TELEPHONE CONVERSATION RECORD

PERSON CALLED:

James R. Persoon, Ph.D.

Radiation Safety Officer (RSO)
Alliant Techsystems Inc. (ATK)

TELEPHONE:

(651) 639-3331

PAGER:

In many wife

(612) 740-2433

E-MAIL:

CALLER:

George M. McCann

Senior Radiation Specialist

NRC, Region III (RIII), Decommissioning Branch

(DB)

TELEPHONE:

(630) 829-9856

E-MAIL:

gmm@nrc.gov

DATE OF CALL:

December 20, 2002

Subject:

DB REVIEW OF ATK'S SOIL SAMPLE RESULTS

Reference(S):

1. ATK letter dated December 18, 2002 (initial

submittal (facsimile))

2. Atk letter dated December 18, 2002 (revised

sample results (facsimile))

On the above date, the licensee's RSO was contacted to discuss the above referenced letters, and ATK's intent to back-fill excavations where its former depleted uranium (DU) processing building (Building 502), and some adjoining areas were located. Building 502, and adjoining areas had been demolished or remediated, as part of, the ATK's NRC approved decommissioning plan (DP). The licensee indicated that they were anxious to back-fill these areas, as soon as, possible due to weather and safety concerns. ATK is trying to complete its decommissioning by February 2003, and submit its final status surveys (FSS) shortly thereafter. ATK's license limits its decommissioning to an end date of May 31, 2003.

During telephone conversations on December 18, and 19, 2002, with Mr. Mike Renheck (one of ATK's radiological consultant personnel (SEC)) and ATK's RSO, they were informed that DB staff review had identified issues which needed to be clarified as follows:

- 1. The initial letter provided sampling results for the excavated areas. However, two issues required resolution as follows:
 - A. The sample results provided by the licensee's contractor were in microgram (total uranium (U)) per gram (μg/g). The NRC release criteria is specified in Pico curies (²³⁸U) per gram (pCi/g). The approved release criteria is 35 pCi/g. The licensee was requested to resubmit the data in the appropriate units, with the calculations and conversion factors used.
 - B. The licensee was requested to submit a revised site diagram which identified the excavated areas, and locations of the collected soil samples.
- 2. The second letter faxed to RIII provided some of the requested information. However, questions were also raised after DB review. The issues discussed are as follows:
 - A. The data had been converted from $\mu g/g$ to pCi/g as requested. Also, a conversion factor of 0.486 (i.e., $\mu g/g$ * 0.486=pCi/g) was also provided. Issues with the data was transmitted to the licensee's consultant and RSO on December 20, 2002, as follows:
 - i. The revised "TCAAP D&D Project, Soil Sample Summary Log," for the "TSS=single samples" appeared to be mathematically incorrect. The Log for the "TSC=composite samples" appeared to be mathematically correct. During a telephone conversation on December 20, 2002, the ATK consultant was requested to submit a corrected TSS soil sample Log.
 - ii. The complete calculations used in developing the conversion factor was not provided. Independent NRC staff assessment identified a conversion factor of 0.337. Since the licensee's conversion factor is more conservative, and the results of the samples are on the average less than 1% of the NRC unrestricted release criteria, it DB staff view that back-filling the excavations does not appear to be an issue. A commitment to fax revised data was made on December 20, 2002, during discussions with the RSO and its consultant.

During the above discussions, DB staff informed the licensee's RSO that the review of this data is not considered an approval for unrestricted release. Further, that additional evaluation of the excavated areas may be necessary after the NRC receives results of confirmatory soil samples collected during the initial phase of the RIII December 10-13, 2002, inspection, or if the licensee's sampling data should raise new issues.

The licensee's RSO acknowledge this issue, and indicated that they were willing to accept the risk of having to re-excavate or re-assess the filled excavated areas at a later date if necessary. Based on the sampling data, NRC direct survey results, and the licensee's understanding of risk, the licensee's RSO was informed that RIII does not object to the back-fill of the excavated areas.

No further.

George M. McCann, Senior Radiation Specialist Decommissioning Branch NRC ATK Project Manager.

Tel (651) 639-3331
Twin Cities Army Ammunition Plant
MN30-2530, Building 502
Arden Hills, MN 55112

Subject: Twin City Army Ammunition Plant DU Room Excavation Soil Sample Results

18 December 2002

Mr. Michael McCann Mr. Michael LaFranzo U. S. Nuclear Regulatory Commission, Region III 801 Warrenville Road Lisle, IL 60532-4351

Dear Mr. McCann & Mr. LaFranzo:

