



14-Dec-2012

Ted Philley
Key Energy Services, Inc.
6 Desta Drive Suite 4300
Midland, TX 79705

Tel: (432) 571-7141
Fax:

Re: Key Silver Oak

Work Order: **1212262**

Dear Ted,

ALS Environmental received 16 samples on 07-Dec-2012 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 27.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink that reads 'Bernadette Fini'.

Electronically approved by: Bernadette A. Fini

Bernadette A. Fini
Project Manager



Certificate No: TX: T104704231-12-10

Client: Key Energy Services, Inc.
Project: Key Silver Oak
Work Order: 1212262

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1212262-01	485-339-2'	Soil		12/5/2012 12:57	12/7/2012 09:00	☐
1212262-02	480-341-6"	Soil		12/5/2012 13:24	12/7/2012 09:00	☐
1212262-03	487-339-6"	Soil		12/5/2012 13:27	12/7/2012 09:00	☐
1212262-04	483-349-2'	Soil		12/5/2012 13:33	12/7/2012 09:00	☐
1212262-05	484-391-1.5'	Soil		12/5/2012 13:35	12/7/2012 09:00	☐
1212262-06	486-335-2'	Soil		12/5/2012 13:41	12/7/2012 09:00	☐
1212262-07	471-367-2'	Soil		12/5/2012 13:47	12/7/2012 09:00	☐
1212262-08	474-366-2'	Soil		12/5/2012 14:00	12/7/2012 09:00	☐
1212262-09	464-361-6"	Soil		12/7/2012 14:01	12/7/2012 09:00	☐
1212262-10	465-364-6"	Soil		12/7/2012 14:05	12/7/2012 09:00	☐
1212262-11	477-389-2.5'	Soil		12/5/2012 14:23	12/7/2012 09:00	☐
1212262-12	491-391-6"	Soil		12/5/2012 14:34	12/7/2012 09:00	☐
1212262-13	462-387-6"	Soil		12/5/2012 14:53	12/7/2012 09:00	☐
1212262-14	476-380-6"	Soil		12/5/2012 14:56	12/7/2012 09:00	☐
1212262-15	483-385-1.5'	Soil		12/5/2012 14:58	12/7/2012 09:00	☐
1212262-16	492-384-6"	Soil		12/5/2012 15:00	12/7/2012 09:00	☐

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Work Order: 1212262

Case Narrative

No Exceptions

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 485-339-2'

Collection Date: 12/5/2012 12:57 PM

Work Order: 1212262

Lab ID: 1212262-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	557		5.19	mg/Kg-dry	1	12/13/2012 01:28 AM
Surr: Selenate (surr)	101		85-115	%REC	1	12/13/2012 01:28 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	4.41		0.0100	wt%	1	12/12/2012 08:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 480-341-6"

Collection Date: 12/5/2012 01:24 PM

Work Order: 1212262

Lab ID: 1212262-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	10.5		5.22	mg/Kg-dry	1	12/13/2012 01:42 AM
Surr: Selenate (surr)	113		85-115	%REC	1	12/13/2012 01:42 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	5.02		0.0100	wt%	1	12/12/2012 08:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 487-339-6"

Collection Date: 12/5/2012 01:27 PM

Work Order: 1212262

Lab ID: 1212262-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	U		5.22	mg/Kg-dry	1	12/13/2012 01:57 AM
Surr: Selenate (surr)	110		85-115	%REC	1	12/13/2012 01:57 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	4.92		0.0100	wt%	1	12/12/2012 08:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 483-349-2'

Collection Date: 12/5/2012 01:33 PM

Work Order: 1212262

Lab ID: 1212262-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	182		5.03	mg/Kg-dry	1	12/13/2012 02:11 AM
Surr: Selenate (surr)	112		85-115	%REC	1	12/13/2012 02:11 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	0.973		0.0100	wt%	1	12/12/2012 08:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 484-391-1.5'

Collection Date: 12/5/2012 01:35 PM

Work Order: 1212262

Lab ID: 1212262-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	746		51.7	mg/Kg-dry	10	12/13/2012 02:55 AM
Surr: Selenate (surr)	104		85-115	%REC	10	12/13/2012 02:55 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	4.49		0.0100	wt%	1	12/12/2012 08:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 486-335-2'

Collection Date: 12/5/2012 01:41 PM

Work Order: 1212262

Lab ID: 1212262-06

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	931		53.2	mg/Kg-dry	10	12/13/2012 03:09 AM
Surr: Selenate (surr)	109		85-115	%REC	10	12/13/2012 03:09 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	6.44		0.0100	wt%	1	12/12/2012 08:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Work Order: 1212262

Sample ID: 471-367-2'

Lab ID: 1212262-07

Collection Date: 12/5/2012 01:47 PM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	4,940		53.5	mg/Kg-dry	10	12/13/2012 03:24 AM
Surr: Selenate (surr)	109		85-115	%REC	10	12/13/2012 03:24 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	6.64		0.0100	wt%	1	12/12/2012 07:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Work Order: 1212262

