

Flux Chamber Equations (Jan. 18, 2001)

Meanings of symbols:

flow rate (liter/min)	conc. (vol/vol)	conc. (mg/liter)	
Q_{sweep}	C_{sweep}	Y_{sweep}	sweep gas into chamber
Q_{source}	C_{source}	Y_{source}	gas from surface into chamber
Q_{vent}	C_{vent}	Y_{vent}	gas that leaks out/around chamber
Q_{sample}	C_{sample}	Y_{sample}	gas to be analyzed from chamber
T	Temperature (K)		
P	Pressure (atm)		
R	Gas constant (liter atm / (mol K))		
MW	Molecular weight (mg/mol)		
A	Surface emission area isolated by flux chamber (m ²)		
E	Surface emission rate (mg/(min m ²))		

The total gas volume flow rate into the chamber equals the total out of the chamber.

$$Q_{\text{sweep}} + Q_{\text{source}} = Q_{\text{vent}} + Q_{\text{sample}} \quad (1)$$

The same applies to the partial volume flow rate of one molecular species.

$$Q_{\text{sweep}} C_{\text{sweep}} + Q_{\text{source}} C_{\text{source}} = Q_{\text{vent}} C_{\text{vent}} + Q_{\text{sample}} C_{\text{sample}} \quad (2)$$

The sweep gas is clean.

$$C_{\text{sweep}} = 0 \quad (3)$$

The gases are mixed well in the chamber.

$$C_{\text{vent}} = C_{\text{sample}} \quad (4)$$

Plug (3) and (4) into (2).

$$Q_{\text{source}} C_{\text{source}} = Q_{\text{vent}} C_{\text{sample}} + Q_{\text{sample}} C_{\text{sample}} \quad (5)$$

Combine the like terms on the right hand side of (5).

$$Q_{\text{source}} C_{\text{source}} = (Q_{\text{vent}} + Q_{\text{sample}}) C_{\text{sample}} \quad (6)$$

Plug (1) into (6).

$$Q_{\text{source}} C_{\text{source}} = (Q_{\text{sweep}} + Q_{\text{source}}) C_{\text{sample}} \quad (7)$$

The two expressions for concentration, Y and C, are related by the ideal gas law and the molecular weight.

$$Y = (P / (R T)) MW C \quad (8)$$

Apply (8) to both sides of (7).

$$Q_{source} Y_{source} = (Q_{sweep} + Q_{source}) Y_{sample} \quad (9)$$

Divide both sides of (9) by the emission area.

$$Q_{source} Y_{source} / A = (Q_{sweep} + Q_{source}) Y_{sample} / A \quad (10)$$

The emission rate of the given species is defined by

$$E = Q_{source} Y_{source} / A \quad (11)$$

Plug (11) into (10).

$$E = (Q_{sweep} + Q_{source}) Y_{sample} / A \quad (12)$$

Given the assumptions in (1) thru (4), equation (12) is exact.

But we cannot use (12) to calculate E, because Q_{source} is unknown.

What further assumption can we make, which will be reasonable and will help to calculate E?

In the case of diffusion, gases are emitted from the surface very slowly, so Q_{source} is very small compared to Q_{sweep} .

$$Q_{sweep} + Q_{source} \approx Q_{sweep} \quad (13)$$

Plug (13) into (12).

$$E \approx Q_{sweep} Y_{sample} / A \quad (14)$$

Equation (14) above is equivalent to equation (2-1) in the Flux Chamber User's Guide.

Since we have omitted Q_{source} , which is nonnegative, (14) gives a lower bound for E.

Note that (14) is only a good approximation when (13) is true.

Now let's find a different approximation for E, by looking at the unknown C_{source} instead of the unknown Q_{source} . If we knew one we could solve for the other using (7). Expand (7).

$$Q_{source} C_{source} = Q_{sweep} C_{sample} + Q_{source} C_{sample} \quad (15)$$

Collect the Q_{source} terms.

$$Q_{source} (C_{source} - C_{sample}) = Q_{sweep} C_{sample} \quad (16)$$

Solve for Q_{source} .

$$Q_{source} = Q_{sweep} (C_{sample} / (C_{source} - C_{sample})) \quad (17)$$

Plug into (12).

$$E = Q_{\text{sweep}} (1 + (C_{\text{sample}} / (C_{\text{source}} - C_{\text{sample}})) Y_{\text{sample}} / A \quad (18)$$

Simplify (18).

$$E = Q_{\text{sweep}} (C_{\text{source}} / (C_{\text{source}} - C_{\text{sample}})) Y_{\text{sample}} / A \quad (19)$$

Equation (19) is equivalent to (12). Both are exact. Both involve an unknown quantity on the right hand side that prevents us from calculating E.

Although we do not know C_{source} , we know it satisfies the following inequality.

The first half of the inequality is true because the sample is a dilution of the source.

(Ignoring the trivial case in which C_{sample} and C_{source} are equal because both are zero.)

The second half is true because the source concentration of any species cannot be more than 100%.

$$C_{\text{sample}} < C_{\text{source}} \leq 1 \quad (20)$$

Consider the factor in parentheses in (19) and call it K.

$$K = (C_{\text{source}} / (C_{\text{source}} - C_{\text{sample}})) \quad (21)$$

A graph of K versus C_{source} has the following properties:

There are no turning points or inflection points (slope nowhere equals zero).

As $C_{\text{source}} \rightarrow +\infty$ or $-\infty$, $K \rightarrow 1$.