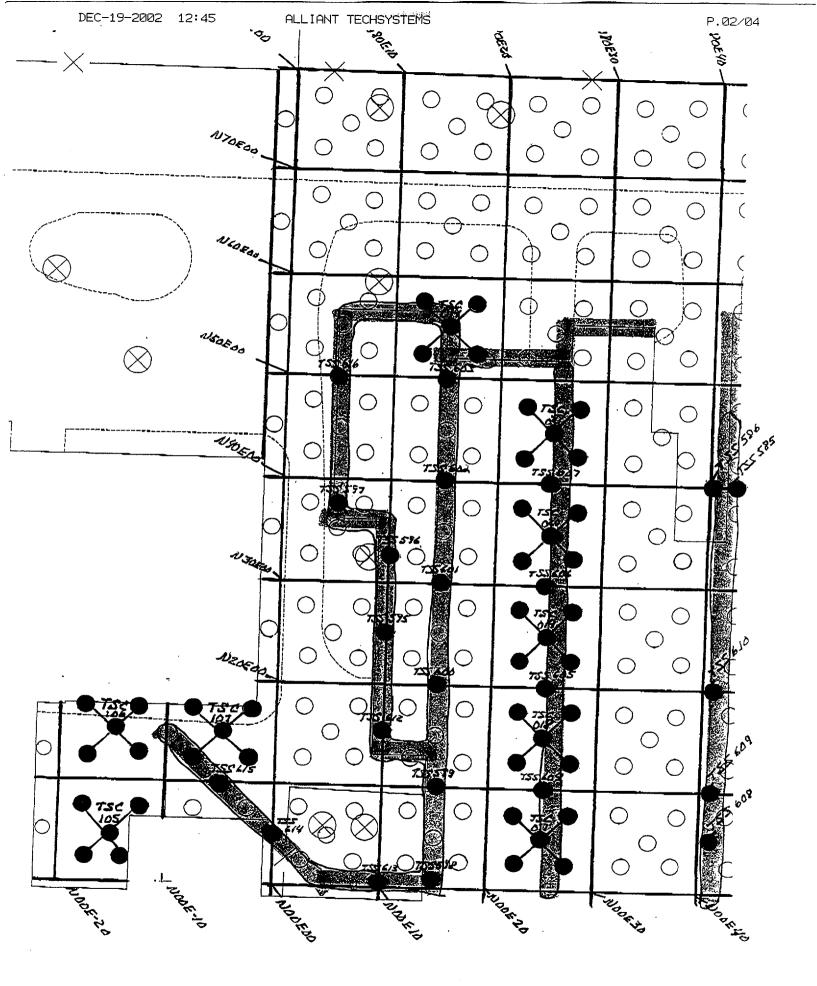
Enclosed is the radiological sampling and analysis results for the some of the excavations for the TCAAP DU Room. This data covers the excavations from grid N00E-20 through grid N80E40. A map showing the grid locations and the sample locations is included along with a summary of the results of the sampling and the actual analytical results of the samples. SEC would like to proceed with backfilling of these grids no later than Monday, December 23, 2003. Therefore, a timely review of the data and your concurrence that the excavations meet the requirements necessary for backfilling is requested. Please contact me if you have any questions.

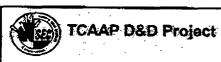
Sincerely,

James R. Persoon Ph.D.

Radiation Safety Officer and Program Director

Alliant Techsystems Inc.





Soil Sample Summary Log

Samole#	e Olver		Db.,
TSS-585	0.022	0.0953	0.486
TSS-586	0.021	0.0923	0.486
TSS-595	0.009	0.0656	0.486
TSS-596	0.008	0.0875	0.486
TSS-597	0.012	0.0802	0.486
TSS-598	0.008	0.0671	0.486
TSS-599	0.014	0.0899	0.486
TSS-600	0.012	0.0933	0.486
TSS-601	0.011	0.0880	0.486
TSS-602	0.013	0.0889	0.486
TSS-603	0.025	0.0695	0.486
TSS-604	0.006	0.0705	0.486
TSS-605	0.025	0.0943	0.486
TSS-606	0.012	0.0943	0.486
TSS-607	0.026	0.0933	0.486
TSS-608	0.006	0.0787	0.486
TSS-609	0.007	0.0855	0.486
TSS-610	0.043	0.0923	0.486
TSS-612	0.008	0.0899	0.486
TSS-613	0.007	0.0953	0.486
TSS-614	0.011	0.0914	0.486
TSS-615	0.008	0.0773	0.486
TSS-616	0.009	0.0933	0.486

-1,54 pd

Mg/g x 0.486=pci/g

TCAAP D&D Project Soil Sample Summary Log				
Sample #=	POGUE:	F		οK
TSC-014	0.564	0.0081	0.084	~ · · ·
TSC-017	0.515	0.0099	0.076	:
TSC-018	0.583	0.0084	0.088	ı
TSC-019	0.928	0.0127	0.082	
TSC-020	1.162	0.0172	0.094	
TSC-021	2.012	0.0283	0.088	
TSC-105	0.435	0.0073	0.080	
TSC-106	0.459	0.0087	0.086	
TSC-107	0.977	0.0153	0.084	

ug/g x 0.486=pCi/g

NO.812

002

12/20/2002

15:53



Tel (651) 639-3331
Twin Cities Army Ammunition Plant
MN30-2530, Building 502
Arden Hills, MN 55112

Subject: Twin City Army Ammunition Plant DU Room Excavation Soil Sample Results

18 December 2002

Mr. Michael McCann Mr. Michael LaFranzo U. S. Nuclear Regulatory Commission, Region III 801 Warrenville Road Lisle, IL 60532-4351

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Sincerely,

James R. Persoon Ph.D.

Radiation Safety Officer and Program Director

Alliant Techsystems Inc.

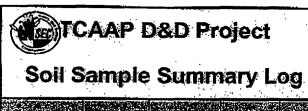
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1 THE ACT (5)		&D Pro nple Lo	,	
. Similar	areig/giv		N DL	RE
TSC-014	1.160	0.0166	0.172	1.00
TSC-017	1.060	0.0203	0.157	1.00
T\$C-018	1.200	0.0173	0.181	1.00
TSC-019	1.910	0.0262	0.168	1.00
TSC-020	2.390	0.0353	0.194	1.00
TSC-021	4.140	0.0582	0.181	1.00
TSC-105	0.896	0.0150	0.165	1.00
TSC-106	0.945	0.0180	0.176	1.00
TSC-107	2.010	0.0315	0.173	1.00