Sample ID: 474-366-2'

Lab ID: 1212262-08

Collection Date: 12/5/2012 02:00 PM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	3,540		52.8	mg/Kg-dry	10	12/13/2012 03:39 AM
Surr: Selenate (surr)	109		85-115	%REC	10	12/13/2012 03:39 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	5.45		0.0100	wt%	1	12/12/2012 07:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 464-361-6"

Collection Date: 12/7/2012 02:01 PM

Work Order: 1212262

Lab ID: 1212262-09

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	7.20		5.10	mg/Kg-dry	1	12/13/2012 03:53 AM
Surr: Selenate (surr)	105		85-115	%REC	1	12/13/2012 03:53 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	3.01		0.0100	wt%	1	12/12/2012 07:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 465-364-6"

Collection Date: 12/7/2012 02:05 PM

Work Order: 1212262

Lab ID: 1212262-10

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	10.9		5.16	mg/Kg-dry	1	12/13/2012 04:08 AM
Surr: Selenate (surr)	110		85-115	%REC	1	12/13/2012 04:08 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	3.36		0.0100	wt%	1	12/12/2012 07:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Work Order: 1212262

Sample ID: 477-389-2.5'

Lab ID: 1212262-11

Collection Date: 12/5/2012 02:23 PM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	90.5		5.15	mg/Kg-dry	1	12/13/2012 04:22 AM
Surr: Selenate (surr)	115		85-115	%REC	1	12/13/2012 04:22 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	3.06		0.0100	wt%	1	12/12/2012 07:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Work Order: 1212262

Sample ID: 491-391-6"

Lab ID: 1212262-12

Collection Date: 12/5/2012 02:34 PM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	32.0		5.17	mg/Kg-dry	1	12/13/2012 04:37 AM
Surr: Selenate (surr)	108		85-115	%REC	1	12/13/2012 04:37 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	4.23		0.0100	wt%	1	12/12/2012 07:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 462-387-6"

Collection Date: 12/5/2012 02:53 PM

Work Order: 1212262

Lab ID: 1212262-13

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	211		5.31	mg/Kg-dry	1	12/13/2012 04:51 AM
Surr: Selenate (surr)	111		85-115	%REC	1	12/13/2012 04:51 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	6.03		0.0100	wt%	1	12/12/2012 07:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 476-380-6"

Collection Date: 12/5/2012 02:56 PM

Work Order: 1212262

Lab ID: 1212262-14

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	10.6		5.17	mg/Kg-dry	1	12/13/2012 05:06 AM
Surr: Selenate (surr)	110		85-115	%REC	1	12/13/2012 05:06 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	3.49		0.0100	wt%	1	12/12/2012 07:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 483-385-1.5'

Collection Date: 12/5/2012 02:58 PM

Work Order: 1212262

Lab ID: 1212262-15

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	487		5.10	mg/Kg-dry	1	12/13/2012 05:49 AM
Surr: Selenate (surr)	110		85-115	%REC	1	12/13/2012 05:49 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	2.89		0.0100	wt%	1	12/12/2012 07:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 492-384-6"

Collection Date: 12/5/2012 03:00 PM

Work Order: 1212262

Lab ID: 1212262-16

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			E300		Prep Date: 12/11/2012	Analyst: JKP
Chloride	7.76		5.15	mg/Kg-dry	1	12/13/2012 06:04 AM
Surr: Selenate (surr)	105		85-115	%REC	1	12/13/2012 06:04 AM
MOISTURE			SW3550			Analyst: KAH
Percent Moisture	3.04		0.0100	wt%	1	12/12/2012 07:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 14-Dec-12

Client: Key Energy Services, Inc.
Work Order: 1212262
Project: Key Silver Oak

QC BATCH REPORT

Batch ID: **66504** Instrument ID **ICS2100** Method: **E300** **(Dissolve)**

MBLK	Sample ID: WBLKS1-121312-66504				Units: mg/Kg		Analysis Date: 12/13/2012 12:15 A			
Client ID:	Run ID: ICS2100_121212B				SeqNo: 3051590		Prep Date: 12/11/2012		DF: 1	
Analyte	Result	MLQ	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	5.0								
<i>Surr: Selenate (surr)</i>	53.32	1.0	50	0	107	85-115	0			

LCS	Sample ID: WLCSS1-121312-66504				Units: mg/Kg		Analysis Date: 12/13/2012 12:29 A			
Client ID:	Run ID: ICS2100_121212B				SeqNo: 3051591		Prep Date: 12/11/2012		DF: 1	
Analyte	Result	MLQ	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	198.2	5.0	200	0	99.1	90-110	0			
<i>Surr: Selenate (surr)</i>	50.43	1.0	50	0	101	85-115	0			

