2001 - ROYERSFORD WASTEWATER DISCHARGE SUMMARY

MONTH	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL TOTALS
GALLONS	395000	500000	875000	1175000	645000	310000	275000	320000	940000	990000	430000	235000	7090000 GALLONS
H-3	7.81E-06	7.81E-06	7.81E-06	8.20E-06	8.20E-06	8.20E-06	1.32E-05	1.32E-05	1.32E-05	5.04E-06	5.04E-06	5.04E-06	
mCi H-3	11.676536	14.780425	25.865744	36.468475	20.018865	9.62147	13.73955	15.98784	46.96428	18.885636	8.202852	4.482954	226.69463 mCi H-3
C-14	3.55E-06	3.55E-06	3.55E-06	4.69E-06	4.69E-06	4.69E-06	5.25E-06	5.25E-06	5.25E-06	7.05E-06	7.05E-06	7.05E-06	
mCi C-14	5.3075163	6.718375	11.757156	20.858189	11.449814	5.5030115	5.4645938	6.3588	18.678975	26.417408	11.474228	6.2707988	136.25886 mCi C-14
K-40	1.98E-07	2.12E-07	ND	ND	2.54E-07	ND	ND	1.22E-07	ND	ND	ND	2.72E-07	
Cr-51	ND	3.43E-07	5.89E-07	5.72E-07	8.79E-07	ND	ND	ND	ND	2.61E-07	ND	ND	
Mn-54	4.51E-07	5.77E-07	7.92E-07	5.90E-07	7.64E-07	6.36E-07	3.94E-07	9.56E-08	1.17E-07	9.08E-07	7.56E-07	1.22E-06	