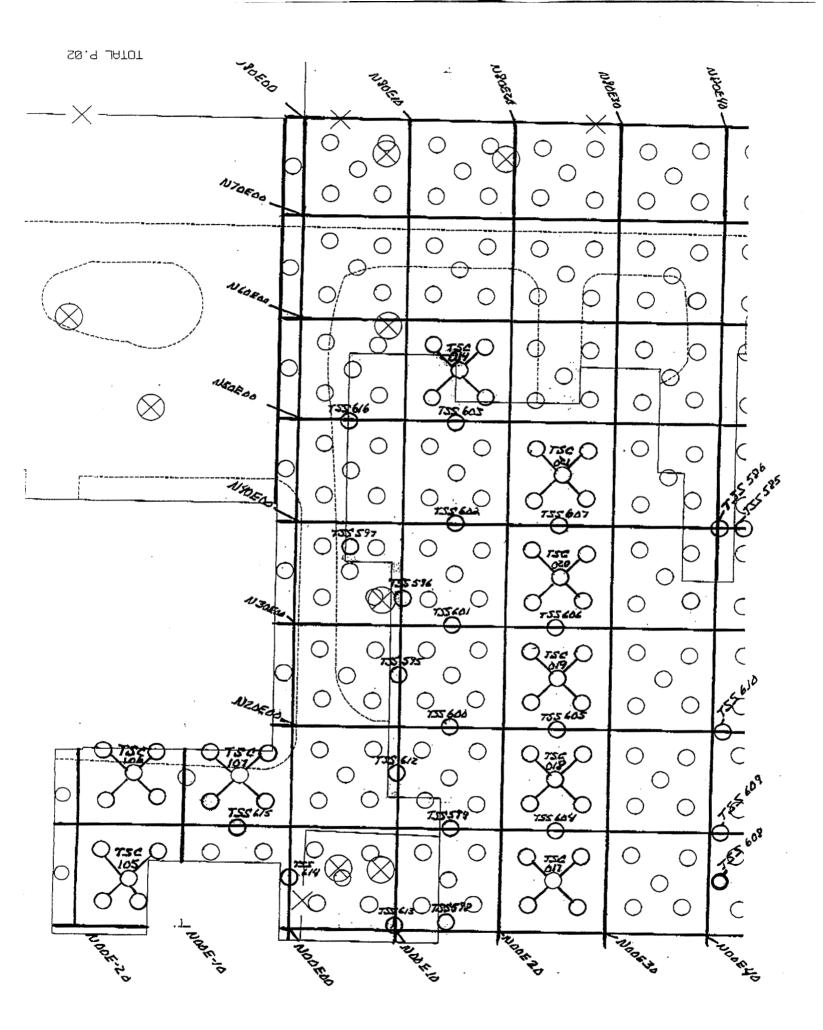
TSC= Composite Sample

0,2/



Samote			: LU	
TSS-585	2.990	0.0445	0.196	1.00
TSS-586	2.940	0.0442	0.190	1.00
TSS-595	0.994	0.0176	0.135	1.00
TSS-596	1.090	0.0168	0.180	1.00
TSS-597	1.690	0.0238	0.165	1.00
TSS-598	0.916	0.0159	0.138	1.00
TSS-599	2.070	0.0293	0.185	1.00
TSS-600	1.720	0.0256	0.192	1,00
T\$\$-601	1.490	0.0226	0.181	1.00
TSS-602	1.770	0.0276	0.183	1.00
TSS-603	3.710	0.0515	0.143	1.00
TSS-604	0.732	0.0117	0.145	1.00
TSS-605	3.640	0.0516	0.194	1.00
TSS-606	1.630	0.0239	0.194	1.00
TSS-607	3.820	0.0531	0.192	1.00
TSS-608	0.724	0.0118	0.162	1.00
TSS-609	0.874	0.0151	0.176	1.00
TSS-610	6.240	0.0884	0.190	1.00
TSS-612	1.000	0.0163	0.185	1.00
TSS-613	0.978	0.0144	0.196	1.00
TSS-614	1.480	0.0218	0.188	1.00
TSS-615	0.823	0.0160	0.159	1.00
TSS-616	1.100	0.0192	0.192	1.00

TSS=Single Sample.



Company:

Address:

SEC TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact;

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

SECT00101

SECT001

Report Date: December 16, 2002

Page 1 of 2

Client Sample ID:

Sample ID:

Matrix:

Collect Date:

Receive Date:

TSC-014

71786021 Soil

23-NOV-02 12:00

09-DEC-02

Collector: <u>Client</u> Qualifier Result DLRL Units Time Batch Method AnalystDate

Parameter Rad Total U

KPA, Total U. Solid

Total Uranium

1.16 +/-0.0166 0.172

1.00

ug/g

Proicct:

Client ID:

12/13/02 1300 220490

The following Prop Mathada were perfor

Method	Description	Analyst	Date	Time	Prep Batch	
Ash Soil Prep	Ash Soil Prep RAD A-021, A-021B, A-026	TCD	12/10/02	1323	220443	
Dry Soil Prep	Dry Soil Prop RAD A-021, A-021B, A-026	AWB	12/09/02	1701	220360	

The fellowing Application Markada was --------

Inc Ionowing A	matytical Methods were perior	ineg.
Method	Description	Analyst Comments
I	ASTM D 5174	

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- В Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Ε Concentration exceeds instrument calibration range
- Н Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit,
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- Х Lab-specific qualifier - must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Company: SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Client Sample ID:

Sample ID:

TSC-014

71786021

resport Date

Report Date: December 16, 2002

D.

e 2 of 2

Project: Client ID: SECT00101 SECT001

Parameter

Qualifier

Result

DL

RL

Units

F AnalystDate

Time Batch Method

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Sarah Kozlik.