MS	Sample ID: 1212262-16AMS				Units: mg/Kg		Analysis Date: 12/13/2012 06:19 A			
Client ID: 492-384-6"	Run ID: ICS2100_121212B				SeqNo: 3051618		Prep Date: 12/11/2012		DF: 1	
Analyte	Result	MLQ	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	98.85	5.0	99.45	7.52	91.8	75-125	0			
<i>Surr: Selenate (surr)</i>	105.2	0.99	99.45	0	106	80-120	0			

MSD	Sample ID: 1212262-16AMSD				Units: mg/Kg		Analysis Date: 12/13/2012 06:33 A			
Client ID: 492-384-6"	Run ID: ICS2100_121212B				SeqNo: 3051619		Prep Date: 12/11/2012		DF: 1	
Analyte	Result	MLQ	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	99.06	5.0	99.69	7.52	91.8	75-125	98.85	0.215	20	
<i>Surr: Selenate (surr)</i>	106.1	1.0	99.69	0	106	80-120	105.2	0.858	20	

The following samples were analyzed in this batch:

1212262-01A	1212262-02A	1212262-03A
1212262-04A	1212262-05A	1212262-06A
1212262-07A	1212262-08A	1212262-09A
1212262-10A	1212262-11A	1212262-12A
1212262-13A	1212262-14A	1212262-15A
1212262-16A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 3

Client: Key Energy Services, Inc.

Work Order: 1212262

Project: Key Silver Oak

QC BATCH REPORT

Batch ID: **R139773** Instrument ID **Balance1** Method: **SW3550** **(Dissolve)**

DUP Sample ID: **1212262-06ADUP** Units: **wt%** Analysis Date: **12/12/2012 08:30 PM**

Client ID: **486-335-2'** Run ID: **BALANCE1_121212H** SeqNo: **3051400** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture	6.032	0.010	0	0	0	0-0	6.436	6.48	20	

The following samples were analyzed in this batch:

1212262-01A	1212262-02A	1212262-03A
1212262-04A	1212262-05A	1212262-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Key Energy Services, Inc.
Work Order: 1212262
Project: Key Silver Oak

QC BATCH REPORT

Batch ID: R139803 Instrument ID Balance1 Method: SW3550 (Dissolve)

DUP Sample ID: 1212280-06ADUP Units: wt% Analysis Date: 12/12/2012 07:30 PM
Client ID: Run ID: BALANCE1_121212I SeqNo: 3052167 Prep Date: DF: 1

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture	10.49	0.010	0	0	0	0-0	9.789	6.9	20	

The following samples were analyzed in this batch:

1212262-07A	1212262-08A	1212262-09A
1212262-10A	1212262-11A	1212262-12A
1212262-13A	1212262-14A	1212262-15A
1212262-16A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Key Energy Services, Inc.
Project: Key Silver Oak
WorkOrder: 1212262

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
mg/Kg-dry wt%	Milligrams per Kilogram - Dry weight corrected

Sample Receipt Checklist

Client Name: **KEY ENERGY**

Date/Time Received: **07-Dec-12 09:00**

Work Order: **1212262**

Received by: **PMG**

Checklist completed by Rishel D. Naran
eSignature

08-Dec-12
Date

Reviewed by: Bernadette D. Fini
eSignature

10-Dec-12
Date

Matrices: **SOIL**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	
Temperature(s)/Thermometer(s):	<u>2.9C U/C</u> <u>005</u>		
Cooler(s)/Kit(s):	<u>4797</u>		
Date/Time sample(s) sent to storage:	<u>12/8/12 08:46</u>		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☒
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒
pH adjusted?	Yes ☐	No ☐	N/A ☒
pH adjusted by:	<u>-</u>		
Login Notes:			

Client Contacted:

Date Contacted:

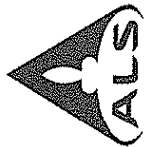
Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Environmental

Chain of Custody Form

Page 1 of 2

COC ID: 38232

ALS Project Manager:

☐ Cin +1
☐ Eve +1
☐ Fort +1

KEY ENERGY: Key Energy Services, Inc.

Project:



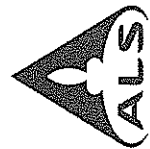
1212262

Customer Information				Project Information													
Purchase Order	Project Name	ALS Project Manager:		Request for Analysis													
Work Order	Project Number																
Company Name	Bill To Company																
Send Report To	Invoice Attn.																
Address	Address																
City/State/Zip	City/State/Zip																
Phone	Phone																
Fax	Fax																
e-Mail Address	e-Mail Address																
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	405-339-2'	12/5/12	12:57	S	S	1											
2	480-341-6"		13:24	S	S	1											
3	487-335-6"		13:27														
4	484-391-1.5'		13:33														
5	484-391-1.5'		13:35														
6	486-335-2'		13:41														
7	471-367-2'		13:47														
8	474-366-2'		14:00														
9	464-361-6"		14:01														
10	465-364-6"		14:05														
Sampler(s): Please Print & Sign				Shipment Method:		Required Turnaround Time:		Results Due Date:									
Bazil Ruy				FedEx		☐ STD 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour		Other: ☐									
Relinquished by:				Received by:		Notes:											
Date: 12/6/12 16:00				Date: 12/7/12 09:00		Cooler Temp:											
Relinquished by:				Checked by (Laboratory):		QC Package: (Check Box Below)											
Date:				Date:		Level II: Standard QC											
Date:				Date:		Level III: Std QC + Raw Data											
Date:				Date:		Level IV: SW846 CLP-Like											
Date:				Date:		Other:											
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035																	

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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4797.