There is a singular point at $C_{\text{source}} = C_{\text{sample}}$.

As $C_{\text{source}} \rightarrow C_{\text{sample}}$ from the right, $K \rightarrow +\infty$.

As $C_{\text{source}} \rightarrow C_{\text{sample}}$ from the left, $K \rightarrow -\infty$.

Let's not forget that C_{source} is limited to the interval given in (20).

In this interval K is strictly greater than 1, K takes its minimum value at

$C_{\text{source}} = 1$, and K has no maximum value.

As an alternative to the assumption in (13), assume that the source concentration of the species of interest is almost 100%. This is true in cases of very active methane seepage.

$$C_{\text{source}} \approx 1 \quad (22)$$

Plug (22) into (19).

$$E \approx Q_{\text{sweep}} (1 / (1 - C_{\text{sample}})) Y_{\text{sample}} / A \quad (23)$$

Like (14), (23) gives a lower bound on E, but (23) gives a greater lower bound.

So (23) is always a better approximation than (14).

It is not possible to find an upper bound on E.

Location ID	Location Description	Northing	Easting	Product Area ID	Date	FGD Text	Flux Chamber Value, ppm	Off-Site Analysis, ppm	RPD	Qualifier	Mass Surface Flux (mg/m2/min)	Volume Surface Flux (ft3/ft2/day)	Volume Surface Flux	Coordinate Source	Comments
9975	GSF-12246	4101762.779	4158578.202	100	3/30/2001	2.4	2.4	1.18	103%		0.06144	0.0004374528	0.0004374528		
9973	GSF-12244	4101862.718	4158581.692	100	3/30/2001	1	<1			<	0.0256	0.0001822720	<0.000182272		
9972	GSF-12243	4101815.771	4158493.397	100	3/30/2001	2	2				0.0512	0.0003645440	0.000364544		
9971	GSF-12242	4101768.824	4158405.102	100	3/30/2001	2.2	2.2				0.05632	0.0004009984	0.0004009984		
12249	GSF-12249ALT	4101696.880	4158667.820	100	3/31/2001	<1	1			<	0.0256	0.0001822720	<0.000182272		
12248	GSF-12248	4101662.570	4158574.420	100	3/31/2001	1.2	1.2				0.03072	0.0002187264	0.0002187264		
12247	GSF-12247ALT	4101638.820	4158474.600	100	3/31/2001	<1	1			<	0.0256	0.0001822720	<0.000182272		
12245	GSF-12245	4101715.660	4158489.760	100	3/31/2001	5	5				0.128	0.0009113600	0.00091136		
9980	GSF-9980	4102210.745	4158931.025	200	3/22/2001	2.5	2.5	2.94	15%		0.064	0.0004556800	0.00045568	Surveyed	
9979	GSF-9979	4102253.761	4159019.742	200	3/22/2001	2	2				0.0512	0.0003645440	0.000364544	Surveyed	
9978	GSF-9978	4102296.708	4159105.725	200	3/21/2001	2.5	2.5	1.95	28%		0.064	0.0004556800	0.00045568	Estimated	
9978	GSF-9978	4102296.708	4159105.725	200	3/22/2001	2.5	2.5				0.064	0.0004556800	0.00045568	Estimated	
9977	GSF-9977	4102356.364	4159105.888	200	3/21/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Estimated	
9977	GSF-9977	4102356.364	4159105.888	200	3/22/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Estimated	
9976	GSF-9976	4102312.877	4159020.193	200	3/22/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9975	GSF-9975	4102264.069	4158929.702	200	3/22/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9974	GSF-9974	4102322.610	4158929.072	200	3/22/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9973	GSF-9973	4102370.590	4159019.309	200	3/22/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Estimated	
9972	GSF-9972	4102414.607	4159115.120	200	3/22/2001	2	2	1.42	41%		0.0512	0.0003645440	0.000364544	Estimated	
9971	GSF-9971	4102452.857	4159112.803	200	3/22/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9970	GSF-9970	4102406.427	4159018.968	200	3/22/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9969	GSF-9969	4102359.849	4158930.065	200	3/22/2001	2	2				0.0512	0.0003645440	0.000364544	Estimated	
9968	GSF-9968	4102316.442	4158836.704	200	3/22/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Estimated	
9929	GSF-9929	4102382.248	4159148.296	200	3/21/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9929	GSF-9929	4102382.248	4159148.296	200	3/22/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9928	GSF-9928	4102334.456	4159060.456	200	3/22/2001	1	1				0.0256	0.0001822720	0.000182272	Surveyed	