Company:

SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

SECT00101

AnalystDate

SECT001

Report Date: December 11, 2002

Page

of 2

Time Batch Method

Client Sample ID:

Sample ID:

Collector: Qualifier

Matrix: Collect Date:

Receive Date:

TSC-017

71539036 Soil

23-NOV-02 12:00

04-DEC-02

Parameter

Rad Total U

KPA, Total U, Solid Total Uranium

1.06 +/-0.0203

Result

0.157

1.00

RL

ug/g

Units

Proiect: Client 1D:

CAF1 12/10/02 1254 219818 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	AWB	12/06/02	0955	219666
Dry Soil Prop	Dry Soil Prep RAD A-021,A-021B,A-026	TCD	12/05/02	1145	219577

The following Analytical Methods were performed

THE TOTAL	TOTAL TOTAL TOTAL POLICE	
Method	Description	Analyst Comments
1	ASTM D 5174	

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- Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit II
- Uncertain identification for gamma spectroscopy. UI
- Lab-specific qualifier must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Company:

SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 11, 2002

2

of 2

Client Sample ID:

TSC-017

Project: Client ID: SECT00101 SECT001

Parameter

Qualifier

Sample ID:

Result

71539036 \mathbf{DL}

RL

Units

AnalystDate

Time Batch Method

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Sarah Kozlik.

Company:

TCAAP Building 502 Address:

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Client Sample ID:

Sample ID: Matrix:

Collect Date: Receive Date: **TSC-018**

71539037 Soil

23-NOV-02 12:00 04-DEC-02

Collector: Parameter **Qualifier** Result RLDL Units DF AnalystDate Time Batch Method

Rad Total U

KPA, Total U, Solid

Total Uranium

1,20 +/-0.0173

0.181

1.00

ug/g

Project:

Client ID:

CAF1 12/10/02 1129 219818 1

Report Date: December 11, 2002

SECT00101

SECT001

Page 1 of 1

The following Prop Mathade were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	AWB	12/06/02	0955	219666
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	TCD	12/05/02	1145	219577

The following Anglytical Methods were performed

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Method	Description	Analyst Comments
1	ASTM D 5174	W. (444)

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- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

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Company:

SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112-5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 11, 2002

1 of

Client Sample ID:

TSC-019

Project:

SECT00101

Sample ID:

Matrix:

71539038

Client ID:

SECT001

Collect Date:

Qualifier

Soil

23-NOV-02 12:00

DL

Receive Date:

04-DEC-02

Collector:

Units AnalystDate Time Batch Method DF

Parameter Rad Total U

KPA. Total U. Solid

Total Uranium

1.91 +/-0.0262

Result

0.168

1.00

RL

ug/g

CAFI 12/10/02 1133 219818 1

The following Preo Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	AWB	12/06/02	0955	219666
Dry Soil Prep	Dry Soil Prep RAD A-021, A-021B, A-026	TCD	12/05/02	1145	219577

the following Analyu	ical Methods were peri	
Method	Description	Analyst Comments
1	ASTM D 5174	

Notes:

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- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit IJ
- UI Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package Х
- Y QC Samples were not spiked with this compound.

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Сотрапу:

SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 11, 2002

I of I

Client Sample ID:

T\$C-020 71539039 Project:

SECT00101

Sample ID: Matrix:

Client ID:

SECT001

Collect Date: Receive Date: Soil

23-NOV-02 12:00

Collector:

04-DEC-02

		· · · · · · · · · · · · · · · · · · ·							
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time Batch N	viethod

Rad Total U

KPA, Total U. Solid

Total Uranium

2.39 +/-0.0353

0.194

1.00

ug/g

CAF1 12/10/02 1134 219818 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021, A-021B, A-026	AWB	12/06/02	0955	219666
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	TCD	12/05/02	1145	219577

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ASTM D 5174	· · · · · · · · · · · · · · · · · · ·

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- Holding time exceeded Н
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Reviewed by		

Company; SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 11, 2002

1 of 1

Time Batch Method

Client Sample ID:

Sample ID:

Matrix:

Onalifier

Resnit

TSC-021 71539041

Soil

Project: Client ID:

DF

SECT00101 SECTOOL

AnalystDate

Collect Date: Receive Date: Collector:

23-NOV-02 12:00 04-DEC-02

DL

Client

Parameter Rad Total U

KPA, Total U. Solid

Total Uranium

4/-0.0582 4.14

0.181

00.1

RL

ug/g

Units

CAF1 12/10/02 1148 219818 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	AWB	12/06/02	0955	219666
Dry Soil Prep	Dry Soil Prep RAD A-021, A-021B, A-026	TCD	12/05/02	1145	219577

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ASTM D 5174	**************************************

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Company:

Address: TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project;

Routine Analytical(ATK-TCAAP)

Client Sample ID:

Sample ID: Matrix:

Collect Date:

Receive Date: Collector:

TSC-105

71786025 Soil

23-NOV-02 12:00 09-DEC-02

Project: Client ID:

SECT00101 SECT001

Page 1 of 1

Report Date: December 16, 2002

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time Batch Method	
Dod Total II									

Rad Total U

KPA, Total U. Solid

Total Uranium

0.896 +/-0.015

0.165

1.00

ug/g

BFI 12/13/02 1135 220490 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1701	220360

The following Anglytical Mathods were newformed

THE ROLLOWING A	maryacar Michigas were perior	net.
Method	Description	Analyst Comments
1	1 CT1 (D C124	
1	ASTM D 5174	

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank,
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range
- Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound,

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure, Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Sarah Kozlik.