Environmental

Chain of Custody Form

Page 2 of 2

COC ID: 38376

- ☐ Cincinnati, OH +1 513 733 5336
☐ Everett, WA +1 425 356 2600
☐ Fort Collins, CO +1 970 490 1511
☐ Holland, MI +1 616 399 6070
☐ Houston, TX +1 281 530 5656
☐ Middletown, PA +1 717 944 5541
☐ Salt Lake City, UT +1 801 266 7700
☐ Spring City, PA +1 610 948 4903
☐ York, PA +1 717 505 5280

ALS Project Manager:

Work Order #:

Parameter/Method Request for Analysis

Customer Information				Project Information				Parameter/Method Request for Analysis											
Purchase Order	Project Name			Project Number			A Autos (300) CI												
Work Order	Project Number			Bill To Company			B												
Company Name	Invoice Attn.			Address			C												
Send Report To	City/State/Zip			Phone			D												
Address	e-Mail Address			Fax			E												
City/State/Zip	Date			Time			F												
Phone	Matrix			Pres.			G												
Fax	# Bottles			A			H												
e-Mail Address	J			I			J												
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	477-389-205'	12/5/12	14:23	S	8	1	✓												
2	491-391-6"		14:34																
3	462-387-6"		14:53																
4	476-580-6"		14:56																
5	483-385-1.5'		14:58																
6	492-384-6"		15:00																
7																			
8																			
9																			
10																			

Sampler(s): Please Print & Sign
Bry Pfluy BAP Edwards Pfluy

Shipment Method: Fedex
Required Turnaround Time: ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ Other ☐ 24 Hour

Results Due Date:

Relinquished by: Bry Pfluy
Date: 12/6/12
Time: 16:00

Received by:
Date: 12-7-12
Time: 0900

QC Package: (Check Box Below)
☐ Level II: Standard QC
☐ Level III: Std QC + Raw Data
☐ Level IV: SW846 CLP-Like
Other:

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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1212262



ALS Environmental

10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel: +1 281 530 5656
Fax: +1 281 530 5887

4797

CUSTODY SEAL

Date: 12/6/12 Time: 10:00
Name: Ted Perry
Company: Key

Seal Broken By:

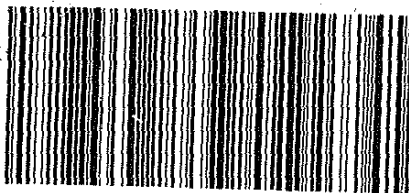
Date: 12-7-12

TRK# 8013 7713 7074
0215

FRI - 07 DEC A1
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH



798085 06Dec 23:57 AFWH 512C1/B2B3/CF60



04-Feb-2013

Ted Philley
Key Energy Services, Inc.
6 Desta Drive Suite 4300
Midland, TX 79705

Tel: (432) 571-7141
Fax:

Re: Key Silver Oak

Work Order: **1301854**

Dear Ted,

ALS Environmental received 12 samples on 26-Jan-2013 09:15 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 22.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in cursive script that reads "Bernadette Fini".

Electronically approved by: Bernadette A. Fini

Bernadette A. Fini
Project Manager



Certificate No: TX: T104704231-12-10

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

ALS GROUP USA, CORP. Part of the ALS Group An ALS Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Key Energy Services, Inc.
Project: Key Silver Oak
Work Order: 1301854

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1301854-01	489-381-6"	Soil		1/24/2013 15:31	1/26/2013 09:15	☐
1301854-02	483-385-2.5'	Soil		1/24/2013 15:36	1/26/2013 09:15	☐
1301854-03	484-391-2.5'	Soil		1/24/2013 15:45	1/26/2013 09:15	☐
1301854-04	495-288-1.5'	Soil		1/24/2013 16:09	1/26/2013 09:15	☐
1301854-05	493-287-6"	Soil		1/24/2013 16:21	1/26/2013 09:15	☐
1301854-06	485-326-8"	Soil		1/24/2013 16:29	1/26/2013 09:15	☐
1301854-07	485-339-2.5'	Soil		1/24/2013 16:34	1/26/2013 09:15	☐
1301854-08	486-335-2.5'	Soil		1/24/2013 16:40	1/26/2013 09:15	☐
1301854-09	471-367-2.5'	Soil		1/24/2013 16:52	1/26/2013 09:15	☐
1301854-10	474-366-2.5'	Soil		1/24/2013 16:56	1/26/2013 09:15	☐
1301854-11	478-367-6"	Soil		1/24/2013 17:11	1/26/2013 09:15	☐
1301854-12	483-354-6"	Soil		1/24/2013 17:15	1/26/2013 09:15	☐

