

## Summary Report

Dorsey Rogers  
Cimarex  
207 S Mesa  
Carlsbad, NM, 88220

Report Date: June 6, 2007

Work Order: 7060408



Project Location: Eddy County NM

Project Name: ~~Marguardt 1 Fed Rem #1~~

30-015-33457

*Marguardt 1 Penn Fed #1*

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
126170	NW-Floor-C	soil	2007-04-19	09:10	2007-06-02
126171	NE-Floor-C	soil	2007-04-19	09:00	2007-06-02
126172	SW-Floor-C	soil	2007-04-19	08:50	2007-06-02
126173	SE-Floor-C	soil	2007-04-19	08:40	2007-06-02
126174	N-Wall-C	soil	2007-04-19	08:20	2007-06-02
126175	S-Wall-C	soil	2007-04-19	08:30	2007-06-02
126176	E-Wall-C	soil	2007-04-19	08:10	2007-06-02
126177	W-Wall-C	soil	2007-04-19	08:00	2007-06-02

**Sample: 126170 - NW-Floor-C**

Param	Flag	Result	Units	RL
Chloride		283	mg/Kg	5.00

**Sample: 126171 - NE-Floor-C**

Param	Flag	Result	Units	RL
Chloride		<500	mg/Kg	5.00

**Sample: 126172 - SW-Floor-C**

Param	Flag	Result	Units	RL
Chloride		169	mg/Kg	5.00

**Sample: 126173 - SE-Floor-C**

Param	Flag	Result	Units	RL
Chloride		1490	mg/Kg	5.00

**Sample: 126174 - N-Wall-C**

Param	Flag	Result	Units	RL
Chloride		<b>648</b>	mg/Kg	5.00

**Sample: 126175 - S-Wall-C**

Param	Flag	Result	Units	RL
Chloride		<b>439</b>	mg/Kg	5.00

**Sample: 126176 - E-Wall-C**

Param	Flag	Result	Units	RL
Chloride		<b>755</b>	mg/Kg	5.00

**Sample: 126177 - W-Wall-C**

Param	Flag	Result	Units	RL
Chloride		<b>843</b>	mg/Kg	5.00



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## Analytical and Quality Control Report

Dorsey Rogers  
Cimarex  
207 S Mesa  
Carlsbad, NM, 88220

Report Date: June 6, 2007

Work Order: 7060408



Project Location: Eddy County NM  
Project Name: Marguardt 1 Fed Rem #1  
Project Number: Marguardt 1 Fed Rem #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
126170	NW-Floor-C	soil	2007-04-19	09:10	2007-06-02
126171	NE-Floor-C	soil	2007-04-19	09:00	2007-06-02
126172	SW-Floor-C	soil	2007-04-19	08:50	2007-06-02
126173	SE-Floor-C	soil	2007-04-19	08:40	2007-06-02
126174	N-Wall-C	soil	2007-04-19	08:20	2007-06-02
126175	S-Wall-C	soil	2007-04-19	08:30	2007-06-02
126176	E-Wall-C	soil	2007-04-19	08:10	2007-06-02
126177	W-Wall-C	soil	2007-04-19	08:00	2007-06-02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 7 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

### Standard Flags

**B** - The sample contains less than ten times the concentration found in the method blank.

## Case Narrative

Samples for project Marguardt 1 Fed Rem #1 were received by TraceAnalysis, Inc. on 2007-06-02 and assigned to work order 7060408. Samples for work order 7060408 were received intact at a temperature of 22.0 deg C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
Chloride (Titration)	SM 4500-Cl B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 7060408 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

## Analytical Report

### Sample: 126170 - NW-Floor-C

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	37861	Date Analyzed:	2007-06-06	Analyzed By:	JS
Prep Batch:	32793	Sample Preparation:	2007-06-05	Prepared By:	SM

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		283	mg/Kg	20	5.00

### Sample: 126171 - NE-Floor-C

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	37861	Date Analyzed:	2007-06-06	Analyzed By:	JS
Prep Batch:	32793	Sample Preparation:	2007-06-05	Prepared By:	SM

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<500	mg/Kg	100	5.00

### Sample: 126172 - SW-Floor-C

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	37861	Date Analyzed:	2007-06-06	Analyzed By:	JS
Prep Batch:	32793	Sample Preparation:	2007-06-05	Prepared By:	SM

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		169	mg/Kg	20	5.00

### Sample: 126173 - SE-Floor-C

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	37861	Date Analyzed:	2007-06-06	Analyzed By:	JS
Prep Batch:	32793	Sample Preparation:	2007-06-05	Prepared By:	SM