9927	GSF-9927	4102286.663	4158972.616	200	3/22/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9926	GSF-9926	4102238.871	4158884.776	200	3/22/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9925	GSF-9925	4102429.640	4159065.920	200	3/22/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9924	GSF-9924	4102377.640	4158973.520	200	3/22/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9923	GSF-9923	4102337.230	4158886.300	200	3/22/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Surveyed	
736	GSF-736	4102326.380	4159150.232	200	3/21/2001	2	2				0.0512	0.0003645440	0.000364544	Surveyed	
735	GSF-735	4102278.588	4159062.392	200	3/22/2001	2	2				0.0512	0.0003645440	0.000364544	Surveyed	
734	GSF-734	4102230.795	4158974.552	200	3/22/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Surveyed	
733	GSF-733	4102342.531	4158970.679	200	3/22/2001	2.5	2.5				0.064	0.0004556800	0.00045568	Surveyed	
732	GSF-732	4102390.324	4159058.519	200	3/22/2001	2	2				0.0512	0.0003645440	0.000364544	Surveyed	
726	GSF-726	4102677.080	4159585.559	200	3/22/2001	2	2				0.0512	0.0003645440	0.000364544	Bad survey	
191	GSF-191	4102294.739	4158882.839	200	3/22/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Surveyed	
9970	GSF-12241	4102057.617	4159315.597	300	3/30/2001	1.8	1.8				0.04608	0.0003280896	0.0003280896	Surveyed	
9969	GSF-12240	4102010.670	4159227.302	300	3/30/2001	1	1				0.0256	0.0001822720	0.000182272	Surveyed	
9968	GSF-12239	4101963.723	4159139.007	300	3/30/2001	2.8	2.8	2.19	28%		0.07168	0.0005103616	0.0005103616	Surveyed	
9967	GSF-12238	4101916.776	4159050.712	300	3/30/2001	2.5	2.5				0.064	0.0004556800	0.00045568	Surveyed	
9966	GSF-12237	4102110.609	4159230.792	300	3/30/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9965	GSF-12236	4102063.662	4159142.497	300	3/30/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Surveyed	
9964	GSF-12235	4102016.715	4159054.202	300	3/30/2001	2.3	2.3				0.05888	0.0004192256	0.0004192256	Surveyed	
9963	GSF-12234	4102210.548	4159234.282	300	3/30/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9962	GSF-12233	4102163.601	4159145.987	300	3/30/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Surveyed	
9961	GSF-12232	4102116.654	4159057.692	300	3/30/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9960	GSF-12231	4102069.707	4158969.398	300	3/30/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
ETI-179	GSF-ETI-179	4101944.701	4157821.014	600	3/18/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "work_mjs_3_20.xls"	
ETI-177	GSF-ETI-177	4102040.286	4157996.694	600	3/18/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "work_mjs_3_20.xls"	
ETI-162	GSF-ETI-162	4102295.400	4158256.342	600	3/29/2001	12	12	1.92	525%		0.049152	0.0003499622	0.00034996224	Coordinates from "work_mjs_3_20.xls"	OVA problem-analyze sample, off-site data used
ETI-162	GSF-ETI-162	4102295.400	4158256.342	600	3/15/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "work_mjs_3_20.xls"	
ETI-161	GSF-ETI-161	4102247.607	4158169.869	600	3/29/2001	11	11	2	450%		0.0512	0.0003645440	0.000364544	Coordinates from "work_mjs_3_20.xls"	OVA problem-analyze sample, off-site data used
ETI-161	GSF-ETI-161	4102247.607	4158169.869	600	3/15/2001	1.2	1.2				0.03072	0.0002187264	0.0002187264	Coordinates from "work_mjs_3_20.xls"	
ETI-157	GSF-ETI-157	4102056.437	4157817.141	600	3/16/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "work_mjs_3_20.xls"	
ETI-155	GSF-ETI-155	4102168.173	4157813.269	600	3/16/2001	2	2				0.0512	0.0003645440	0.000364544	Coordinates from "work_mjs_3_20.xls"	
ETI-154	GSF-ETI-154	4102215.966	4157901.109	600	3/16/2001	1.2	1				0.0256	0.0001822720	0.000182272	Coordinates from "work_mjs_3_20.xls"	
ETI-153	GSF-ETI-153	4102263.758	4157988.949	600	3/15/2001	2.0	2				0.0512	0.0003645440	0.000364544	Coordinates from "work_mjs_3_20.xls"	
ETI-152	GSF-ETI-152	4102311.551	4158076.789	600	3/15/2001	1.5	1.5	1.36	10%		0.0384	0.0002734080	0.000273408	Coordinates from "work_mjs_3_20.xls"	
ETI-151	GSF-ETI-151	4102359.344	4158164.629	600	3/15/2001	3.0	3				0.0768	0.0005468160	0.000546816	Coordinates from "work_mjs_3_20.xls"	
ETI-139	GSF-ETI-139	4102471.080	4158160.756	600	3/15/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "work_mjs_3_20.xls"	
ETI-138	GSF-ETI-138	4102423.287	4158072.916	600	3/15/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Coordinates from "work_mjs_3_20.xls"	