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Work Order: 1301854

Case Narrative

No Exceptions

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 489-381-6"

Collection Date: 1/24/2013 03:31 PM

Work Order: 1301854

Lab ID: 1301854-01

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	ND		1.9	4.83	mg/Kg-dry	1	2/1/2013 00:53
Surr: Selenate (surr)	85.9			85-115	%REC	1	2/1/2013 00:53
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	8.21		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 483-385-2.5'

Collection Date: 1/24/2013 03:36 PM

Work Order: 1301854

Lab ID: 1301854-02

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	266		1.8	4.54	mg/Kg-dry	1	2/1/2013 01:08
Surr: Selenate (surr)	91.7			85-115	%REC	1	2/1/2013 01:08
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	4.56		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 484-391-2.5'

Collection Date: 1/24/2013 03:45 PM

Work Order: 1301854

Lab ID: 1301854-03

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	284		1.9	4.77	mg/Kg-dry	1	2/1/2013 01:22
Surr: Selenate (surr)	87.5			85-115	%REC	1	2/1/2013 01:22
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	8.53		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 495-288-1.5'

Collection Date: 1/24/2013 04:09 PM

Work Order: 1301854

Lab ID: 1301854-04

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	37.3		1.9	4.86	mg/Kg-dry	1	2/1/2013 01:37
Surr: Selenate (surr)	86.3			85-115	%REC	1	2/1/2013 01:37
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	6.78		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 493-287-6"

Collection Date: 1/24/2013 04:21 PM

Work Order: 1301854

Lab ID: 1301854-05

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	101		2.0	5.02	mg/Kg-dry	1	2/1/2013 01:51
Surr: Selenate (surr)	87.1			85-115	%REC	1	2/1/2013 01:51
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	10.5		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.**Project:** Key Silver Oak**Sample ID:** 485-326-8"**Collection Date:** 1/24/2013 04:29 PM**Work Order:** 1301854**Lab ID:** 1301854-06**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	24.0		2.0	4.97	mg/Kg-dry	1	2/1/2013 02:06
Surr: Selenate (surr)	90.8			85-115	%REC	1	2/1/2013 02:06
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	10.4		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.
Project: Key Silver Oak
Sample ID: 485-339-2.5'
Collection Date: 1/24/2013 04:34 PM

Work Order: 1301854
Lab ID: 1301854-07
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	96.5		2.0	5.08	mg/Kg-dry	1	2/1/2013 02:20
Surr: Selenate (surr)	91.4			85-115	%REC	1	2/1/2013 02:20
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	7.20		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.**Project:** Key Silver Oak**Sample ID:** 486-335-2.5'**Collection Date:** 1/24/2013 04:40 PM**Work Order:** 1301854**Lab ID:** 1301854-08**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	29.2		1.9	4.71	mg/Kg-dry	1	2/1/2013 02:35
Surr: Selenate (surr)	86.9			85-115	%REC	1	2/1/2013 02:35
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	5.10		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 471-367-2.5'

Collection Date: 1/24/2013 04:52 PM

Work Order: 1301854

Lab ID: 1301854-09

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	466		1.9	4.75	mg/Kg-dry	1	2/1/2013 03:18
Surr: Selenate (surr)	88.1			85-115	%REC	1	2/1/2013 03:18
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	8.07		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 474-366-2.5'

Collection Date: 1/24/2013 04:56 PM

Work Order: 1301854

Lab ID: 1301854-10

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	2,420		20	50.3	mg/Kg-dry	10	2/1/2013 03:33
Surr: Selenate (surr)	88.4			85-115	%REC	10	2/1/2013 03:33
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	12.4		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.

Project: Key Silver Oak

Sample ID: 478-367-6"

Collection Date: 1/24/2013 05:11 PM

Work Order: 1301854

Lab ID: 1301854-11

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	5.16		2.0	4.96	mg/Kg-dry	1	2/1/2013 03:48
Surr: Selenate (surr)	88.9			85-115	%REC	1	2/1/2013 03:48
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	7.18		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.**Project:** Key Silver Oak**Sample ID:** 483-354-6"**Collection Date:** 1/24/2013 05:15 PM**Work Order:** 1301854**Lab ID:** 1301854-12**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 1/31/13		Analyst: JKP	
Chloride	ND		1.9	4.73	mg/Kg-dry	1	2/1/2013 04:02
Surr: Selenate (surr)	89.0			85-115	%REC	1	2/1/2013 04:02
MOISTURE		Method: SW3550				Analyst: KAH	
Percent Moisture	7.06		0.010	0.0100	wt%	1	1/29/2013