Fe-55	9.88E-06	9.88E-06	9.88E-06	1.29E-05	1.29E-05	1.29E-05	3.13E-06	3.13E-06	3.13E-06	1.36E-05	1.36E-05	1.36E-05	
Fe-59	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.66E-08	ND	
Co-57	ND	ND	ND	ND	2.37E-08	ND	ND	ND	ND	ND	ND	ND	
Co-58	7.89E-07	8.80E-07	6.02E-07	1.45E-06	4.11E-06	6.01E-07	1.98E-07	5.63E-08	2.09E-07	1.18E-06	1.52E-06	1.53E-06	
Co-60	1.41E-06	1.72E-06	1.40E-06	1.28E-06	1.70E-06	1.13E-06	1.04E-06	4.43E-07	6.11E-07	1.73E-06	1.25E-06	2.14E-06	
Ni-63	3.58E-07	3.58E-07	3.58E-07	9.39E-07	9.39E-07	9.39E-07	9.98E-07	9.98E-07	9.98E-07	1.28E-06	1.28E-06	1.28E-06	
Zn-65	2.40E-07	ND	ND	ND	ND	6.34E-08	ND	6.62E-08	4.97E-08	7.40E-08	ND	1.65E-07	
Sr-89	*	*	*	*	*	*	*	*	*	*	*	*	
Sr-90	5.39E-09	5.39E-09	5.39E-09	4.82E-09	4.82E-09	4.82E-09	5.38E-09	5.38E-09	5.38E-09	4.44E-09	4.44E-09	4.44E-09	
Zr-95	ND	ND	5.64E-08	1.05E-07	3.43E-07	1.20E-07	ND	ND	ND	ND	7.69E-08	5.48E-08	
Nb-95	5.06E-08	7.62E-08	7.47E-08	1.63E-07	5.77E-07	2.68E-07	ND	ND	ND	4.86E-08	9.18E-08	4.73E-08	
