

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-72250-1

Client Project/Site: Quarterly

Sampling Event: Quarterly

For:

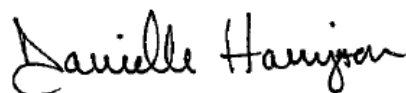
Pioneer Natural Resources USA, Inc.

5205 N. OConnor

Suite 200

Irving, Texas 75039

Attn: Katie Gillen



Authorized for release by:

8/4/2015 11:34:23 AM

Danielle Harrington, Project Manager II

(303)736-0176

[danielle.harrington@testamericainc.com](mailto:danielle.harrington@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions . . . . .	3
Case Narrative . . . . .	4
Detection Summary . . . . .	6
Method Summary . . . . .	7
Sample Summary . . . . .	8
Client Sample Results . . . . .	9
Surrogate Summary . . . . .	12
Chronicle . . . . .	13
Chain of Custody . . . . .	14



# Definitions/Glossary

Client: Pioneer Natural Resources USA, Inc.  
Project/Site: Quarterly

TestAmerica Job ID: 280-72250-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Pioneer Natural Resources USA, Inc.  
Project/Site: Quarterly

TestAmerica Job ID: 280-72250-1

**Job ID: 280-72250-1**

**Laboratory: TestAmerica Denver**

## Narrative

### CASE NARRATIVE

**Client: Pioneer Natural Resources**

**Project: Quarterly**  
**Report Number: 280-72250-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) less than TestAmerica's standard reporting limit. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

#### Receipt

The samples were received on 07/24/2015 with cooler temperatures of 4.2C.

Please note there were no sample times listed on the bottle labels.

All sample bottles were received in acceptable condition.

#### GC Volatiles, SW 846 8021B

The Method 8021B MS/MSD performed on sample from another client and/or lot was within control limits.

No anomalies were observed.

#### Total Metals, MCAWW 200.7

Continuing Calibration Verification Low(CCVL) standards associated with the Method BLank in batch 280-288205 exhibited %D values out of range, biased high, for Sodium. This is an indicator that data may be biased high. As no detectable concentrations of Sodium are present in the associated Method Blank, corrective action is deemed unnecessary.

The Method 200.7 MS/MSD performed on sample BLADE RUNNER ABOVE SPILL was within control limits.

The Method 200.7 MS/MSD performed on sample from another client and/or lot was outside control limits for Iron.

No other anomalies were observed.

#### General Chemistry, Various Methods

Due to matrix interferences, sample BLADE RUNNER BELOW SPILL was analyzed at a lesser volume for various analyses. The reporting limits have been adjusted relative to the dilution required.

The method 1664A HEM Oil and Grease required MS/MSD could not be performed for this batch, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data.

All other MS/MSDs were performed on samples from other clients and/or jobs and were in control.

The Total Dissolved Solids was performed on sample BLADE RUNNER ABOVE SPILL and was in control.

## Case Narrative

Client: Pioneer Natural Resources USA, Inc.  
Project/Site: Quarterly

TestAmerica Job ID: 280-72250-1

---

### Job ID: 280-72250-1 (Continued)

---

#### Laboratory: TestAmerica Denver (Continued)

All other Sample Duplicates were performed on samples from other clients and/or jobs and were in control.

No other anomalies were observed.

1

2

3

4

5

6

7

8

9

10

11

# Detection Summary

Client: Pioneer Natural Resources USA, Inc.  
Project/Site: Quarterly

TestAmerica Job ID: 280-72250-1

## Client Sample ID: BLADE RUNNER ABOVE SPILL

## Lab Sample ID: 280-72250-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	7.98				SU	1		Field Sampling	Total/NA
Field Conductivity	982				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	19.4				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.16		0.050		mg/L	1		200.7 Rev 4.4	Total Recoverable Total/NA
Calcium	110		0.10		mg/L	1		200.7	Total/NA
Iron	0.17		0.050		mg/L	1		200.7	Total/NA
Magnesium	31		0.10		mg/L	1		200.7	Total/NA
Manganese	0.41		0.010		mg/L	1		200.7	Total/NA
Sodium	67		2.0		mg/L	1		200.7	Total/NA
Bromide	0.41		0.20		mg/L	1		300.0	Total/NA
Chloride	66		3.0		mg/L	1		300.0	Total/NA
Sulfate	120		5.0		mg/L	1		300.0	Total/NA
Total Alkalinity	320		5.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	320		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	600		10		mg/L	1		SM 2540C	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Gravity	1.0013				No Unit	1		D1429-03	Total/NA
Specific Conductance	930		1.0		umhos/cm	1		SM 2510B	Total/NA
pH	8.14	HF	0.100		SU	1		SM 4500 H+ B	Total/NA