Location ID	Location Description	Northing	Easting	Product Area ID	Date	FGD Text	Flux Chamber Value, ppm	Off-Site Analysis, ppm	RPD	Qualifier	Mass Surface Flux (mg/m2/min)	Volume Surface Flux (ft3/ft2/day)	Volume Surface Flux	Coordinate Source	Comments
ETI-136	GSF-ETI-136	4102327.702	4157897.236	600	3/15/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Coordinates from "work_mjs_3_20.xls"	
ETI-135	GSF-ETI-135	4102279.910	4157809.396	600	3/16/2001	<1.0	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "work_mjs_3_20.xls"	
ETI ALT 156	GSF-ETI ALT 156	4102120.381	4157725.429	600	3/16/2001	<1	1				0.0256	0.0001822720	0.000182272	Coordinates from "work_mjs_3_20.xls"	
ETI 151	GSF-ETI 151	4102359.344	4158164.629	600	3/16/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "work_mjs_3_20.xls"	
ETI 134	GSF-ETI 134	4102232.117	4157721.556	600	3/16/2001	<1	1				0.0256	0.0001822720	0.000182272	Coordinates from "work_mjs_3_20.xls"	
9967	GSF-9967	4101930.034	4157866.152	600	3/18/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9966	GSF-9966	4101952.048	4157910.014	600	3/18/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9965	GSF-9965	4101975.624	4157954.352	600	3/18/2001	2	2	2.18	8%		0.0512	0.0003645440	0.000364544	Estimated	
9964	GSF-9964	4101994.181	4157994.168	600	3/18/2001	1.0	1				0.0256	0.0001822720	0.000182272	Estimated	
9963	GSF-9963	4102014.168	4158029.302	600	3/18/2001	1.0	1				0.0256	0.0001822720	0.000182272	Estimated	
9962	GSF-9962	4102016.349	4157952.310	600	3/18/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9961	GSF-9961	4101968.754	4157866.483	600	3/18/2001	2	2	1.46	37%		0.0512	0.0003645440	0.000364544	Estimated	
9959	GSF-9959	4102026.754	4157863.754	600	3/16/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9958	GSF-9958	4102051.857	4157907.281	600	3/18/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9957	GSF-9957	4102073.634	4157951.922	600	3/16/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9956	GSF-9956	4102273.366	4158211.818	600	3/15/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9955	GSF-9955	4102129.162	4157949.209	600	3/16/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9954	GSF-9954	4102082.282	4157861.041	600	3/16/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9953	GSF-9953	4102036.790	4157776.711	600	3/16/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9952	GSF-9952	4102090.584	4157770.989	600	3/16/2001	<1.0	1				0.0256	0.0001822720	0.000182272	Estimated	
9951	GSF-9951	4102137.768	4157860.956	600	3/16/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9949	GSF-9949	4102184.853	4157947.054	600	3/16/2001	1.0	1				0.0256	0.0001822720	0.000182272	Estimated	
9948	GSF-9948	4102279.579	4158122.645	600	3/15/2001	110	110	72.1	53%		2.816	0.0200499200	0.02004992	Surveyed	
9947	GSF-9947	4102327.021	4158210.745	600	3/15/2001	4.0	4				0.1024	0.0007290880	0.000729088	Estimated	
9946	GSF-9946	4102384.273	4158209.068	600	3/15/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9945	GSF-9945	4102336.103	4158120.932	600	3/15/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Estimated	
9944	GSF-9944	4102288.714	4158033.035	600	3/15/2001	2.5	2.5				0.064	0.0004556800	0.00045568	Estimated	
9943	GSF-9943	4102241.325	4157945.137	600	3/15/2001	2.0	2				0.0512	0.0003645440	0.000364544	Estimated	
9942	GSF-9942	4102194.207	4157857.750	600	3/16/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9941	GSF-9941	4102146.547	4157769.343	600	3/16/2001	<1.0	1			<	0.0256	0.0001822720	0.000182272	Estimated	
9940	GSF-9940	4102202.138	4157767.025	600	3/16/2001	<1.0	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9939	GSF-9939	4102249.746	4157856.562	600	3/15/2001	<1	1				0.0256	0.0001822720	0.000182272	Estimated	
9938	GSF-9938	4102296.459	4157943.115	600	3/15/2001	2.5	2.5				0.064	0.0004556800	0.00045568	Estimated	
9937	GSF-9937	4102344.571	4158031.001	600	3/15/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Estimated	
9935	GSF-9935	4102438.592	4158207.060	600	3/15/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Estimated	
9934	GSF-9934	4102446.991	4158116.993	600	3/15/2001	1.5	1.5	1.48	1%		0.0384	0.0002734080	0.000273408	Estimated	
9933	GSF-9933	4102400.817	4158030.153	600	3/15/2001	1.0	1				0.0256	0.0001822720	0.000182272	Estimated	
9932	GSF-9932	4102354.070	4157942.234	600	3/15/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Estimated	
9931	GSF-9931	4102305.958	4157854.348	600	3/15/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Estimated	
9931	GSF-9931	4102305.958	4157854.348	600	3/16/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Estimated	
9930	GSF-9930	4102258.098	4157765.637	600	3/15/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Estimated	
9930	GSF-9930	4102258.098	4157765.637	600	3/16/2001	1.0	1				0.0256	0.0001822720	0.000182272	Estimated	
9911	GSF-9911			600	3/16/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	?	
9910	GSF-9910	4102351.268	4158254.405	600	3/15/2001	<1	1			<	0.0384	0.0002734080	<0.000273408	Surveyed	
9909	GSF-9909	4102303.475	4158166.565	600	3/15/2001	5.0	5	5.23	4%		0.128	0.0009113600	0.00091136	Surveyed	
9908	GSF-9908	4102162.329	4157903.463	600	3/14/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	bottle GSF-9908-031401
9907	GSF-9907	4102112.305	4157815.205	600	3/14/2001	2	2	1.59	26%		0.0512	0.0003645440	0.000364544	Surveyed	
9906	GSF-9906	4102415.212	4158162.693	600	3/15/2001	1.3	1				0.0256	0.0001822720	0.000182272	Surveyed	
9905	GSF-9905	4102367.419	4158074.853	600	3/15/2001	1.0	1				0.0256	0.0001822720	0.000182272	Surveyed	
9904	GSF-9904	4102319.627	4157987.013	600	3/14/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	bottle GSF-9904-031401
9903	GSF-9903	4102271.834	4157899.173	600	3/14/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	bottle GSF-9903-031401
9902	GSF-9902	4102224.042	4157811.333	600	3/14/2001	2.5	2.5				0.064	0.0004556800	0.00045568	Surveyed	
9902	GSF-9902	4102224.042	4157811.333	600	3/16/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Surveyed	
9901	GSF-9901	4102176.249	4157723.493	600	3/16/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Surveyed	
9852	GSF-9852	4102354.820	4158052.700	600	3/15/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Surveyed	
GSF-NA21	GSF-NA21			700	3/27/2001	3.5	3.5				0.0896	0.0006379520	0.000637952	?	1st Flux Test
GSF-NA2	GSF-NA2	4102103.067	4158427.577	700	3/27/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Coordinates from "master.xls"	1st Flux Test @ Location
GSF-NA11	GSF-NA11	4102012.753	4158311.251	700	3/28/2001	15	15				0.384	0.0027340800	0.00273408	Coordinates from "master.xls"	1st Test
GSF-NA1	GSF-NA1	4102065.851	4158482.176	700	3/27/2001	2	2				0.0512	0.0003645440	0.000364544	Coordinates from "master.xls"	1st Flux Test
5131	GSF-068	4101936.629	4158351.709	700	3/28/2001	3000	3000				76.8	0.5468160000	0.546816	Surveyed	2nd Test;Advective locale
5134	GSF-067	4101931.210	4158357.567	700	3/27/2001	15	15				0.384	0.0027340800	0.00273408	Surveyed	6th Test
5132	GSF-066	4101923.534	4158347.413	700	3/28/2001	2100	2100				53.76	0.3827712000	0.3827712	Surveyed	2nd Test;Advective locale
GSF-062	GSF-062	4102033.030	4158526.310	700	3/27/2001	3.5	3.5				0.0896	0.0006379520	0.000637952	Surveyed	2nd Test