Tc-99	4.37E-07	4.37E-07	4.37E-07	5.70E-07	5.70E-07	5.70E-07	3.32E-07	3.32E-07	3.32E-07	6.16E-07	6.16E-07	6.16E-07	
Ag-110m	1.26E-07	ND	ND	ND	9.43E-08	ND	3.38E-08	ND	4.80E-08	6.17E-08	9.62E-08	ND	
Sb-125	1.42E-07	ND	ND	ND	ND	7.37E-08	ND	ND	ND	ND	ND	ND	
I-125	ND	ND	ND	1.14E-06	ND	ND	ND	ND	ND	ND	ND	ND	
I-129	<MDA	<MDA	<MDA	2.45E-08	2.45E-08	2.45E-08	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	
Cs-134	1.62E-07	3.46E-08	6.71E-08	5.84E-08	1.09E-07	7.02E-08	5.39E-08	ND	6.53E-08	8.26E-08	8.53E-08	4.59E-08	
Cs-137	1.04E-06	4.58E-07	5.00E-07	6.38E-07	1.01E-06	4.79E-07	4.51E-07	2.19E-07	5.95E-07	7.43E-07	8.71E-07	6.31E-07	
Eu-152	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Eu-154	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Pb-212	ND	ND	ND	ND	ND	ND	ND	ND	1.24E-07	ND	ND	ND	
Ra-226	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Th-228	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	
Th-230	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	