## Client Sample ID: TRIP BLANK

## Lab Sample ID: 280-72250-3

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

## Method Summary

Client: Pioneer Natural Resources USA, Inc.  
Project/Site: Quarterly

TestAmerica Job ID: 280-72250-1

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	TAL DEN
200.7	ICP Total Metals by 200.7	EPA	TAL DEN
200.7 Rev 4.4	Metals (ICP)	EPA	TAL DEN
1664A	HEM and SGT-HEM	1664A	TAL DEN
300.0	Anions by IC	EPA	TAL DEN
D1429-03	Specific Gravity	ASTM	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2510B	Conductivity, Specific Conductance	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
SM 4500 H+ B	pH	SM	TAL DEN
SM 4500 S2 D	Sulfide, Total	SM	TAL DEN
Field Sampling	Field Sampling	EPA	TAL DEN

### Protocol References:

1664A = EPA-821-98-002

ASTM = ASTM International

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

## Sample Summary

Client: Pioneer Natural Resources USA, Inc.  
Project/Site: Quarterly

TestAmerica Job ID: 280-72250-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-72250-1	BLADE RUNNER ABOVE SPILL	Water	07/23/15 12:25	07/24/15 09:50
280-72250-3	TRIP BLANK	Water	07/23/15 00:00	07/24/15 09:50



# Client Sample Results

Client: Pioneer Natural Resources USA, Inc.  
Project/Site: Quarterly

TestAmerica Job ID: 280-72250-1

**Client Sample ID: BLADE RUNNER ABOVE SPILL**

**Lab Sample ID: 280-72250-1**

**Date Collected: 07/23/15 12:25**

**Matrix: Water**

**Date Received: 07/24/15 09:50**

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/29/15 06:04	1
Ethylbenzene	ND		0.50		ug/L			07/29/15 06:04	1
Toluene	ND		0.50		ug/L			07/29/15 06:04	1
Xylenes, Total	ND		0.50		ug/L			07/29/15 06:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	90		85 - 115					07/29/15 06:04	1

## Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.16		0.050		mg/L		07/27/15 15:20	07/28/15 13:57	1

## Method: 200.7 - ICP Total Metals by 200.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050		mg/L		07/27/15 15:20	07/28/15 13:23	1
Boron	ND		0.050		mg/L		07/27/15 15:20	07/28/15 13:23	1
Calcium	110		0.10		mg/L		07/30/15 14:45	07/31/15 00:06	1
Chromium	ND		0.010		mg/L		07/27/15 15:20	07/28/15 13:23	1
Copper	ND		0.010		mg/L		07/27/15 15:20	07/28/15 13:23	1
Iron	0.17		0.050		mg/L		07/27/15 15:20	07/28/15 13:23	1
Potassium	ND		5.0		mg/L		07/27/15 15:20	07/28/15 13:23	1
Magnesium	31		0.10		mg/L		07/27/15 15:20	07/28/15 13:23	1
Manganese	0.41		0.010		mg/L		07/27/15 15:20	07/28/15 13:23	1
Sodium	67		2.0		mg/L		07/27/15 15:20	07/28/15 13:23	1
Selenium	ND		0.015		mg/L		07/27/15 15:20	07/28/15 13:23	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.9		mg/L		07/28/15 08:10	07/28/15 12:34	1
Bromide	0.41		0.20		mg/L			07/27/15 21:29	1
Chloride	66		3.0		mg/L			07/27/15 21:29	1
Sulfate	120		5.0		mg/L			07/27/15 21:29	1
Total Alkalinity	320		5.0		mg/L			07/27/15 19:05	1
Bicarbonate Alkalinity as CaCO3	320		5.0		mg/L			07/27/15 19:05	1
Carbonate Alkalinity as CaCO3	ND		5.0		mg/L			07/27/15 19:05	1
Hydroxide Alkalinity	ND		5.0		mg/L			07/27/15 19:05	1
Total Dissolved Solids	600		10		mg/L			07/29/15 10:14	1
Total Suspended Solids	ND		4.0		mg/L			07/30/15 13:29	1
Sulfide	ND		0.050		mg/L			07/25/15 08:45	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Gravity	1.0013				No Unit			07/28/15 19:06	1
Specific Conductance	930		1.0		umhos/cm			07/25/15 13:32	1
pH	8.14	HF	0.100		SU			07/25/15 12:36	1

## Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.98				SU			07/23/15 12:25	1
Field Conductivity	982				umhos/cm			07/23/15 12:25	1
Field Temperature	19.4				Degrees C			07/23/15 12:25	1

TestAmerica Denver

# Client Sample Results

Client: Pioneer Natural Resources USA, Inc.  
Project/Site: Quarterly

TestAmerica Job ID: 280-72250-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 280-72250-3**

**Date Collected: 07/23/15 00:00**

**Matrix: Water**

**Date Received: 07/24/15 09:50**

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/29/15 10:01	1
Ethylbenzene	ND		0.50		ug/L			07/29/15 10:01	1
Toluene	ND		0.50		ug/L			07/29/15 10:01	1
Xylenes, Total	ND		0.50		ug/L			07/29/15 10:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	85		85 - 115					07/29/15 10:01	1