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 04-Feb-13

Client: Key Energy Services, Inc.
Work Order: 1301854
Project: Key Silver Oak

QC BATCH REPORT

Batch ID: **67524** Instrument ID **ICS2100** Method: **E300** **(Dissolve)**

MBLK	Sample ID: WBLKS1-67524			Units: mg/Kg			Analysis Date: 2/1/2013 12:20 AM			
Client ID:	Run ID: ICS2100_130131A			SeqNo: 3098943			Prep Date: 1/31/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	5.0								
Surr: Selenate (surr)	44.91	1.0	50	0	89.8	85-115	0			

LCS	Sample ID: WLCSS1-67524			Units: mg/Kg			Analysis Date: 2/1/2013 12:35 AM			
Client ID:	Run ID: ICS2100_130131A			SeqNo: 3098944			Prep Date: 1/31/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	218.9	5.0	200	0	109	90-110	0			
Surr: Selenate (surr)	45.91	1.0	50	0	91.8	85-115	0			

MS	Sample ID: 1301867-03AMS			Units: mg/Kg			Analysis Date: 2/1/2013 05:00 AM			
Client ID:	Run ID: ICS2100_130131A			SeqNo: 3098962			Prep Date: 1/31/2013		DF: 5	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1545	22	436.1	1116	98.4	75-125	0			
Surr: Selenate (surr)	188.8	4.4	218.1	0	86.6	80-120	0			

MSD	Sample ID: 1301867-03AMSD			Units: mg/Kg			Analysis Date: 2/1/2013 05:15 AM			
Client ID:	Run ID: ICS2100_130131A			SeqNo: 3098963			Prep Date: 1/31/2013		DF: 5	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1530	22	433.5	1116	95.6	75-125	1545	0.939	20	
Surr: Selenate (surr)	186.3	4.3	216.8	0	85.9	80-120	188.8	1.36	20	

The following samples were analyzed in this batch:

1301854-01A	1301854-02A	1301854-03A
1301854-04A	1301854-05A	1301854-06A
1301854-07A	1301854-08A	1301854-09A
1301854-10A	1301854-11A	1301854-12A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 2

Client: Key Energy Services, Inc.
Work Order: 1301854
Project: Key Silver Oak

QC BATCH REPORT

Batch ID: **R141900** Instrument ID **Balance1** Method: **SW3550** **(Dissolve)**

DUP Sample ID: **1301854-12ADUP** Units: **wt%** Analysis Date: **1/29/2013**
Client ID: **483-354-6"** Run ID: **BALANCE1_130129F** SeqNo: **3096554** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture	7.516	0.010	0	0	0	0-0	7.057	6.3	20	

The following samples were analyzed in this batch:

1301854-01A	1301854-02A	1301854-03A
1301854-04A	1301854-05A	1301854-06A
1301854-07A	1301854-08A	1301854-09A
1301854-10A	1301854-11A	1301854-12A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Key Energy Services, Inc.
Project: Key Silver Oak
WorkOrder: 1301854

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
mg/Kg-dry wt%	Milligrams per Kilogram - Dry weight corrected

Sample Receipt Checklist

Client Name: **KEY ENERGY**

Date/Time Received: **26-Jan-13 09:15**

Work Order: **1301854**

Received by: **RDH**

Checklist completed by Robert D. Harris
eSignature

26-Jan-13
Date

Reviewed by: Bernadette D. Fini
eSignature

28-Jan-13
Date

Matrices: soils

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	
Temperature(s)/Thermometer(s):	<u>1.7c c/u</u> <u>005</u>		
Cooler(s)/Kit(s):	<u>3031</u>		
Date/Time sample(s) sent to storage:	<u>1/26/13 11:15</u>		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☒
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒
pH adjusted?	Yes ☐	No ☐	N/A ☒
pH adjusted by:	<u>-</u>		
Login Notes:			

Client Contacted:

Date Contacted:

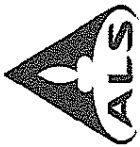
Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 1 of 2
COC ID: 66085

1301854

KEY ENERGY: Key Energy Services, Inc.
Project: Key Silver Oak

Environmental



ALS Project Manager:

Customer Information				Project Information			
Purchase Order	Project Name	Project Number	Antennas (300) CI				
Work Order	Key Energy Services, Inc.	Key Energy - Dept. 78613					
Company Name	Ted Philley	Dan Gibson					
Send Report To	1301 McKinney St Suite 1800	PO Box 78000					
Address	Houston, Tx 77010	Detroit, MI 48278-0813					
City/State/Zip	Phone (713) 767-5522	Phone (734) 957-9129					
Phone	Fax	e-Mail Address					
Fax							
e-Mail Address							

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	489-381-6"	1/24/13	15:31	S	8	1	✓										
2	483-385-2.5'		15:36														
3	484-391-2.5'		15:45														
4	495-288-1.5'		16:09														
5	493-287-6"		16:21														
6	485-326-8"		16:29														
7	485-339-2.5'		16:34														
8	486-335-2.5'		16:40														
9	471-367-2.5'		16:52														
10	474-366-2.5'		16:56														