Th-232	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	
Th-234	ND	ND	ND	ND	ND	ND	ND	4.24E-07	3.94E-07	ND	ND	ND	
U-234	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	
U-235	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	2.48E-08	ND	ND	ND	ND	
U-238	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	
Pu-238	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	
Pu-239	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	
Np-237	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	
Am-241	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	
Cm-244	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	
CONC.	1.53E-05	1.50E-05	1.48E-05	2.03E-05	2.43E-05	1.79E-05	6.65E-06	5.92E-06	6.69E-06	2.06E-05	2.03E-05	2.16E-05	
ACTIVITY	22.866063	28.3550966	48.910989	90.501004	59.363547	20.992285	6.9203907	7.1748799	23.793556	77.192069	33.080146	19.220201	438.37023 mCi AORN

Notes:
CONC. is total concentration for all nuclides except H-3 and C-14.
All concentrations are in uCi/ml. All activities are in mCi.
NF - Not found in gamma spectra search
<MDA - Less than minimum dection limit for analytical method.
*Sr-89/90 analyzed and reported as total Sr unless >50 pCi/L. Conservatively assigned to Sr-90

AORN - All other radionuclides (except for H-3 and C-14)
ND - No Data

UniTech Services Group, Inc. - Fourth Quarter
2001 Effluent Report

Encl 1 to 6/18/2002 RI Letter

MMS/RCM MATERIALS-002

079 - Royersford

079 - ROYERSFORD RATIOS OF DISCHARGES TO LIMITS													
	LIMIT	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC
H-3	1.0E-02	0.00078	0.00078	0.00078	0.00082	0.00082	0.00082	0.00132	0.00132	0.00132	0.00050	0.00050	0.00050
C-14	3.0E-04	0.01183	0.01183	0.01183	0.01563	0.01563	0.01563	0.01750	0.01750	0.01750	0.02350	0.02350	0.02350
K-40	4.0E-05	0.00494	0.00530			0.00636			0.00305				0.00680
Cr-51	5.0E-03		0.00007	0.00012	0.00011	0.00018					0.00005		
Mn-54	3.0E-04	0.00150	0.00192	0.00264	0.00197	0.00255	0.00212	0.00131	0.00032	0.00039	0.00303	0.00252	0.00405
