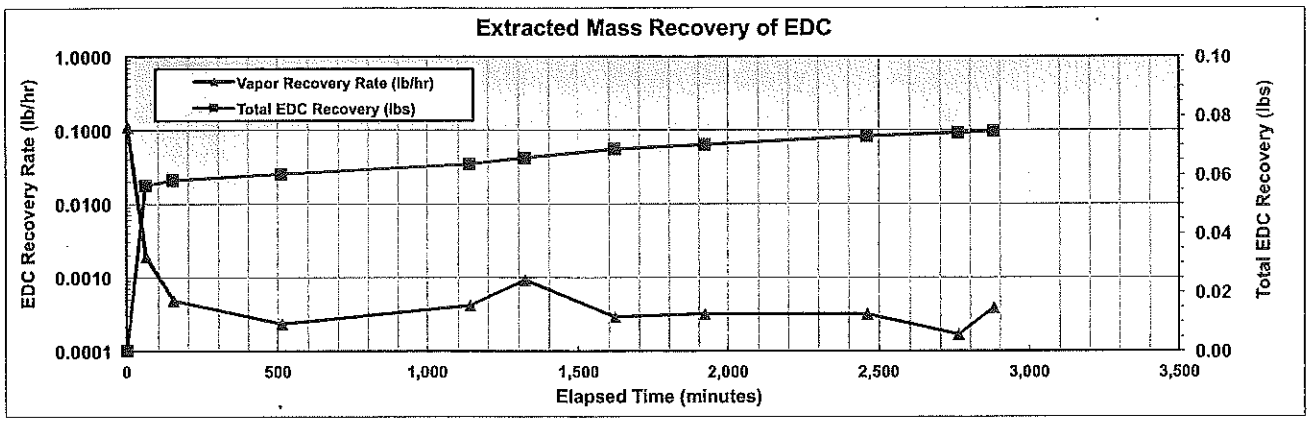
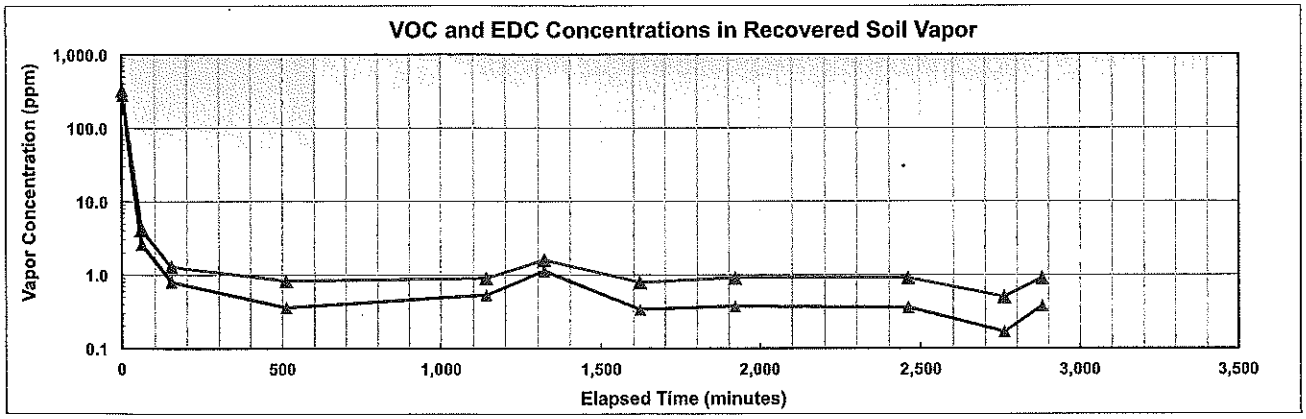




PILOT TEST ANALYSIS WORKSHEETS (AOC-2)

DPE PILOT TEST - VACUUM DATA
VAPOR PHASE AND LNAPL RECOVERY WORKSHEET
FORMOSA PLANT
POINT COMFORT, TX

Test Date: Mar. 5, 2014
Test Wells: A2-EP-1 & 2

Time (min.)	Anal. Type	Flow (scfm)	Concentration EDC (ppm)	Concentration VOC (ppm)	Concentration EDC (mg/m³)	Concentration VOC (mg/m³)	Recovery Rate EDC (lbs/hr)	Recovery Rate VOC (lbs/hr)	Totals (EDC) Per Stage (lbs)	Totals (EDC) Cumulative (lbs)	Totals (VOCs) Per Stage (lbs)	Totals (VOCs) Cumulative (lbs)
0	Lab	26	274	328	1,144	1,403	0.1103	0.1352	0.0000	0.0001	0.0000	0.0001
60	Lab	47	2.58	4.11	10.77	17.58	0.0019	0.0031	0.0561	0.0562	0.0692	0.0693
150	Lab	39	0.79	1.28	3.32	5.49	0.0005	0.0008	0.0018	0.0580	0.0029	0.0722
510	Lab	41	0.36	0.83	1.50	3.55	0.0002	0.0006	0.0021	0.0601	0.0040	0.0762
1140	Lab	50	0.53	0.90	2.21	3.84	0.0004	0.0007	0.0034	0.0635	0.0066	0.0829
1320	Lab	52	1.13	1.61	4.72	6.90	0.0009	0.0013	0.0020	0.0655	0.0031	0.0860
1620	Lab	55	0.34	0.79	1.41	3.37	0.0003	0.0007	0.0030	0.0685	0.0051	0.0910
1920	Lab	55	0.37	0.91	1.55	3.91	0.0003	0.0008	0.0015	0.0701	0.0038	0.0948
2460	Lab	57	0.36	0.91	1.50	3.90	0.0003	0.0008	0.0029	0.0729	0.0074	0.1022
2760	Lab	64	0.17	0.50	0.70	2.16	0.0002	0.0005	0.0012	0.0742	0.0034	0.1055
2880	Lab	65	0.38	0.91	1.59	3.87	0.0004	0.0009	0.0006	0.0747	0.0015	0.1070
DPE Average Soil Vapor Extraction Rate for EDC and VOCs >>							0.0016	0.0022				

Notes: 1. Volatile Organic Compound (VOC) concetrations were taken from the sum of the analytes using EPA Method TO-15.