Sampler(s) Please Print & Sign	Shipment Method	Required Turnaround Time: (Check Box)	Results Due Date:
Ed Kelly Forward Philley to test		☐ Std 10 WK Days ☒ 5 WK Days ☐ Other 2 WK Days ☐ 24 Hour	

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Ed Kelly	1/25	12:00	Ed Kelly	1/26	13:05

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Ed Kelly	1/25	12:00	Ed Kelly	1/26	13:05

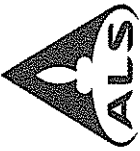
Logged by (Laboratory):	Date:	Time:	Received by (Laboratory):	Date:	Time:

Preservative Key:	1-HCl	2-HNO ₃	3-H ₂ SO ₄	4-NaOH	5-Na ₂ S ₂ O ₃	6-NaHSO ₄	7-Other	8-4°C	9-5035

QC Package: (Check One Box Below)	Level II Std QC	Level III Std QC/RAW Data	Level IV SW846/CLP	Other / EDD
	☒	☐	☐	☐

TRRP Checklist	TRRP Level IV
☐	☐

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.



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Chain of Custody Form

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903
Salt Lake City, UT
+1 801 266 7700

South Charles
+1 304 356 3168
York, PA
+1 717 505 5280

Environmental

Page 1 of 1
COC ID: 66083

Customer Information				Project Information				ALS Project Manager:				ALS Work Order #:			
Purchase Order				Project Name				ALS Project Manager:				ALS Work Order #:			
Work Order				Project Number				ALS Project Manager:				ALS Work Order #:			
Company Name				Bill To Company				ALS Project Manager:				ALS Work Order #:			
Send Report To				Invoice Attn				ALS Project Manager:				ALS Work Order #:			
Address				Address				ALS Project Manager:				ALS Work Order #:			
City/State/Zip				City/State/Zip				ALS Project Manager:				ALS Work Order #:			
Phone				Phone				ALS Project Manager:				ALS Work Order #:			
Fax				Fax				ALS Project Manager:				ALS Work Order #:			
e-Mail Address				e-Mail Address				ALS Project Manager:				ALS Work Order #:			
Sample Description				Time				Matrix				Pres.			
1 478-367-6"				1/24 16:17				5				8 1			
2 483-354-6"				1/24 17:15				5				8 1			
3															
4															
5															
6															
7															
8															
9															
10															
Sampler(s) Please Print & Sign				Shipment Method				Required Turnaround Time: (Check Box)				Results Due Date:			
Bred Philley Edwards Philley				Fedex				☐ Std 10 W/K Days ☒ 5 W/K Days ☐ Other				☐ 2 W/K Days ☐ 24 Hour			
Relinquished by:				Received by:				Notes:				5 Day TAT			
Bred Philley				Bred Philley											
Relinquished by:				Received by:											
Bred Philley				Bred Philley											
Logged by (Laboratory):				Checked by (Laboratory):				Cooler ID				Cooler Temp.			
Date:				Date:											
Date:				Date:											
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035															
QC Package: (Check One Box Below)															
☒ Level II Std QC															
☐ Level III Std QC/RAW Data															
☐ Level IV SW/646/CLP															
Other / EDP															

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

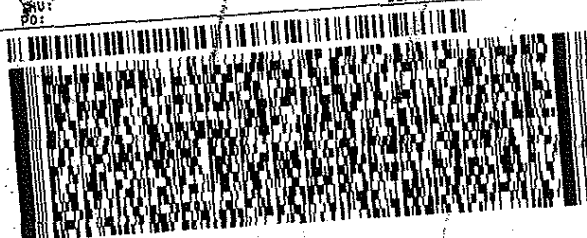
Copyright 2011 by ALS Environmental.

1501859

ORIGIN ID:MAFA 4326200300x0000
KEY ENERGY MIDLAND CORPORATE
6 DESTA DR STE 4400
MIDLAND TX 797055540
UNITED STATES US

SHIP DATE: 25JAN13
ACTWGT: 33.8 LB
CAD: /OFFC1322
DIMS: 27x21x17 IN
BILL SENDER

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF RD
STE 210
HOUSTON TX 77099
(281) 530-5656
REF: DEPT:



FedEx
Express



TRK# 8013 7025 0323
0215

SATURDAY ### A1
PRIORITY OVERNIGHT

XO SGRA

77099
TX-US IAH



ALS Environmental

10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL

Date: 1/25/13 Time: 4:20
Name: Ted Pugh
Company: Key Energy

Signature: [Handwritten Signature]
Date: 1/26/13



3/3/2012

9-417

491-391-6"

492-384-6"

484-391-1.5'

484-391

483-385-1.5'

477-389

477-389-2.5"

476-380-6"

462-387-6"

474-366-2'

483-349-2'

471-367

487-339-6"