Fe-55	1.0E-03	0.00988	0.00988	0.00988	0.01290	0.01290	0.01290	0.00313	0.00313	0.00313	0.01360	0.01360	0.01360
Fe-59	1.0E-04											0.00067	
Co-57	6.0E-04					0.00004							
Co-58	2.0E-04	0.00394	0.00440	0.00301	0.00725	0.02055	0.00301	0.00099	0.00028	0.00105	0.00590	0.00761	0.00766
Co-60	3.0E-05	0.04703	0.05717	0.04660	0.04277	0.05677	0.03777	0.03480	0.01475	0.02037	0.05777	0.04170	0.07120
Ni-63	1.0E-03	0.00036	0.00036	0.00036	0.00094	0.00094	0.00094	0.00100	0.00100	0.00100	0.00128	0.00128	0.00128
Zn-65	5.0E-05	0.00479					0.00127		0.00132	0.00099	0.00148		0.00330
Sr-89	8.0E-05												
Sr-90	5.0E-06	0.00108	0.00108	0.00108	0.00096	0.00096	0.00096	0.00108	0.00108	0.00108	0.00089	0.00089	0.00089
Zr-95	2.0E-04			0.00028	0.00053	0.00172	0.00060					0.00038	0.00027
Nb-95	3.0E-04	0.00017	0.00025	0.00025	0.00054	0.00192	0.00089				0.00016	0.00031	0.00016
Tc-99	6.0E-04	0.00073	0.00073	0.00073	0.00095	0.00095	0.00095	0.00055	0.00055	0.00055	0.00103	0.00103	0.00103