Reviewed by		

Company: SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112-5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Client Sample ID:

Sample ID: Matrix:

Collector: Qualifier

Collect Date: Receive Date: TSC-106

71786026 Soil

25-NOV-02 12:00 09-DEC-02

Proicct: Client ID:

DF

SECT00101 SECT001

AnalystDate

Report Date: December 16, 2002

Page 1 of 1

Time Batch Method

P	arame	ter
Rad	Total	U

KPA, Total U, Solid

Total Uranium

0.945

Result

+/-0.018

0.176

DL

ug/g

Units

RL

1.00

12/13/02 1141 220490

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1701	220360

The following Analytical Methods were performed

Analyst Comments Description Method **ASTM D 5174**

The Qualiflers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported >
- Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range E
- Н Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- p The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy. UI
- Lab-specific qualifier must be fully described in case narrative and data summary package
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Company:

SEC

Address:

TCAAP Building 502

Client Sample ID:

Arden Hills, Minnesota 55112-5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Sample ID:

Matrix:

Collect Date:

Receive Date: Collector:

Qualifier

TSC-107

71786027 Soil

04-DEC-02 12:00 09-DEC-02

DL

Client

Parameter Rad Total U

KPA, Total U, Solid Total Uranium

2.01 +/-0.0315

Result

0.173

1.00

RL

ug/g

Units

Project:

Client ID:

DF

12/13/02 1143 220490 1

Report Date: December 16, 2002

SECT00101

AnalystDate

SECT001

of 1

Time Batch Method

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prop RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021, A-021B, A-026	AWB	12/09/02	1701	220360

The following Analyti	est Mendons were ber	(OTTAGEA
Method	Description	Analyst Comments
1	ASTM D 5174	

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
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- Concentration exceeds instrument calibration range
- Holding time exceeded
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- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy.
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Company:

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 11, 2002

Page

1 of 1

Client Sample ID:

Sample ID:

TSS-585 71539055

Project: Client ID: SECT00101 SECT001

Matrix: Collect Date:

Qualifier

Soil

21-NOV-02 12:00

DL

04-DEC-02

Receive Date: Collector:

Result

RI. Units Time Batch Method DE AnalystDate

Parameter Rad Total U

KPA, Total U. Solid

Total Uranium

2.99 +/-0.0445 0.196

1.00

ug/g

CAFI 12/10/02 1039 219819

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021, A-021B, A-026	AWB	12/06/02	0955	219666
Dry Soil Prep	Dry Soil Prep RAD A-021, A-021B, A-026	TCD	12/05/02	1145	219577

The following Analytical Methods were performed

THE YOU WILL	Analytical Mellions were personne	4
Method	Description	Analyst Comments
ī	ASTM D 5174	

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- > Actual result is greater than amount reported
- В Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- Х Lab-specific qualifier - must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

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Company: SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 11, 2002

Page

of

Time Batch Method

Client Sample ID:

TSS-586

Project:

SECT00101

AnalystDate

Sample ID: Matrix:

71539056

Client ID:

SECT001

DF

Collect Date: Receive Date:

Qualifier

Soil

21-NOV-02 12:00

DL

Collector:

Result

04-DEC-02 Client

Parameter Rad Total U

KPA, Total U, Solid

Total Uranium

+/-0.0442

0.190

1.00

RL

ug/g

Units

CAFI 12/10/02 1041 219819

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	AWB	12/06/02	0955	219666
Dry Soil Prep	Dry Soil Prop RAD A-021, A-021B, A-026	TCD	12/05/02	1145	219577

I ne following A	analytical Methods were perform	ed
Method	Description	Analyst Comments
1	A\$TM D 5174	

Notes:

The Qualifiers in this report are defined as follows:

- < Actual result is less than amount reported
- Actual result is greater than amount reported
- В Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Ē Concentration exceeds instrument calibration range
- Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- Х Lab-specific qualifier - must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

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Company: SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112-5792

Contact:

Project:

Routine Analytical(ATK-TCAAP)

Project: Client ID:

Client Sample ID:

Sample ID:

TSS-595 71786033

Soil

Collect Date: Receive Date: Callector

Matrix:

01-DEC-02 12:00

09-DEC-02

	Concetor.		Cilent						
Parameter	Qualifier	Result	\mathbf{DL}	RL ·	Units	DF	AnalystDate	Time	Batch Method

Rad Total U

KPA, Total U, Solid

Total Uranium

0.994 +/-0.0176 0 135

1.00

ug/g

BF1 12/13/02 1237 220490 1

Report Date: December 16, 2002

SECT00101

SECT001

Page I of 1

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021, A-021B, A-026	AWB	12/09/02	1701	220360

THE IOHOWIN	a waranten menone were bertorin	20
Method	Description	Analyst Comments
1	ASTM D 5174	

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank. В
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range
- Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit. ĭ
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Company: SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

Page

1 of 1

Time Batch Method

Client Sample ID:

T\$\$-596

Project:

SECT00101

AnalystDate

Sample ID:

Collector:

Matrix:

71786034 Soil

Client JD:

SECT001

Collect Date: Receive Date: 01-DEC-02 12:00

09-DEC-02 Čĺjent

Parameter

KPA, Total U, Solid Total Uranium

Qualifier Rad Total U

Result

1.09

+/-0.0168

081.0

DL

RL

1.00

ug/g

Units

12/13/02 1241 220490

The fellowing Duan Mathada

THE TOHOWING FIE	Michigas were beriotnied				
Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1701	220360

The following Applytical Methods were exclormed

Method	Description	Analyst Comments
3	ASTM D 5174	

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range
- Н Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit. I
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package Х
- Y QC Samples were not spiked with this compound.