Location ID	Location Description	Northing	Easting	Product Area ID	Date	FGD Text	Flux Chamber Value, ppm	Off-Site Analysis, ppm	RPD	Qualifier	Mass Surface Flux (mg/m2/min)	Volume Surface Flux (ft3/ft2/day)	Volume Surface Flux	Coordinate Source	Comments
GSF-059	GSF-059	4101998.310	4158532.720	700	3/27/2001	6.5	6.5				0.1664	0.0011847680	0.001184768	Surveyed	5th Test
GSF-058	GSF-058	4101986.750	4158431.090	700	3/27/2001	4	4				0.1024	0.0007290880	0.000729088	Surveyed	2nd Test
GSF-056	GSF-056	4102007.020	4158474.870	700	3/27/2001	4	4				0.1024	0.0007290880	0.000729088	Surveyed	2nd Test
GSF-055	GSF-055	4101943.750	4158428.850	700	3/28/2001	20	20				0.512	0.0036454400	0.00364544	Surveyed	2nd Test
GSF-055	GSF-055	4101943.750	4158428.850	700	3/28/2001	2.5	2.5				0.064	0.0004556800	0.00045568	Surveyed	2nd Test
GSF-053	GSF-053	4102026.950	4158442.420	700	3/27/2001	3	3				0.0768	0.0005468160	0.000546816	Surveyed	2nd test
GSF-052	GSF-052	4101968.130	4158358.310	700	3/27/2001	8	8				0.2048	0.0014581760	0.001458176	Surveyed	2nd Test
GSF-050	GSF-050	4101997.520	4158454.480	700	3/27/2001	8	8				0.2048	0.0014581760	0.001458176	Surveyed	2nd Test
GSF-049	GSF-049	4101957.660	4158331.080	700	3/27/2001	3.5	3.5				0.0896	0.0006379520	0.000637952	Surveyed	2nd Test
5145	GSF-047	4101974.922	4158465.593	700	3/28/2001	28	28				0.7168	0.0051036160	0.005103616	Surveyed	2nd Test
5135	GSF-046	4101935.756	4158371.416	700	3/28/2001	300	300				7.68	0.0546816000	0.0546816	Surveyed	2nd Test
5128	GSF-044	4101944.465	4158322.520	700	3/27/2001	3.5	3.5				0.0896	0.0006379520	0.000637952	Surveyed	3rd Test
5127	GSF-043	4101922.814	4158331.500	700	3/28/2001	8	8				0.2048	0.0014581760	0.001458176	Surveyed	2nd Test
GSF-042-CP	GSF-042-CPT	4101914.235	4158307.602	700	3/28/2001	12000	12000				307.2	2.1872640000	2.187264	Surveyed	Highest Advective (1.2%)
5124	GSF-042	4101914.235	4158307.602	700	3/27/2001	7500	7500				192	1.3670400000	1.36704	Surveyed	2nd Test
GSF-040	GSF-040	4101923.870	4158388.850	700	3/28/2001	5	5				0.128	0.0009113600	0.00091136	Surveyed	2nd Test
5123	GSF-039	4101978.208	4158272.307	700	3/28/2001	3	3				0.0768	0.0005468160	0.000546816	Surveyed	2nd Test
GSF-037	GSF-037	4101919.770	4158353.570	700	3/27/2001	8	8				0.2048	0.0014581760	0.001458176	Surveyed	4th Test
5126	GSF-034	4101888.933	4158320.172	700	3/28/2001	4500	4500				115.2	0.8202240000	0.820224	Surveyed	2nd Test
GSF-032	GSF-032	4101961.850	4158392.440	700	3/27/2001	40	40				1.024	0.0072908800	0.00729088	Surveyed	2nd Test
5133	GSF-031	4101920.763	4158357.879	700	3/27/2001	24	24				0.6144	0.0043745280	0.004374528	Surveyed	2nd Test (old control & lower)
GSF-030	GSF-030	4101994.880	4158379.590	700	3/27/2001	4	4				0.1024	0.0007290880	0.000729088	Surveyed	2nd test
5140	GSF-028	4101936.807	4158403.156	700	3/28/2001	3.5	3.5				0.0896	0.0006379520	0.000637952	Surveyed	2nd Test
GSF-026	GSF-026	4101960.620	4158448.880	700	3/28/2001	10	10				0.256	0.0018227200	0.00182272	Surveyed	2nd Test
GSF-025	GSF-025	4102044.900	4158523.074	700	3/28/2001	7	7				0.1792	0.0012759040	0.001275904	?	2nd Test
5154	GSF-024	4102043.163	4158371.520	700	3/27/2001	4.5	4.5				0.1152	0.0008202240	0.000820224	Surveyed	2nd Test
GSF-023	GSF-023	4102021.750	4158423.880	700	3/27/2001	2	2				0.0512	0.0003645440	0.000364544	Surveyed	2nd Test
GSF-020	GSF-020	4102037.370	4158459.510	700	3/27/2001	3.5	3.5				0.0896	0.0006379520	0.000637952	Surveyed	2nd Flux Test
5156	GSF-018	4102082.412	4158456.037	700	3/27/2001	300	300				7.68	0.0546816000	0.0546816	Surveyed	2nd Test
5161	GSF-016	4102142.681	4158489.622	700	3/26/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
5162	GSF-015	4102094.918	4158502.210	700	3/26/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
5163	GSF-013	4102049.132	4158520.928	700	3/27/2001	2	2				0.0512	0.0003645440	0.000364544	Surveyed	2nd Test
5167	GSF-010	4102135.424	4158515.174	700	3/28/2001	0.0	0				0	0.0000000000	No data	Surveyed	2nd Test (MFID not OVA)
5170	GSF-009	4102041.662	4158546.663	700	3/28/2001	1.8	1.8				0.04608	0.0003280896	0.0003280896	Surveyed	2nd Test
5101	GSF-008	4101982.405	4158565.316	700	3/28/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	2nd Test
GSF-007	GSF-007	4101936.830	4158463.660	700	3/28/2001	11	11				0.2816	0.0020049920	0.002004992	Surveyed	2nd Test
5216	GSF-006	4101897.782	4158402.229	700	3/28/2001	32	32				0.8192	0.0058327040	0.005832704	Surveyed	2nd Test; Old control point
5286	GSF-004	4101944.045	4158266.270	700	3/28/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	2nd Test
1036	GSF-9999	4102173.812	4158753.565	800	3/19/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1034	GSF-9998	4102223.720	4158753.028	800	3/19/2001	2	2	2.13	6%		0.0512	0.0003645440	0.000364544	Surveyed	
1035	GSF-9997	4102174.332	4158663.473	800	3/21/2001	2	2.0	2.27	12%		0.0512	0.0003645440	0.000364544	Surveyed	
1033	GSF-9996	4102223.649	4158639.614	800	3/19/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1032	GSF-9995	4102284.518	4158750.229	800	3/19/2001	1.5	1.5	2.02	26%		0.0384	0.0002734080	0.000273408	Surveyed	
1030	GSF-9994	4102334.181	4158749.231	800	3/19/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1031	GSF-9993	4102286.203	4158660.108	800	3/21/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Surveyed	
1029	GSF-9992	4102346.112	4158658.389	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1027	GSF-9991	4102401.539	4158656.729	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1028	GSF-9990	4102347.552	4158567.808	800	3/21/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1026	GSF-9989	4102403.685	4158566.364	800	3/21/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1025	GSF-9988	4102458.657	4158655.313	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1024	GSF-9987	4102518.187	4158651.468	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1023	GSF-9986	4102471.649	4158563.943	800	3/21/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1022	GSF-9985	4102519.686	4158563.219	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1021	GSF-9984	4102577.264	4158561.558	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1020	GSF-9983	4102636.468	4158559.624	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1018	GSF-9982	4102692.635	4158557.531	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1019	GSF-9981	4102637.105	4158474.196	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9922	GSF-9922	4102191.078	4158796.936	800	3/15/2001	2	2				0.0512	0.0003645440	0.000364544	Surveyed	
9921	GSF-9921	4102143.286	4158709.096	800	3/15/2001	80	80				2.048	0.0145817600	0.01458176	Surveyed	
9920	GSF-9920	4102255.022	4158705.223	800	3/19/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9919	GSF-9919	4102207.229	4158617.383	800	3/15/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9919	GSF-9919	4102207.229	4158617.383	800	3/19/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9918	GSF-9918	4102366.758	4158701.350	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	