Ag-110m	6.0E-05	0.00210				0.00157		0.00056		0.00080	0.00103	0.00160	
Sb-125	3.0E-04	0.00047					0.00025						
I-125	2.0E-05				0.05720								
I-129	2.0E-06				0.01225	0.01225	0.01225						
Cs-134	9.0E-06	0.01799	0.00384	0.00746	0.00648	0.01214	0.00780	0.00599		0.00725	0.00918	0.00948	0.00510
Cs-137	1.0E-05	0.10370	0.04577	0.05004	0.05379	0.10130	0.04787	0.04514	0.02190	0.05952	0.07426	0.08712	0.06305
Eu-152	1.0E-04												
Eu-154	7.0E-05												
Pb-212	2.0E-06									0.06190			
Ra-226	6.0E-07												
Th-228	2.0E-06	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Th-230	1.0E-06	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115
Th-232	5.0E-05	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Th-234	5.0E-05								0.00847	0.00788			
U-234	3.0E-06	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026
U-235	3.0E-06								0.00826				
U-238	3.0E-06	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
Pu-238	2.0E-07	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680
Pu-239	2.0E-07	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493
Np-237	2.0E-07												
Am-241	2.0E-07	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860
Cm-244	3.0E-07												
TOTAL	1.00	0.23385	0.16593	0.15760	0.23764	0.27209	0.16858	0.13592	0.10548	0.20728	0.21620	0.21473	0.22495

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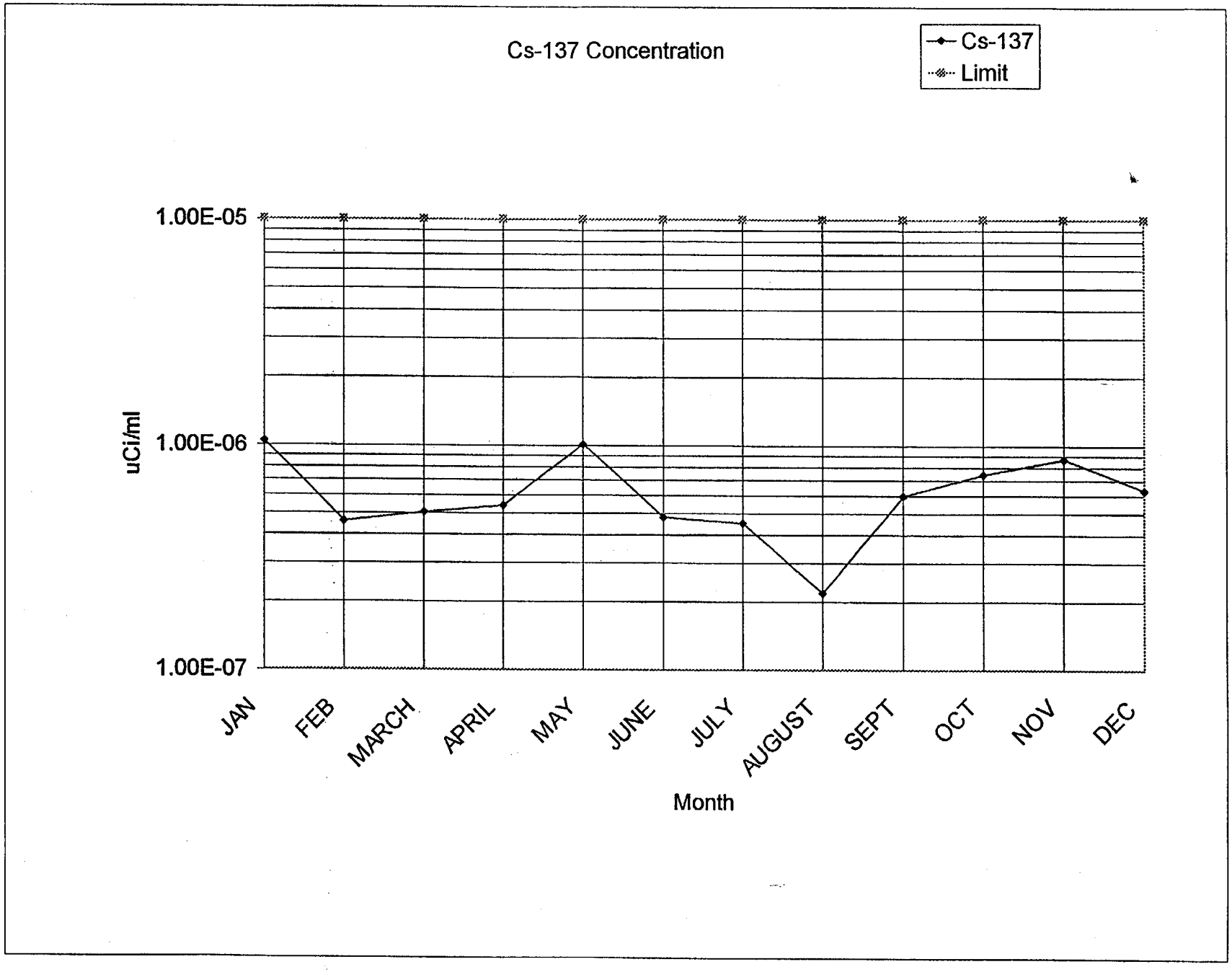

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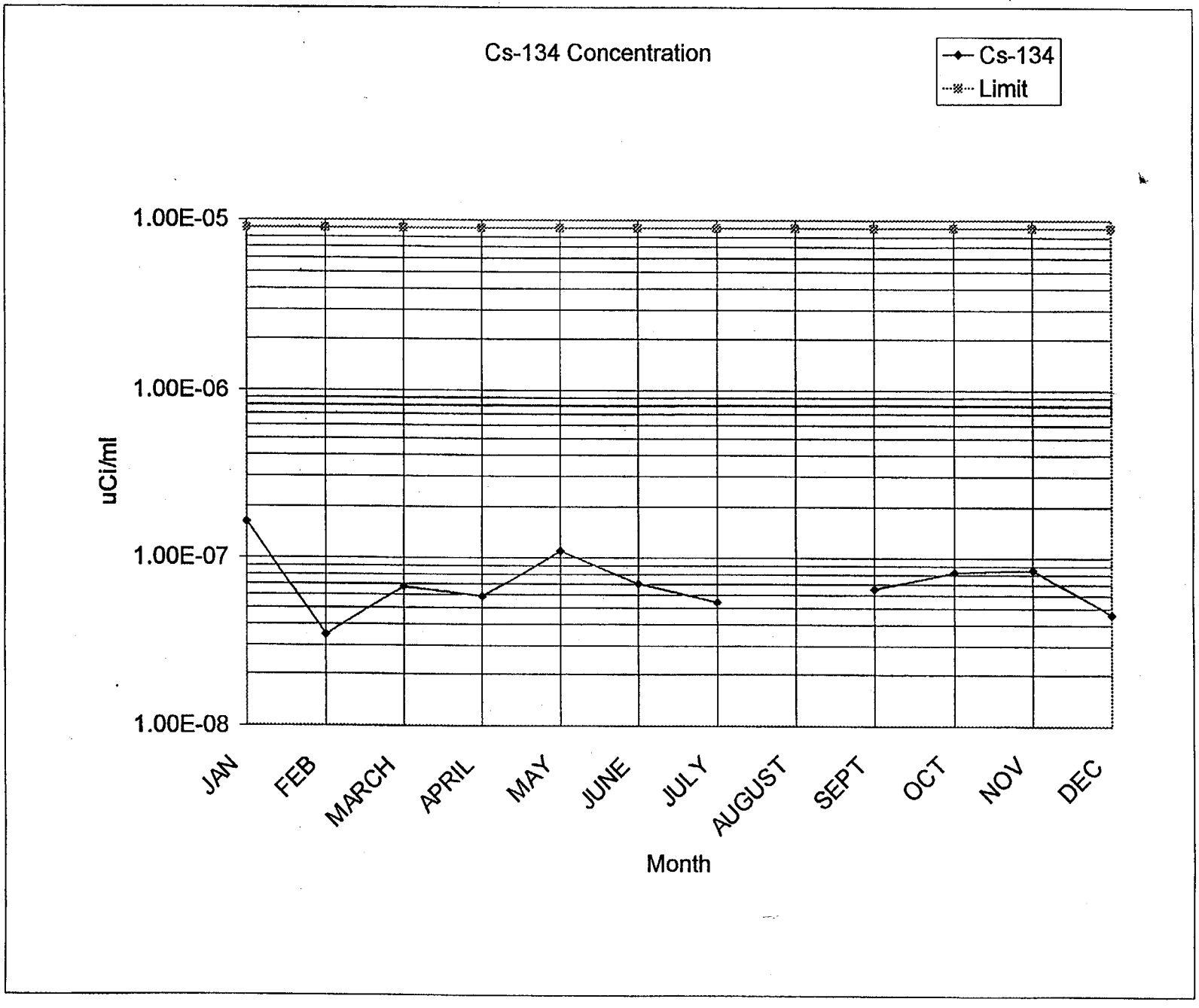

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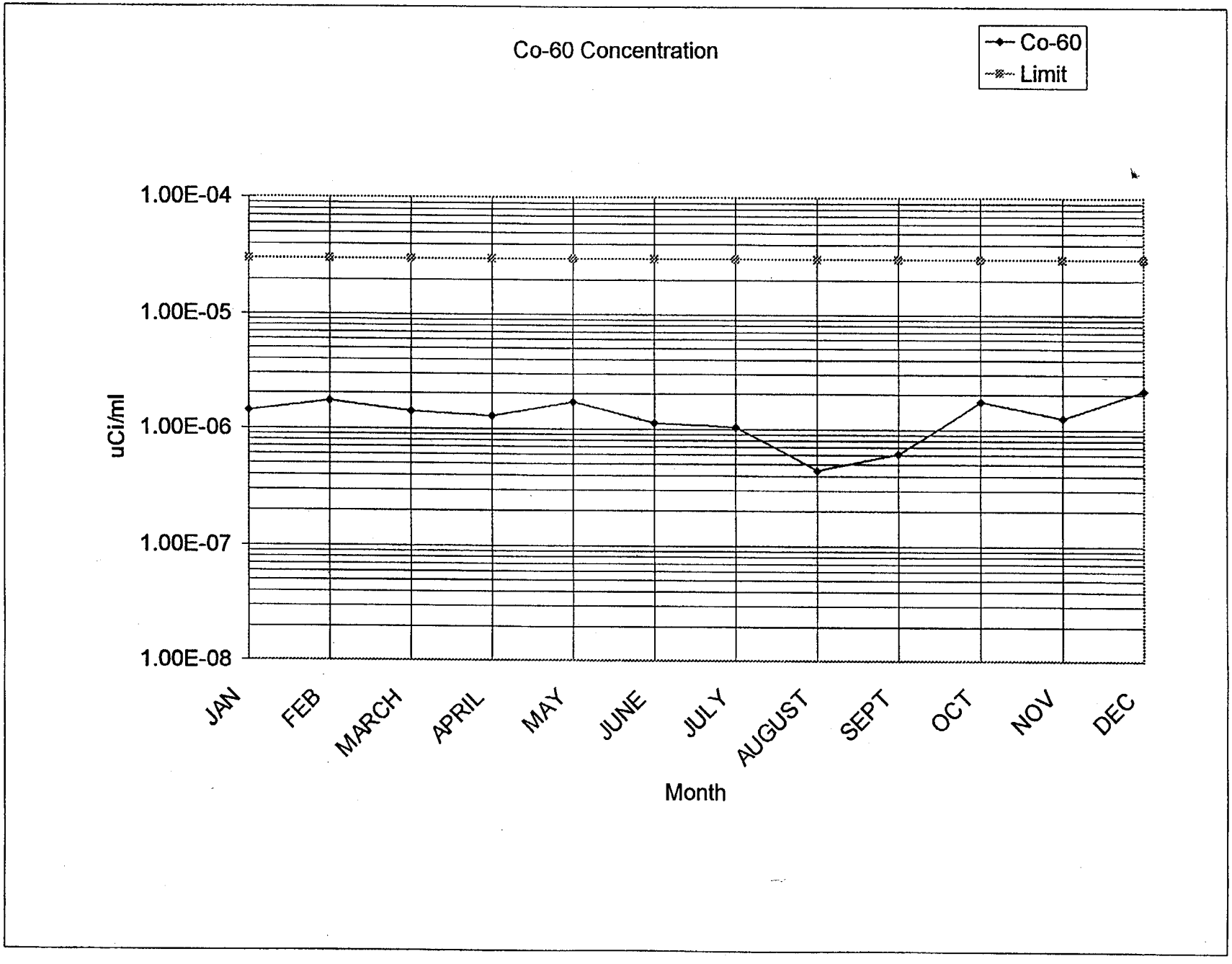

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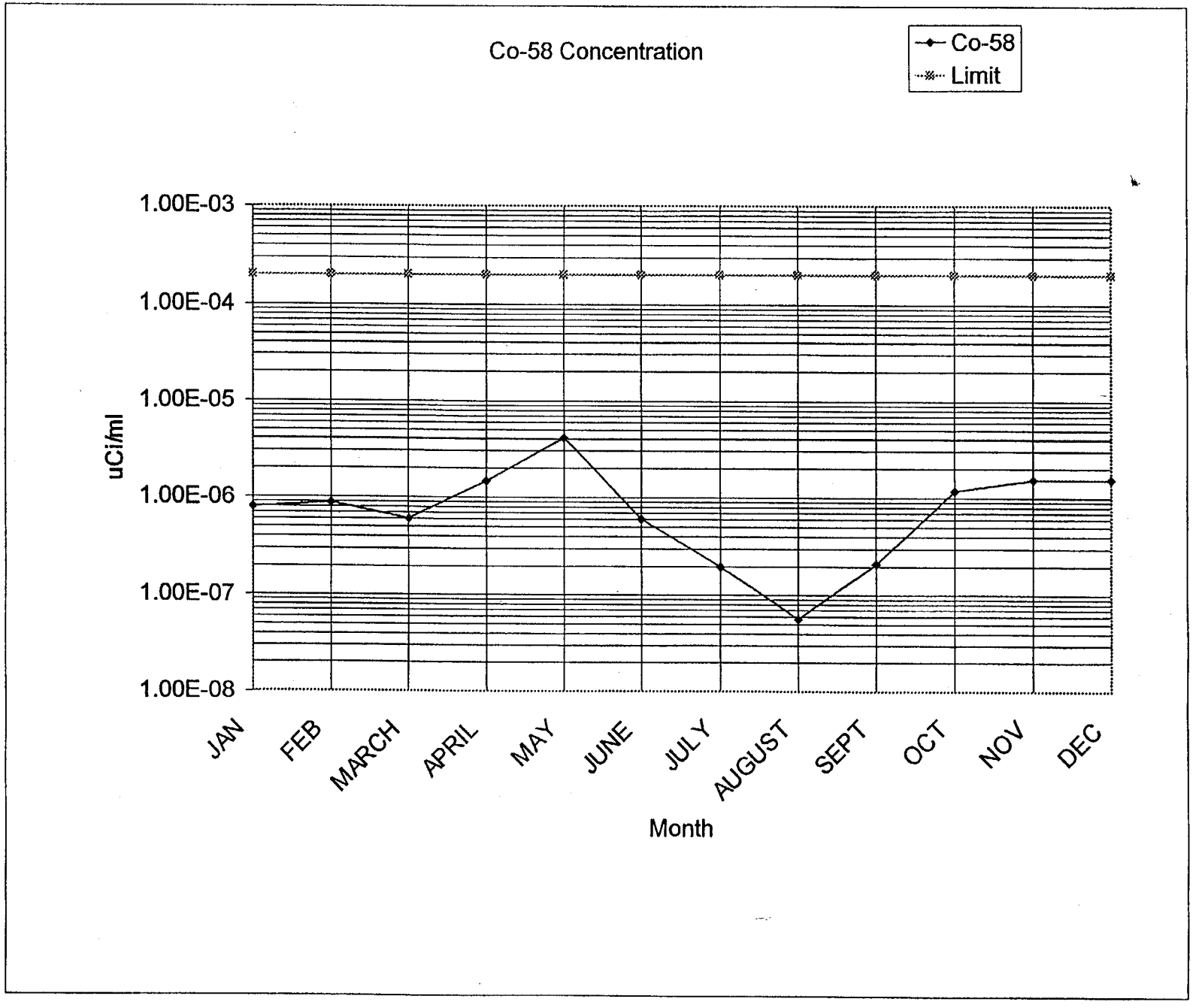
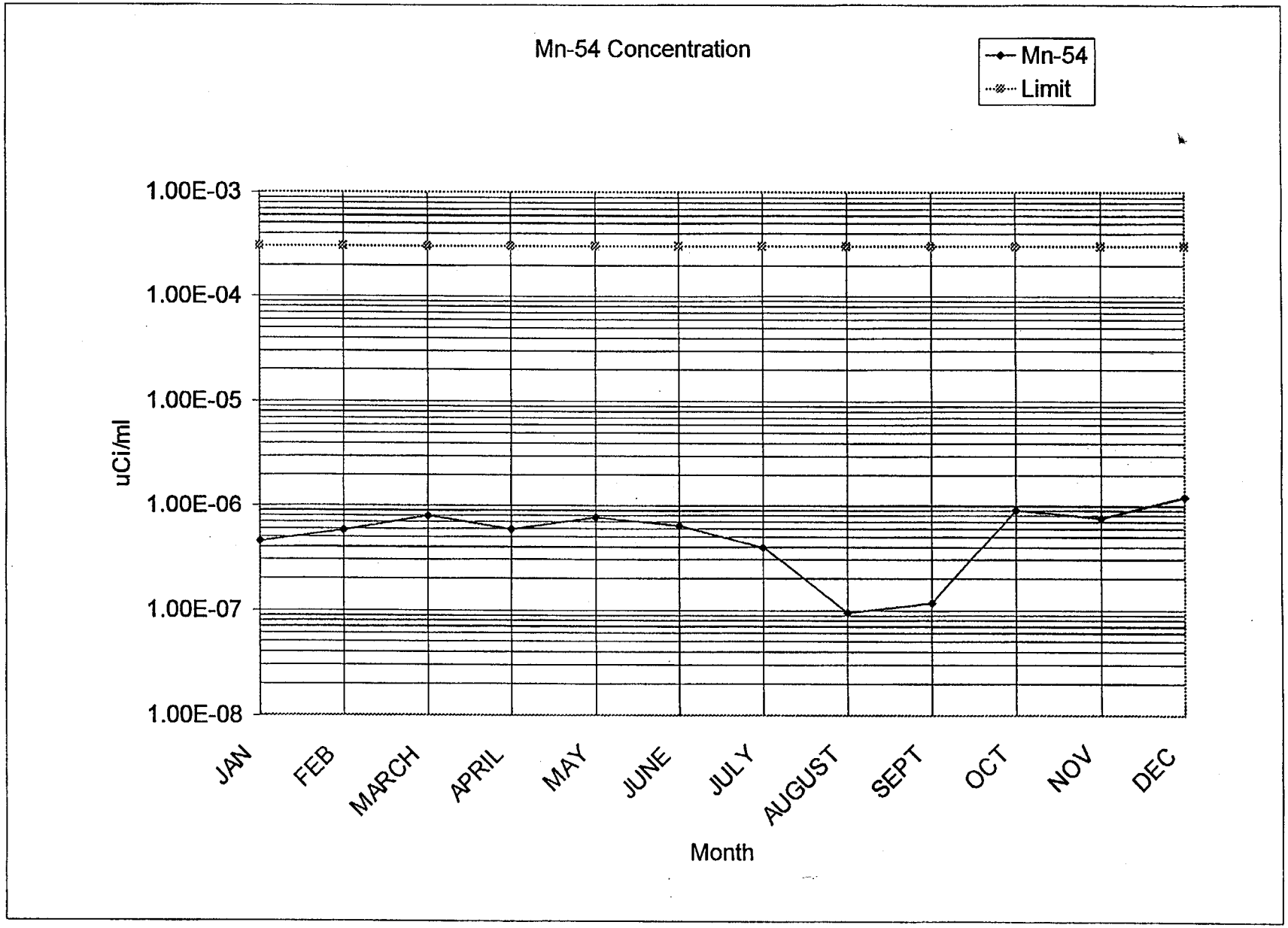
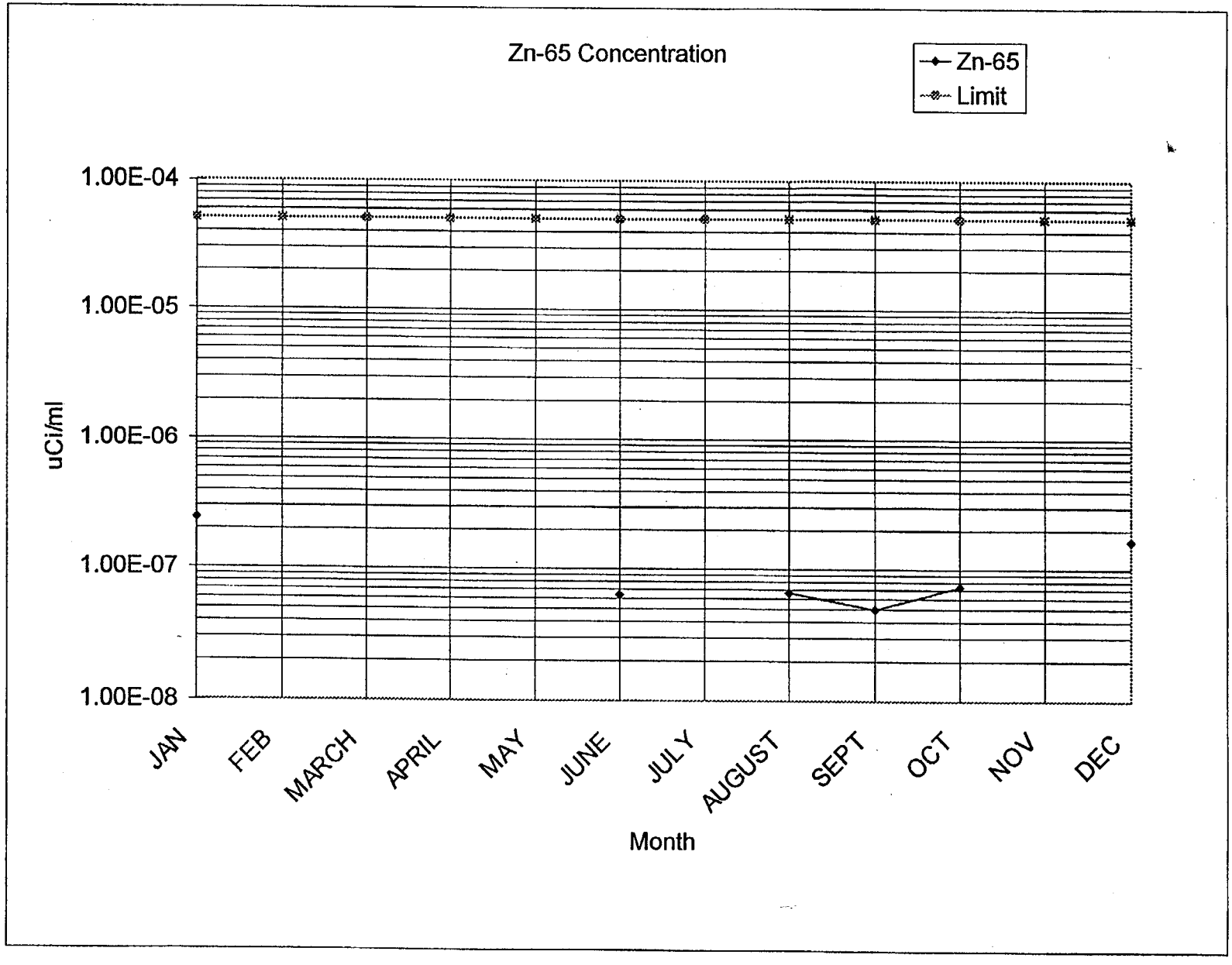



Mn-54 Concentration
Mn-54
Limit
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
uCi/ml
JAN
FEB
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPT
OCT
NOV
DEC
Month

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