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Company:

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

Page 1 of 1

Client Sample ID:

TSS-597

Project:

SECT00101

Sample ID:

Collector:

Matrix:

71786035

Client ID:

SECT001

Collect Date: Receive Date:

Qualifier

Soil

Result

01-DEC-02 12:00 09-DEC-02

lient DLRL Units AnalystDate Time Batch Method

Parameter Rad Total U

KPA, Total U, Solid

Total Uranium

1.69 +/-0.0238 0.165

1.00

ug/g

12/13/02 1248 220490 BFI

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021, A-021B, A-026	AWB	12/09/02	1701	220360

THE TOHOWING A	naiyucai memous were periormed	
Method	Description	Analyst Comments
1	ASTM D 5174	

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank. В
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range
- Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uì Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

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Company;

SEC

Address;

TCAAP Building 502

Arden Hills, Minnesota 55112-5792

Contact;

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

l of l

Time Batch Method

Client Sample ID:

TSS-598

Project:

SECT00101

Page

Sample ID:

Matrix: Collect Date: 71786060 Soil

Client ID:

DF

SECT001

AnalystDate

Receive Date: Collector:

Qualifier

04-DEC-02 12:00 09-DEC-02

ď,

Client

Parameter Rad Total U

KPA, Total U, Solid Total Uranium

0.916 +/-0.0159

Result

0.138

1.00

RL

ug/g

Units

BF1 12/15/02 1947 220493

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1702	220360

The following Analytical Methods were performed

Method Analyst Comments Description ASTM D 5174

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- Н Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- П Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

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Company: SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112-5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

SECT00101

SECT001

Report Date: December 16, 2002

of 1

Client Sample ID:

Sample ID: Matrix:

TSS-599 71786036

Soil

Collect Date: Receive Date:

26-NOV-02 12:00

09-DEC-02

	Collector:		Client							
Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time		Method
20 1 20 1 1 XI									025111	

Rad Total U

KPA, Total U. Solid

Total Uranium

2.07 +/-0.0293

0.185

1.00

ug/g

Project:

Client ID:

BF1 12/13/02 1616 220492 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1701	220360

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ASTM D 5174	

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range Ε
- Holding time exceeded Н
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit IJ
- Uncertain identification for gamma spectroscopy. UI
- Lab-specific qualifier must be fully described in case narrative and data summary package Х
- QC Samples were not spiked with this compound.

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Company:

SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Report Date: December 16, 2002

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

of (

Client Sample ID:

TSS-600

Project:

SECT00101

Sample ID:

71786037 Soil

Client ID:

SECT001

Matrix: Collect Date:

Result

26-NOV-02 12:00

Receive Date: Collector:

Qualifier

09-DEC-02

AnalystDate Time Batch Method Units DF RL. DL

Parameter Rad Total U

KPA, Total U. Solid

Total Uranium

1.72 +/-0.0256 0.192

1.00

ug/g

12/13/02 1416 220492

The following Prep Methods were performed

Method	Description	Analyst	Date	Lime	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021, A-021B, A-026	AWB	12/09/02	1701	220360

The following A	nalytical Methods were perform	ed
Method	Description	Analyst Comments
1	ASTM D 5174	

Notes:

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- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank. В
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range Ε
- Holding time exceeded
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Company: SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

KPA, Total U, Solid

Total Uranium

Routine Analytical(ATK-TCAAP)

AnalystDate

Report Date: December 16, 2002

Client Sample ID:

TSS-601

Page 1 of 1

Time Batch Method

Sample ID:

71786038

Project:

SECT00101 SECT001 Client ID:

Matrix: Collect Date: Soil

26-NOV-02 12:00

Receive Date: Collector:

Client

09-DEC-02

Parameter Qualifier Result DL Rad Total U

> 1.49 +/-0.0226

0.181

RL

1.00

ug/g

Units

12/13/02 1420 220492 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1701	220360

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ASTM D 5174	

Notes:

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- Analyte found in the sample as well as the associated blank.
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- Concentration exceeds instrument calibration range
- Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package
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Company:

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

Page 1 of I

Client Sample ID:

TSS-602

Proiect:

SECT00101

AnalystDate

Sample ID:

71786039

Client ID:

DF

SECT001

Matrix: Collect Date:

Oualifier

Soil

26-NOV-02 12:00

Receive Date: 09-DEC-02 Collector: Client

Result

Parameter Rad Total U

KPA, Total U. Solid

Total Uranium

+/-0.0276

0.183

DL

1.00

RL

ug/g

Units

12/13/02 1425 220492 1

Time Batch Method

The following Prop Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1701	220360

The following Analytical Methods were performed

Method	Description	Analyst Comments
ì	ASTM D 5174	A

Notes:

The Qualifiers in this report are defined as follows:

- < Actual result is less than amount reported
- Actual result is greater than amount reported
- В Analyte found in the sample as well as the associated blank.
- Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range
- Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy. UI
- Lab-specific qualifier must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure. Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Cortificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Sarah Kozlik.

Company:

SEC

Address: TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

SECT00101

SECT001

Report Date: December 16, 2002

Page

of 2

Client Sample ID:

Sample 1D:

Matrix:

Collect Date: Receive Date: TSS-615

71786051 Soil

04-DEC-02 12:00

09-DEC-02

Collector: Client, Parameter Oualifier Result DLRL Units AnalystDate Time Batch Method

Rad Total U

KPA, Total U. Solid

Total Uranium

0.823

+/-0.016

0.159

1.00

ug/g

Proiect:

Client ID:

12/15/02 1917 220493

The following Prep Methods were performed Method Description Time Analyst Date Prep Batch Ash Soil Prep Ash Soil Prep RAD A-021, A-021B, A-026 TCD 12/10/02 1323 220443 Dry Soil Prep Dry Soil Prep RAD A-021, A-021B, A-026 AWB 12/09/02 1702 220360

The following Analytical Methods were performed

Method Analyst Comments Description **ASTM D 5174**

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- Х Lab-specific qualifier - must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