476-352

484-339

485-339-2'

465-364-6"

480-341-6"

486-335-2'

491-312

486-318

456-502 (493-300)

495-288-6'

End point

77 ft

© 2012 Google

Google earth

Imagery Date: 3/3/2012



1996

lat 32.694850° lon -103.493487° elev 3939 ft

Eye alt 4277 ft

Key Energy Services, LLC Merit Silver Oak Tank Battery Lea County, New Mexico		Analyte	Chloride			Analyte	Chloride			Analyte	Chloride											
		Units	mg/Kg-dry			Units	mg/Kg-dry			Units	mg/Kg-dry											
		RL	5			RL	5			RL	5											
Grab Sample GPS Location (Lat 32.69xxx°, -103.49xxx)	Date Sampled	NMOCD limits	250	Grab Sample GPS Location	Date Sampled	NMOCD limits	250	Grab Sample GPS Location	Date Sampled	NMOCD limits	250	NMOCD limits 250										
479 417 0"-4"	17-Oct-12	1460		ns*				ns*														
484-391	17-Oct-12	4300		484-391-1.5'	05-Dec-12	746		484-391-2.5'	24-Jan-13	284		484-391-2.5'	07-Feb-13	1302301-01	204							
477-389	17-Oct-12	3940		477-389-2.5'	05-Dec-12	90.5		---														
471-367	17-Oct-12	4050		471-367-2'	05-Dec-12	4940		471-367-2.5'	24-Jan-13	466		471-367-2.5	07-Feb-13	1302301-04	1160							
476-352	17-Oct-12	167		---				---														
484-339	17-Oct-12	1020		485-339-2'	05-Dec-12	557		485-339-2.5'	24-Jan-13	96.5												
486-318	17-Oct-12	56.3																				
491-312	17-Oct-12	32.5																				
456-502	17-Oct-12	57.1																				
495-288-6"	17-Oct-12	285		ns	---	---		495-288-1.5'	24-Jan-13	37.3												
NOTES: 1. Shaded cells indicate PCL exceeded 2. Detections in bold print 3. Methods: Chloride E300 [300_S] Percent Moisture SW3550 [MOIST _SW3550] 4. *ns = no sample 5. REGULATORY FRAMEWORK: Using the OCD’s Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993, and site specific general site characteristics, hydrocarbon screening levels were developed for the Site.				462-387-6"	05-Dec-12	211																
				464-361-6"	07-Dec-12	7.2																
				465-364-6"	07-Dec-12	10.9																
				474-366-2'	05-Dec-12	3540	474-366-2.5'	24-Jan-13	2420	474-366-2.5'	07-Feb-13	1302301-03	828									
				476-380-6"	05-Dec-12	10.6																
				480-341-6"	05-Dec-12	10.5																
				483-349-2'	05-Dec-12	182																
				483-385-1.5'	05-Dec-12	487	483-354-6"	24-Jan-13	<4.73													
				486-335-2'	05-Dec-12	931	486-335-2.5'	24-Jan-13	29.2													
				487-339-6"	05-Dec-12	<2.09	478-367-6"	24-Jan-13	5.16													
				491-391-6"	05-Dec-12	32																
				492-384-6"	05-Dec-12	7.76																
<table><tr><th>CHARACTERISTIC</th><th>SELECTION</th></tr><tr><td>Depth to Groundwater</td><td>50 – 100-feet</td></tr><tr><td>Wellhead Protection Area</td><td>>1,000-feet (water source) > 200-feet (private domestic water source)</td></tr><tr><td>Distance to Surface Water</td><td>>1,000 feet</td></tr></table>								CHARACTERISTIC	SELECTION	Depth to Groundwater	50 – 100-feet	Wellhead Protection Area	>1,000-feet (water source) > 200-feet (private domestic water source)	Distance to Surface Water	>1,000 feet	483-385-2.5'	24-Jan-13	266	483-385-2.5'	07-Feb-13	1302301-02	164
								CHARACTERISTIC	SELECTION													
								Depth to Groundwater	50 – 100-feet													
								Wellhead Protection Area	>1,000-feet (water source) > 200-feet (private domestic water source)													
Distance to Surface Water	>1,000 feet																					
485-326-8"	24-Jan-13	24																				
489-381-6"	24-Jan-13	<4.83																				
493-287-6"	24-Jan-13	101																				

Total Ranking Score =10

Based on these general site characteristics and associated OCD ranking criteria presented in the table above, the following hydrocarbon screening levels apply: benzene- 10 ppm, Total BTEX- 50 ppm and TPH- 1,000 ppm.

Merit Energy-Silver Oak tan Battery-1RP-11-12-2869
Lea County, NM.

Site Pictures taken on 12/05/2012



Merit Energy-Silver Oak tan Battery-1RP-11-12-2869
Lea County, NM.

Site Pictures taken on 01/23/2013



Merit Energy-Silver Oak tan Battery-1RP-11-12-2869
Lea County, NM.