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		1490	mg/Kg	100	5.00

### Sample: 126174 - N-Wall-C

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	37861	Date Analyzed:	2007-06-06	Analyzed By:	JS
Prep Batch:	32793	Sample Preparation:	2007-06-05	Prepared By:	SM

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		648	mg/Kg	100	5.00

**Sample: 126175 - S-Wall-C**

Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 37862      Date Analyzed: 2007-06-06      Analyzed By: JS  
Prep Batch: 32794      Sample Preparation: 2007-06-05      Prepared By: SM

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		439	mg/Kg	20	5.00

**Sample: 126176 - E-Wall-C**

Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 37862      Date Analyzed: 2007-06-06      Analyzed By: JS  
Prep Batch: 32794      Sample Preparation: 2007-06-05      Prepared By: SM

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		755	mg/Kg	4	5.00

**Sample: 126177 - W-Wall-C**

Analysis: Chloride (Titration)      Analytical Method: SM 4500-Cl B      Prep Method: N/A  
QC Batch: 37862      Date Analyzed: 2007-06-06      Analyzed By: JS  
Prep Batch: 32794      Sample Preparation: 2007-06-05      Prepared By: SM

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		843	mg/Kg	100	5.00

**Method Blank (1)**      QC Batch: 37861

QC Batch: 37861      Date Analyzed: 2007-06-06      Analyzed By: JS  
Prep Batch: 32793      QC Preparation: 2007-06-05      Prepared By: JS

Parameter	Flag	MDL Result	Units	RL
Chloride		<3.25	mg/Kg	5

**Method Blank (1)**      QC Batch: 37862

QC Batch: 37862      Date Analyzed: 2007-06-06      Analyzed By: JS  
Prep Batch: 32794      QC Preparation: 2007-06-05      Prepared By: JS

Parameter	Flag	MDL Result	Units	RL
Chloride		<3.25	mg/Kg	5

**Laboratory Control Spike (LCS-1)**

QC Batch: 37861  
Prep Batch: 32793

Date Analyzed: 2007-06-06  
QC Preparation: 2007-06-05

Analyzed By: JS  
Prepared By: JS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.3	mg/Kg	1	100	<3.25	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<3.25	102	90 - 110	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Laboratory Control Spike (LCS-1)**

QC Batch: 37862  
Prep Batch: 32794

Date Analyzed: 2007-06-06  
QC Preparation: 2007-06-05

Analyzed By: JS  
Prepared By: JS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.4	mg/Kg	1	100	<3.25	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<3.25	102	90 - 110	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 126172

QC Batch: 37861  
Prep Batch: 32793

Date Analyzed: 2007-06-06  
QC Preparation: 2007-06-05

Analyzed By: JS  
Prepared By: JS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	<sup>1</sup> 581	mg/Kg	20	2000	168.793	21	84.6 - 117

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

*continued ...*

<sup>1</sup>Matrix spike recoveries out of control limits due to matrix spike being diluted out. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	<sup>2</sup> 742	mg/Kg	20	2000	168.793	29	84.6 - 117	24	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Matrix Spike (MS-1)** Spiked Sample: 126175

QC Batch: 37862  
Prep Batch: 32794

Date Analyzed: 2007-06-06  
QC Preparation: 2007-06-05

Analyzed By: JS  
Prepared By: JS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	<sup>3</sup> 584	mg/Kg	20	2000	439.216	7	84.6 - 117

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	<sup>4</sup> 745	mg/Kg	20	2000	439.216	15	84.6 - 117	24	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

**Standard (ICV-1)**

QC Batch: 37861

Date Analyzed: 2007-06-06

Analyzed By: JS

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2007-06-06

**Standard (CCV-1)**

QC Batch: 37861

Date Analyzed: 2007-06-06

Analyzed By: JS

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.9	100	85 - 115	2007-06-06

**Standard (ICV-1)**

QC Batch: 37862

Date Analyzed: 2007-06-06

Analyzed By: JS

<sup>2</sup>Matrix spike recoveries out of control limits due to matrix spike being diluted out. Use LCS/LCSD to demonstrate analysis is under control.

<sup>3</sup>Matrix spike recoveries out of control limits due to matrix spike being diluted out. Use LCS/LCSD to demonstrate analysis is under control.

<sup>4</sup>Matrix spike recoveries out of control limits due to matrix spike being diluted out. Use LCS/LCSD to demonstrate analysis is under control.



Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2007-06-06

**Standard (CCV-1)**

QC Batch: 37862

Date Analyzed: 2007-06-06

Analyzed By: JS

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2007-06-06