Company:

SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

Client Sample ID:

TSS-615

Proicct:

Page 2 of 2

Sample ID:

71786051

Client ID:

SECT00101 SECT001

Parameter

Oualifier

Result

 \mathbf{DL}

RL

Units

DF AnalystDate Time Batch Method

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Company ;

SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112-5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

Page

of 1

Client Sample ID:

TSS-616 71786052 Project:

SECT00101

Sample ID:

Result

Client ID:

SECT001

Matrix: Collect Date: Soil

04-DEC-02 12:00

Receive Date: Collector:

Qualifier

09-DEC-02

Client DL RL Units DF AnalystDate Time Batch Method

Parameter Rad Total U

KPA, Total U. Solid

Total Uranium

+/-0.0192 1.10

0.192

1.00

ug/g

BF1 12/15/02 1919 220493

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch	
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443	
Dry Soil Prep	Dry Soil Prep RAD A-021, A-021B, A-026	AWB	12/09/02	1702	220360	

I ue following W	nalytical Methods were perior	med
Method	Description	Analyst Comments
1	ASTM D 5174	

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank.
- BDFlag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range E
- Holding time exceeded Н
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure. Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Company:

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112-5792

Contact:

Todd Willis

Projcct:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

1 of 1

Result

Client Sample ID:

TSS-603

Project:

SECT00101

Page

Sample ID:

Matrix:

71786040

Client ID:

SECT001

Collect Date:

Qualifier

Soil

26-NOV-02 12:00

Receive Date: Collector:

09-DEC-02 Time Batch Method DLRL Units DF AnalystDate

Parameter Rad Total U

KPA, Total U. Solid

Total Uranium

+/-0.0515 3.71

0.143

1.00

ug/g

12/13/02 1427 220492 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1701	220360

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	A\$TM D 5174	

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range
- Holding time exceeded H
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy. UΙ
- Lab-specific qualifier must be fully described in case narrative and data summary package Х
- QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure. Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Certificate of Analysis

Company: SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Page

Report Date: December 16, 2002

1 of 1

Client Sample ID:

T\$\$-604

Proicct:

SECT00101

Sample ID:

Matrix:

71786041 Soil

Client ID: SECT001

Collect Date:

26-NOV-02 12:00

Receive Date: Collector:

09-DEC-02

Parameter Qualifier Result DL RL Units DF AnalystDate Time Batch Method

Rad Total U

KPA, Total U. Solid

Total Uranium

0.732 +/-0.0117 0.145

1.00

ug/g

12/13/02 1437 220492 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021, A-021B, A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021, A-021B, A-026	AWB	12/09/02	1701	220360

Y HE TOTOWING Y	rusiyucsi memouş were periormed	
Method	Description	Analyst Comments
1	A \$TM D 5174	

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range ĸ.
- Η Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

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Company:

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112-5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

Page 1 of I

Client Sample ID:

TSS-605

Proicct:

SECT00101

Sample ID:

71786042

Client ID: SECT001

Matrix:

Soil

26-NOV-02 12:00

Collect Date: Receive Date: Collector:

09-DEC-02

Client

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time Batch Method
Rad Total U							· · · · · · · · · · · · · · · · · · ·	4. 14. 14. 14. 14. 14. 14. 14. 14. 14. 1

KPA, Total U, Solid

Total Uranium

+/-0.0516 3.64

0.194

1.00

ug/g

BF1 12/13/02 1450 220492 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1701	220360

I he following A	Harancai Memora were her for men	40.000
Method	Description	Analyst Comments
		- 10 g/API
i	ASTM D 5174	

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range E
- Holding time exceeded Н
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package Х
- OC Samples were not spiked with this compound.

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Company:

SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact;

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

.

Report Date: December 16, 2002

....

Client Sample ID:

Resuit

T\$\$-606

0.71

DF

Page I of I

Time Batch Method

Sample ID:

Project: Client ID: SECT00101 SECT001

AnalystDate

Matrix: Collect Date: 71786043 Soil

Collect Date: Receive Date: Collector:

Qualifier

26-NOV-02 12:00

09-DEC-02

Parameter Rad Total U

KPA, Total U, Solid

Total Uranium

1.63 +/-0.0239

0.194

DL

1.00

RL

ug/g

Units

BF1 12/13/02 1512 220492 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1701	220360

The following Analytical Methods were performed

Y ME TORO ALITE N	sharytical Melhous were performed	
Method	Description	Analyst Comments
		The state of the s
1	ASTM D 5174	

Notes:

The Qualifiers in this report are defined as follows:

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- Ul Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure. Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Company:

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112-5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Client Sample ID:

Sample ID: Matrix:

Collect Date:

Receive Date: Collector:

Qualifier

TSS-607

71786044 Soil

26-NOV-02 12:00

DL

09-DEC-02 Client

Parameter Rad Total U

KPA, Total U, Solid

Total Uranium

+/-0.0531 3.82

Result

0.192

1.00

RL

ug/g

Units

Project:

Client ID:

DF

SECT00101

AnalystDate

SECT001

Report Date: December 16, 2002

Page 1 of 1

12/13/02 1515 220492 1

Time Batch Method

The following Pren Methods were perform

Method	Description	Analyst	Date	Time	Prep Batch	
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443	
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1701	220360	

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ASTM D 5174	

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported <
- Actual result is greater than amount reported
- ß Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range
- H Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

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Company: SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Client Sample ID:

TSS-608

Project:

SECTOOIOI SECTOOI

Sample ID:

Client ID:

Matrix: Collect Date: 71786045 Soil

26-NOV-02 12:00

Receive Date:

09-DEC-02

Collector:

Parameter Qualifier Result DL RL Units DF AnalystDate Time Batch Method

Rad Total U

KPA. Total U. Solid

Total Uranium

+/-0.0118 0.724

0.162

1.00

ug/g

BF1 12/13/02 1519 220492 1

Report Date: December 16, 2002

Page

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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch	
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TĆD	12/10/02	1323	220443	
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1701	220360	

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ASTM D 5174	

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported <
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range Ę
- Η Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy. UI
- Lab-specific qualifier must be fully described in case narrative and data summary package Х
- QC Samples were not spiked with this compound.