# Surrogate Summary

Client: Pioneer Natural Resources USA, Inc.  
Project/Site: Quarterly

TestAmerica Job ID: 280-72250-1

## Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFT1 (85-115)
280-72178-G-1 MS	Matrix Spike	94
280-72178-G-1 MSD	Matrix Spike Duplicate	95
280-72250-1	BLADE RUNNER ABOVE SPILL	90
280-72250-3	TRIP BLANK	85
LCS 280-288143/27	Lab Control Sample	96
LCSD 280-288143/28	Lab Control Sample Dup	97
MB 280-288143/26	Method Blank	90

### Surrogate Legend

TFT = a,a,a-Trifluorotoluene

# Lab Chronicle

Client: Pioneer Natural Resources USA, Inc.  
Project/Site: Quarterly

TestAmerica Job ID: 280-72250-1

**Client Sample ID: BLADE RUNNER ABOVE SPILL**

**Date Collected: 07/23/15 12:25**

**Date Received: 07/24/15 09:50**

**Lab Sample ID: 280-72250-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	288143	07/29/15 06:04	CDC	TAL DEN
Total/NA	Prep	200.7			50 mL	50 mL	287831	07/27/15 15:20	SEJ	TAL DEN
Total/NA	Analysis	200.7		1	50 mL	50 mL	288205	07/28/15 13:23	CRR	TAL DEN
Total/NA	Prep	200.7			50 mL	50 mL	288428	07/30/15 14:45	SEJ	TAL DEN
Total/NA	Analysis	200.7		1	50 mL	50 mL	288594	07/31/15 00:06	SJS	TAL DEN
Total Recoverable	Prep	200.7			50 mL	50 mL	287809	07/27/15 15:20	SEJ	TAL DEN
Total Recoverable	Analysis	200.7 Rev 4.4		1	50 mL	50 mL	288205	07/28/15 13:57	CRR	TAL DEN
Total/NA	Prep	1664A			1026 mL	1000 mL	288015	07/28/15 08:10	JML	TAL DEN
Total/NA	Analysis	1664A		1	1026 mL	1000 mL	288080	07/28/15 12:34	JML	TAL DEN
Total/NA	Analysis	300.0		1	5 mL	5 mL	287898	07/27/15 21:29	AFB	TAL DEN
Total/NA	Analysis	D1429-03		1			288141	07/28/15 19:06	MAS	TAL DEN
Total/NA	Analysis	SM 2320B		1			288014	07/27/15 19:05	CCJ	TAL DEN
Total/NA	Analysis	SM 2510B		1			287745	07/25/15 13:32	RSM	TAL DEN
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	288251	07/29/15 10:14	SVC	TAL DEN
Total/NA	Analysis	SM 2540D		1	250 mL	250 mL	288449	07/30/15 13:29	CML	TAL DEN
Total/NA	Analysis	SM 4500 H+ B		1			287742	07/25/15 12:36	MAS	TAL DEN
Total/NA	Analysis	SM 4500 S2 D		1	10.0 mL	10.0 mL	287731	07/25/15 08:45	AJS	TAL DEN
Total/NA	Analysis	Field Sampling		1			287959	07/23/15 12:25	UP	TAL DEN

**Client Sample ID: TRIP BLANK**

**Date Collected: 07/23/15 00:00**

**Date Received: 07/24/15 09:50**

**Lab Sample ID: 280-72250-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	288143	07/29/15 10:01	CDC	TAL DEN

## Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TestAmerica Denver

TestAmerica Denver  
4955 Yarrow Street  
Arvada, CO 80002  
Phone (303) 736-0100 Fax (303) 431-7171

## Chain of Custody



TestAmerica  
THE LEADER IN ENVIRONMENTAL TESTING

280-72250 Chain of Custody

<b>Client Information</b>		Lab PM:		Harrington, Danielle N.	
Client Contact:		Phone:		E-Mail:	
Bill Ward				danielle.harrington@testamericainc.com	
Company:		Norwest Corporation			
Address:		950 South Cherry Street Suite 800			
City:		Denver			
State, Zip:		CO, 80246			
Phone:					
Email:		wward@norwestcorp.com			
Project Name:		Pioneer Natural Resources			
Site:		Colorado			
Due Date Requested:		TAT Requested (days):		Analysis Requested	
		Rouane			
PO #:		WO #:			
Project #:		28001998			
SSOW #:					
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=oil, A=air)
Blackburn Lab on Spec 11	7/23/15	12:25	G	W	
Rabbit-bush Federal 44-19	↓	14:20	G	W	
trip black				W	
Possible Hazard Identification		Polson B		Unknown	
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Radiological					
Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit Relinquished by:		Date:		Time:	
Relinquished by:		7/23/15 11:00		Company: JBL West	
Relinquished by:				Company:	
Relinquished by:				Company:	
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	
Δ Yes Δ No				4.1 to 1.1 IR-5 SW 7/24/15	