Location ID	Location Description	Northing	Easting	Product Area ID	Date	FGD Text	Flux Chamber Value, ppm	Off-Site Analysis, ppm	RPD	Qualifier	Mass Surface Flux (mg/m2/min)	Volume Surface Flux (ft3/ft2/day)	Volume Surface Flux	Coordinate Source	Comments
9917	GSF-9917	4102318.966	4158613.510	800	3/15/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9916	GSF-9916	4102430.702	4158609.638	800	3/15/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9915	GSF-9915	4102542.438	4158605.765	800	3/21/2001	2	2.0	1.37	46%	<	0.0512	0.0003645440	0.000364544	Surveyed	
9914	GSF-9914	4102494.646	4158517.925	800	3/15/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9913	GSF-9913	4102606.382	4158514.053	800	3/15/2001	1.5	1.5			<	0.0384	0.0002734080	0.000273408	Surveyed	
212	GSF-212	4102135.210	4158798.872	800	3/21/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
211	GSF-211	4102087.417	4158711.032	800	3/19/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
194	GSF-194	4102151.361	4158626.529	800	3/19/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Bad Survey?	
193	GSF-193	4102199.154	4158707.159	800	3/19/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
192	GSF-192	4102246.946	4158794.999	800	3/19/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
189	GSF-189	4102310.890	4158703.287	800	3/21/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
188	GSF-188	4102263.097	4158615.447	800	3/19/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
170	GSF-170	4102374.834	4158611.574	800	3/21/2001	2	2.0	1.96	2%	<	0.0512	0.0003645440	0.000364544	Surveyed	
169	GSF-169	4102422.626	4158699.414	800								No data		Surveyed	
166	GSF-166	4102486.570	4158607.702	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
165	GSF-165	4102438.777	4158519.862	800	3/21/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
147	GSF-147	4102550.514	4158515.989	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
146	GSF-146	4102598.306	4158603.829	800	3/20/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
143	GSF-143	4102662.250	4158512.117	800								No data		Surveyed	
1039	GSF-10002	4102112.767	4158756.479	800	3/19/2001	1	1.0			<	0.0256	0.0001822720	0.000182272	Surveyed	Ponded water
1038	GSF-10001	4102066.660	4158667.543	800	3/21/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
1037	GSF-10000	4102127.490	4158665.335	800	3/19/2001	1	<1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
9959	GSF-12230	4101737.643	4159044.403	CC	4/2/2001	0.5	0.5			<	0.0128	0.0000911360	0.000091136		
9958	GSF-12229	4101690.696	4158956.108	CC	4/2/2001	0.5	0.5			<	0.0128	0.0000911360	0.000091136		
9957	GSF-12228ALT	4101643.749	4158867.813	CC	4/2/2001	1.5	1.5	0.68	121%	<	0.0384	0.0002734080	0.000273408		
9956	GSF-12227	4101790.635	4158959.598	CC	4/2/2001	1.6	1.6			<	0.04096	0.0002916352	0.0002916352		
9955	GSF-12226	4101743.688	4158871.303	CC	4/2/2001	0.3	0.3			<	0.00768	0.0000546816	0.0000546816		
9954	GSF-12225	4101890.574	4158963.088	CC	4/2/2001	1	<1			<	0.0256	0.0001822720	<0.000182272		
9953	GSF-12224	4101843.627	4158874.793	CC	4/2/2001	2.2	2.2			<	0.05632	0.0004009984	0.0004009984		
9952	GSF-12223	4101796.680	4158786.499	CC	4/2/2001	1.8	1.8			<	0.04608	0.0003280896	0.0003280896		
9950	GSF-12222	4101896.619	4158789.989	CC	4/2/2001	1	1			<	0.0256	0.0001822720	0.000182272		
9951	GSF-12221	4101943.566	4158878.283	CC	4/2/2001	3.5	3.5	0.59	493%	<	0.0896	0.0006379520	0.000637952		
9949	GSF-12220	4102043.505	4158881.773	CC	4/2/2001	1.6	1.6			<	0.04096	0.0002916352	0.0002916352		
9948	GSF-12219	4101996.558	4158793.478	CC	4/2/2001	1	<1			<	0.0256	0.0001822720	<0.000182272		
9947	GSF-12218	4101949.611	4158705.184	CC	4/2/2001	2.5	2.5			<	0.064	0.0004556800	0.00045568		
