



01/14/14

## Technical Report for

Diamond Operating Inc.

Scheetz-Skim Pit

Accutest Job Number: D53893

Sampling Date: 12/28/13

### Report to:

Diamond Operating Inc.  
6666 Gunpark Drive Suite 200  
Boulder, CO 80301  
davep@flatironenergy.com

ATTN: Dave Peterson

Total number of pages in report: 39



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read "Scott Heideman".

Scott Heideman  
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

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Test results relate only to samples analyzed.

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## Sample Summary

Diamond Operating Inc.

Job No: D53893

Scheetz-Skim Pit

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
D53893-1	12/28/13	09:00 DP	12/31/13	SO Soil	SOIL AFTER EXCAVATION
D53893-1A	12/28/13	09:00 DP	12/31/13	SO Soil	SOIL AFTER EXCAVATION

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Soil samples reported on a dry weight basis unless otherwise indicated on result page.

## Summary of Hits

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Job Number: D53893  
Account: Diamond Operating Inc.  
Project: Scheetz-Skim Pit  
Collected: 12/28/13



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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### D53893-1 SOIL AFTER EXCAVATION

TPH-DRO (C10-C28)	9.35	7.1	5.3	mg/kg	SW846-8015B
Specific Conductivity	225	1.0		umhos/cm	SM 2510B-2011 MOD
pH	8.06			su	SW846 9045D

### D53893-1A SOIL AFTER EXCAVATION

Calcium	19.1	2.0		mg/l	SW846 6010C
Magnesium	1.88	1.0		mg/l	SW846 6010C
Sodium	18.5	2.0		mg/l	SW846 6010C
Sodium Adsorption Ratio <sup>a</sup>	1.08			ratio	USDA HANDBOOK 60

(a) Calculated as: (Na meq/L) / sqrt [(Ca meq/L) + (Mg meq/L)/2]



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Sample Results

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Report of Analysis

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## Report of Analysis

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Client Sample ID:	SOIL AFTER EXCAVATION			Date Sampled:	12/28/13
Lab Sample ID:	D53893-1			Date Received:	12/31/13
Matrix:	SO - Soil			Percent Solids:	93.6
Method:	SW846 8015B				
Project:	Scheetz-Skim Pit				

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB23262.D	1	01/02/14	EV	n/a	n/a	GGB1281
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	11	5.6	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	90%		60-140%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

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Client Sample ID:	SOIL AFTER EXCAVATION			Date Sampled:	12/28/13
Lab Sample ID:	D53893-1			Date Received:	12/31/13
Matrix:	SO - Soil			Percent Solids:	93.6
Method:	SW846 8021B				
Project:	Scheetz-Skim Pit				

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TB23262.D	1	01/02/14	EV	n/a	n/a	GTB1281
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.1 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	56	18	ug/kg	
108-88-3	Toluene	ND	110	56	ug/kg	
100-41-4	Ethylbenzene	ND	110	56	ug/kg	
1330-20-7	Xylenes (total)	ND	110	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	100%		60-140%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

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Client Sample ID: SOIL AFTER EXCAVATION  
 Lab Sample ID: D53893-1  
 Matrix: SO - Soil  
 Method: SW846-8015B SW846 3546  
 Project: Scheetz-Skim Pit

Date Sampled: 12/28/13  
 Date Received: 12/31/13  
 Percent Solids: 93.6

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH017114.D	1	01/03/14	JS	01/03/14	OP9190	GFH843
Run #2							

Run #	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	9.35	7.1	5.3	mg/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	58%		20-130%		

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

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Client Sample ID: SOIL AFTER EXCAVATION  
Lab Sample ID: D53893-1  
Matrix: SO - Soil  
Project: Scheetz-Skim Pit

Date Sampled: 12/28/13  
Date Received: 12/31/13  
Percent Solids: 93.6

4.1

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## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
%solids							
Solids, Percent	93.6		%	1	01/02/14	SWT	SM2540G-2011 M
prep: DEPT.OF AG, BOOK N9							
Specific Conductivity	225	1.0	umhos/cm	1	01/03/14	BF	SM 2510B-2011 MOD
pH	8.06		su	1	01/02/14 13:25	JD	SW846 9045D

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RL = Reporting Limit

## Report of Analysis

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Client Sample ID: SOIL AFTER EXCAVATION  
Lab Sample ID: D53893-1A  
Matrix: SO - Soil  
Project: Scheetz-Skim Pit

Date Sampled: 12/28/13  
Date Received: 12/31/13  
Percent Solids: 93.6

4.2

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## SAR Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	19.1	2.0	mg/l	1	01/03/14	01/03/14 KV	SW846 6010C <sup>1</sup>	SW846 3010A/M <sup>2</sup>
Magnesium	1.88	1.0	mg/l	1	01/03/14	01/03/14 KV	SW846 6010C <sup>1</sup>	SW846 3010A/M <sup>2</sup>
Sodium	18.5	2.0	mg/l	1	01/03/14	01/03/14 KV	SW846 6010C <sup>1</sup>	SW846 3010A/M <sup>2</sup>

(1) Instrument QC Batch: MA4354

(2) Prep QC Batch: MP12059

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RL = Reporting Limit

## Report of Analysis

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Client Sample ID:	SOIL AFTER EXCAVATION	Date Sampled:	12/28/13
Lab Sample ID:	D53893-1A	Date Received:	12/31/13
Matrix:	SO - Soil	Percent Solids:	93.6
Project:	Scheetz-Skim Pit		

## General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Sodium Adsorption Ratio <sup>a</sup>	1.08		ratio	1	01/03/14 15:27	KV	USDA HANDBOOK 60

(a) Calculated as:  $(\text{Na meq/L}) / \sqrt{[(\text{Ca meq/L}) + (\text{Mg meq/L})/2]}$

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RL = Reporting Limit



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## Misc. Forms

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## Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody

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PED-EX Tracking #	Boiler Order Control #
Account Quote #	Account Job # 1053893

## 5.1

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