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Company: SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112-5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

Page

1 of 1

Time Batch Method

Client Sample ID:

T\$\$-609

Project:

Sample ID:

71786046

Client ID:

SECT00101 SECT001

Matrix:

Collector:

Soil

Collect Date: Receive Date:

Oualifier

26-NOV-02 12:00 09-DEC-02

Client Units AnalystDate DL RLDF

Parameter Rad Total U

KPA, Total U, Solid

Total Uranium

0.874 +/-0.0151

Result

0.176

1.00

ug/g

12/13/02 1524 220492 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021, A-021B, A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1702	220360

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	ASTM D 5174	(4)111111111111111111111111111111111111

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank, В
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range
- Holding time exceeded Η
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure. Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Company:

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

Page

of I

Client Sample ID:

TSS-610

71786047

Client ID:

Project:

SECT00101 SECT001

Sample ID: Matrix:

Soil

Collect Date: Receive Date:

26-NOV-02 12:00 09-DEC-02

	Collector:			Client						
Parameter	Qualifier	Result	:	DL	RL	Units	DF	AnalystDate	Time B	atch Method
Rad Total U										
KPA, Total U, Solid Total Uranium		6.24	+/-0.0884	0.190	1.00	ug/g		BFI 12/13/0	2 1526 22 0	0492 1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1702	220360

The following Analytical Methods were performed

A DE TORIO WING P	marytical Mediculous were periorit	104
Method	Description	Analyst Comments
		
1	ል የፓጌ <i>ለ</i> ነገ ና ነ <i>ጎለ</i>	

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range E
- Holding time exceeded н
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

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Company:

SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112--5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

Page

i of 1

Client Sample ID:

Sample ID:

TSS-612 71786048

Project: Client ID:

SECT00101 SECT001

Matrix: Collect Date: Receive Date:

Soil

27-NOV-02 12:00 09-DEC-02

Collector:

Qualifier

Result

RLUnits Time Batch Method DF **AnalystDate**

Parameter Rad Total U

KPA, Total U, Solid

Total Uranium

1.00 +/-0.0163 0.185

DL

1.00

ug/g

12/13/02 1542 220492

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021, A-021B, A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1702	220360

i ne ioliowing	Analytical Methods were performed		
Method	Description	Analyst Comments	
1	ASTM D 5174		

Notes:

The Qualifiers in this report are defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank. В
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range
- Н Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure. Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Sarah Kozlik.

Reviewed by		

Company:

TCAAP Building 502 Address:

Arden Hills, Minnesota 55112-5792

Contact:

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Client Sample ID:

Sample ID:

Matrix: Collect Date:

Receive Date: Collector:

Oualifier

TSS-613

71786049

Soil 04-DEC-02 12:00

09-DEC-02

DL

Project: SECT00101 Client ID: SECT001

of 1

Time Batch Method

Report Date: December 16, 2002

Parameter Rad Total U

KPA, Total U. Solid

Total Uranium

0.978 +/-0.0144

Result

0.196

1.00

RL

ug/g

Units

12/13/02 1600 220492

AnalystDate

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prop RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021,A-021B,A-026	AWB	12/09/02	1702	220360

The following A	nalytical Methods were perform	med
Method	Description	Analyst Comments
1	ASTM D 5174	

The Qualifiers in this report are defined as follows:

- < Actual result is less than amount reported
- Actual result is greater than amount reported
- Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Concentration exceeds instrument calibration range
- Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Uncertain identification for gamma spectroscopy.
- Lab-specific qualifier must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure. Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Sarah Kozlik.

Company: SEC

Address:

TCAAP Building 502

Arden Hills, Minnesota 55112-5792

Contact;

Todd Willis

Project:

Routine Analytical(ATK-TCAAP)

Report Date: December 16, 2002

Page

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Client Sample ID:

Sample ID:

TSS-614 71786050 Project: Client ID:

SECT00101 SECT001

Matrix:

Soil

04-DEC-02 12:00

DL

Collect Date: Receive Date:

Qualifier

09-DEC-02 Client

Collector:

Units AnalystDate Time Batch Method

Parameter Rad Total U

KPA, Total U. Solid

Total Uranium

1.48 +/-0.0218

Result

0.188

1.00

RL

ug/g

BF1

12/13/02 1603 220492

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep RAD A-021,A-021B,A-026	TCD	12/10/02	1323	220443
Dry Soil Prep	Dry Soil Prep RAD A-021, A-021B, A-026	AWB	12/09/02	1702	220360

The following Analytical Mathode were newforms

THE IONO WINE AMA	Marcay Mere berior	LIEU
Method	Description	Analyst Comments
1	ASTM D 5174	

Notes:

The Qualifiers in this report arc defined as follows:

- Actual result is less than amount reported
- Actual result is greater than amount reported
- В Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- Ε Concentration exceeds instrument calibration range
- Η Holding time exceeded
- Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- The response between the confirmation column and the primary column is >40%D
- Indicates the compound was analyzed for but not detected above the detection limit
- Ul Uncertain identification for gamma spectroscopy.
- Х Lab-specific qualifier - must be fully described in case narrative and data summary package
- QC Samples were not spiked with this compound.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure. Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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