GSF-NA9	GSF-NA9	4102127.848	4158247.091	NCP	3/23/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "master.xls"	
GSF-NA8	GSF-NA8	4102135.687	4158294.713	NCP	3/23/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "master.xls"	
GSF-NA7	GSF-NA7	4102154.991	4158333.689	NCP	3/26/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "master.xls"	Retest
GSF-NA7	GSF-NA7	4102154.991	4158333.689	NCP	3/23/2001	1.5	1.5			<	0.0384	0.0002734080	0.000273408	Coordinates from "master.xls"	
GSF-NA6	GSF-NA6	4102171.617	4158382.376	NCP	3/26/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "master.xls"	
GSF-NA5	GSF-NA5	4102175.713	4158432.278	NCP	3/26/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "master.xls"	
GSF-NA4	GSF-NA4	4102145.756	4158368.983	NCP	3/26/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "master.xls"	
GSF-NA3	GSF-NA3	4102067.619	4158319.524	NCP	3/28/2001	1.5	1.5			<	0.0384	0.0002734080	0.000273408	Coordinates from "master.xls"	1st Test
GSF-NA10	GSF-NA10	4102083.847	4158261.031	NCP	3/28/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Coordinates from "master.xls"	1st Test
ETI-173	GSF-ETI-173	4102231.456	4158348.054	NCP	3/18/2001	1.0	1			<	0.0256	0.0001822720	0.000182272	Coordinates from "work_mjs_3_20.xls"	
GSF-12214	GSF-12214	4102233.790	4158434.640	NCP	3/29/2001	1.5	1.5	1.69	11%	<	0.0384	0.0002734080	0.000273408	Surveyed	Grid Point
GSF-12211	GSF-12211	4102333.850	4158438.120	NCP	3/29/2001	1	1	0.8	25%	<	0.025600	0.0001822720	0.000182272	Surveyed	
GSF-12210	GSF-12210	4102286.700	4158350.010	NCP	3/29/2001	2.5	2.5	2.02	24%	<	0.064	0.0004556800	0.00045568	Surveyed	Grid Point
GSF-12209	GSF-12209	4102239.880	4158261.520	NCP	3/29/2001	2	2	0.46	335%	<	0.011776	0.0000838451	0.00008384512	Surveyed	OVA problem-analyze sample, off-site data used
GSF-12207	GSF-12207	4102386.600	4158353.800	NCP	3/29/2001	11	11	2.16	409%	<	0.055296	0.0003937075	0.00039370752	Surveyed	OVA problem-analyze sample, off-site data used
GSF-12206	GSF-12206	4102339.780	4158265.130	NCP	3/29/2001	10	10	0.54	1752%	<	0.013824	0.0000984269	0.00009842688	Surveyed	OVA problem-analyze sample, off-site data used
GSF-12205	GSF-12205	4102486.950	4158356.810	NCP	3/29/2001	1	<1	0		<	0.0256	0.0001822720	<0.000182272	Surveyed	Grid Point
GSF-12204	GSF-12204	4102439.870	4158268.440	NCP	3/29/2001	8	8	1.9	321%	<	0.04864	0.0003463168	0.0003463168	Surveyed	OVA problem-analyze sample, off-site data used
GSF-12203	GSF-12203	4102586.590	4158360.260	NCP	3/29/2001	1	<1	0		<	0.0256	0.0001822720	<0.000182272	Surveyed	Grid Point
GSF-12202	GSF-12202	4102539.520	4158272.110	NCP	3/29/2001	1	<1	0		<	0.0256	0.0001822720	<0.000182272	Surveyed	Grid Point
GSF-12201	GSF-12201	4102492.620	4158183.660	NCP	3/29/2001	1	<1	0		<	0.0256	0.0001822720	<0.000182272	Surveyed	Grid Point
GSF-060	GSF-060	4102349.710	4158369.320	NCP	3/29/2001	12	12	1.8	567%	<	0.04608	0.0003280896	0.0003280896	Surveyed	OVA problem-analyze sample, off-site data used
GSF-060	GSF-060	4102349.710	4158369.320	NCP	3/26/2001	1	1			<	0.0256	0.0001822720	0.000182272	Surveyed	
GSF-057	GSF-057	4102325.880	4158320.750	NCP	3/29/2001	12	12	1.19	908%	<	0.030464	0.0002169037	0.00021690368	Surveyed	OVA problem-analyze sample, off-site data used
GSF-057	GSF-057	4102325.880	4158320.750	NCP	3/23/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
GSF-054	GSF-054	4102306.120	4158277.340	NCP	3/29/2001	10	10	1.09	817%	<	0.027904	0.0001986765	0.00019867648	Surveyed	OVA problem-analyze sample, off-site data used
GSF-054	GSF-054	4102306.120	4158277.340	NCP	3/23/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
5150	GSF-051	4102191.720	4158272.236	NCP	3/23/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	

