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Enclosure (1) to Rockwell
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GENERAL LABORATORY

881 HILLSIDE

SURFACE SOIL SAMPLE REPORT

SAMPLES 881-11 THRU 881-19

ROCKWELL INTERNATIONAL
AEROSPACE OPERATIONS
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ADMIN RECORD

A-OU01-000901

881 Hillside Soil Analyses for Pu and U

Nineteen surface soil samples from the 881 Hillside were delivered to the General Laboratory on 8-1-88 and 8-4-88. The soil samples are listed under the laboratory control numbers E88-3019 and E88-3036. This letter reports the analysis of the second nine of nineteen samples submitted for analysis.

Plutonium and uranium were selectively separated from the dissolved soil sample using ion-exchange and solvent extraction techniques. The separated element was electroplated onto a stainless steel planchet and each isotope was counted by alpha spectroscopy.

A reagent blank and an NBS standard were analyzed with this batch of samples. Data for these analyses is included in this report.

The activity of each isotope is reported based on the dry weight of the soil sample and its uncertainty is reported at the two sigma level. The theoretical minimum detectable activity (MDA) was calculated for each measurement. If the observed result was less than the MDA, the MDA is also reported. The uncertainties, denoted as +/- in the data summary, was calculated by propagating errors associated with the analyses.

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E88-3019

Sample Number		881-11	881-12	881-13
Sample Date		7-28-88	7-28-88	7-28-88
Pu-239,240	(pCi/g)	2.6 +/- 0.3	0.40 +/- 0.06	0.16 +/- 0.06
U-233,234	(pCi/g)	1.0 +/- 0.3	0.93 +/- 0.26	0.94 +/- 0.26
U-235	(pCi/g)	0.04 +/- 0.02(MDA 0.07)	0.06 +/- 0.02	0.05 +/- 0.02
U-238	(pCi/g)	1.3 +/- 0.2	1.4 +/- 0.2	1.3 +/- 0.2

Sample Number		881-14	881-15
Sample Date		7-28-88	7-22-88
Pu-239,240	(pCi/g)	3.0 +/- 0.4	0.01 +/- 0.06(MDA 0.13)
U-233,234	(pCi/g)	1.1 +/- 0.3	2.0 +/- 0.3
U-235	(pCi/g)	0.03 +/- 0.02(MDA 0.05)	0.07 +/- 0.02
U-238	(pCi/g)	1.0 +/- 0.2	1.5 +/- 0.16

881 Hillside Soil Report
Quality Assurance/Quality Control Data

E88-3019

The following data provide quality assurance and quality control for the analyses of samples 881-11 thru 881-15.

Reagent Blanks

		1st analysis	2nd analysis
Pu-239,240	(pCi/g)	0.03	0.03
U-233,234	(pCi/g)	0.19	0.10
U-235	(pCi/g)	0.00	0.03
U-238	(pCi/g)	0.05	0.42

Controls		Observed	Standard
Pu-239,240	(pCi/g)	0.33 +/-0.06	0.22
U-233,234	(pCi/g)	1.1 +/-0.3	1.1
U-235	(pCi/g)	0.05 +/-0.02	**
U-238	(pCi/g)	1.1 +/-0.2	1.1

** National Bureau of Standards does not provide a certified value for U-235 activity in this standard.

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E88-3036

Sample Number		881-16		881-17	
Sample Date		8-4-88		8-4-88	
Pu-239,240	(pCi/g)	0.30 +/- 0.06	(MDA 0.31)	0.78 +/- 0.19	
U-233,234	(pCi/g)	(0.5 +/- 1.9)*10^2	(MDA 1.1*10^3)	19 +/- 74	(MDA 76)
U-235	(pCi/g)	0 +/- 13	(MDA 68)	9 +/- 6	(MDA 23)
U-238	(pCi/g)	(1.3 +/- 0.1)*10^3		(5.9 +/- 0.7)*10^2	

Sample Number		881-18		881-19	
Sample Date		8-4-88		8-4--88	
Pu-239,240	(pCi/g)	0.42 +/- 0.08		0.09 +/- 0.06	(MDA 0.15)
U-233,234	(pCi/g)	(0.6 +/- 2.3)*10^2	(MDA 1.6*10^3)	(0.1 +/- 7.4)*10^2	(MDA 2.7*10^2)
U-235	(pCi/g)	12 +/- 16	(MDA 1.0*10^2)	6 +/- 6	(MDA 18)
U-238	(pCi/g)	(3.0 +/- 0.3)*10^3		(5.5 +/- 0.6)*10^2	

881 Hillside Soil Report
Quality Assurance/Quality Control Data

E88-3036

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The following data provide quality assurance and quality control for the analyses of samples 881-16 thru 881-19.

Reagent Blanks

		1st analysis	2nd analysis
Pu-239,240	(pCi/g)	0.03	-
U-233,234	(pCi/g)	-0.02	0.13
U-235	(pCi/g)	0.00	0.08
U-238	(pCi/g)	-0.03	0.81

Controls		Observed	Standard
Pu-239,240	(pCi/g)	0.31 +/-0.06	0.22
U-233,234	(pCi/g)	0.91 +/-0.3	1.1
U-235	(pCi/g)	0.06 +/-0.02	**
U-238	(pCi/g)	1.2 +/-0.2	1.1

** National Bureau of Standards does not provide a certified value for U-235 activity in this standard.