Location ID	Location Description	Northing	Easting	Product Area ID	Date	FGD Text	Flux Chamber Value, ppm	Off-Site Analysis, ppm	RPD	Qualifier	Mass Surface Flux (mg/m2/min)	Volume Surface Flux (ft3/ft2/day)	Volume Surface Flux	Coordinate Source	Comments
5149	GSF-048	4102180.459	4158223.775	NCP	3/23/2001	50	50				1.28	0.0091136000	0.0091136	Surveyed	
5115	GSF-045	4102189.107	4158163.336	NCP	3/23/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
5116	GSF-041	4102154.912	4158180.090	NCP	3/23/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
5117	GSF-038	4102111.844	4158205.326	NCP	3/23/2001	2.5	2.5				0.064	0.0004556800	0.00045568	Surveyed	
5118	GSF-035	4102067.808	4158228.001	NCP	3/28/2001	2	2				0.0512	0.0003645440	0.000364544	Surveyed	2nd Test
5120	GSF-033	4102022.407	4158249.324	NCP	3/28/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	2nd Test
5148	GSF-029	4102050.477	4158277.735	NCP	3/28/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	2nd Test
5153	GSF-027	4102090.225	4158342.892	NCP	3/27/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Surveyed	2nd Test
5157	GSF-017	4102130.242	4158446.467	NCP	3/26/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
5158	GSF-014	4102237.966	4158464.295	NCP	3/26/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	
GSF-012	GSF-012	4102422.980	4158419.550	NCP	3/29/2001	5	5	1.89	165%		0.048384	0.0003444941	0.00034449408	Surveyed	OVA problem-analyze sample, off-site data used
GSF-012	GSF-012	4102422.980	4158419.550	NCP	3/26/2001	2	2				0.0512	0.0003645440	0.000364544	Surveyed	
5168	GSF-011	4102231.104	4158485.678	NCP	3/28/2001	0.0	0				0	0.0000000000	No data	Surveyed	2nd Test (MFID not OVA)
5287	GSF-003	4102034.355	4158217.692	NCP	3/28/2001	1.5	1.5				0.0384	0.0002734080	0.000273408	Surveyed	2nd Test
5113	GSF-002	4102120.960	4158174.227	NCP	3/28/2001	<1	1			<	0.0256	0.0001822720	<0.000182272	Surveyed	2nd Test
GSF-001	GSF-001	4102326.873	4158455.795	NCP	3/28/2001	2	2				0.0512	0.0003645440	0.000364544	Surveyed	2nd Test