

Analytical Report 416075

for

Yates Petroleum Corporation

Project Manager: Amanda Trujillo

Archimedes SWD

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NMOCD ARTESIA

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12-MAY-11

Project Manager: **Amanda Trujillo**
Yates Petroleum Corporation
105 South Fourth St.
Artesia, NM 88210

Reference: XENCO Report No: **416075**
Archimedes SWD
Project Address:

Amanda Trujillo:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 416075. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 416075 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II

Odessa Laboratory Manager

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Sample Cross Reference 416075



Yates Petroleum Corporation, Artesia, NM
Archimedes SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Archimedes 1'	S	Apr-28-11 09:00	1 - 1.5 ft	416075-001
Archimedes 2'	S	Apr-28-11 09:00	2 - 2.5 ft	416075-002
Archimedes 3'	S	Apr-28-11 09:00	3 - 3.5 ft	416075-003



CASE NARRATIVE

Client Name: Yates Petroleum Corporation
Project Name: Archimedes SWD



Project ID:
Work Order Number: 416075

Report Date: 12-MAY-11
Date Received: 05/10/2011

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None



Certificate of Analysis Summary 416075

Yates Petroleum Corporation, Artesia, NM

Project Name: Archimedes SWD



Project Id:

Contact: Amanda Trujillo

Date Received in Lab: Tue May-10-11 12:33 pm

Report Date: 12-MAY-11

Project Location:

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	416075-001	416075-002	416075-003			
	<i>Field Id:</i>	Archimedes 1'	Archimedes 2'	Archimedes 3'			
	<i>Depth:</i>	1-1.5 ft	2-2.5 ft	3-3.5 ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Apr-28-11 09:00	Apr-28-11 09:00	Apr-28-11 09:00			
Anions by E300	<i>Extracted:</i>						
	<i>Analyzed:</i>	May-10-11 22:04	May-10-11 22:04	May-10-11 22:04			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		182 9.61	159 9.67	133 11.2			
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	May-11-11 17:00	May-11-11 17:00	May-11-11 17:00			
	<i>Units/RL:</i>	% RL	% RL	% RL			
Percent Moisture		12.6 1.00	13.1 1.00	24.7 1.00			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II
Odessa Laboratory Manager



Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- LOD** Limit of Detection
- LOQ** Limit of Quantitation
- DL** Method Detection Limit
- * Outside XENCO's scope of NELAC Accreditation.**

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842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



BS / BSD Recoveries



Project Name: Archimedes SWD

Work Order #: 416075

Analyst: LATCOR

Date Prepared: 05/10/2011

Project ID:

Date Analyzed: 05/10/2011

Lab Batch ID: 855715

Sample: 855715-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.420	10.0	9.52	95	10.0	9.77	98	3	75-125	20	

Relative Percent Difference RPD = $200 * [(C-F)/(C+F)]$

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS Recoveries



Project Name: Archimedes SWD

Work Order #: 416075

Lab Batch #: 855715

Project ID:

Date Analyzed: 05/10/2011

Date Prepared: 05/10/2011

Analyst: LATCOR

QC- Sample ID: 415985-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	5300	4500	9070	84	75-125	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Relative Percent Difference [E] = 200*(C-A)/(C+B)

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



Sample Duplicate Recovery



Project Name: Archimedes SWD

Work Order #: 416075

Lab Batch #: 855715
Date Analyzed: 05/10/2011 22:04
QC- Sample ID: 415985-001 D
Reporting Units: mg/kg

Date Prepared: 05/10/2011
Batch #: 1

Project ID:
Analyst: LATCOR
Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	5300	5460	3	20	

Lab Batch #: 855689
Date Analyzed: 05/11/2011 17:00
QC- Sample ID: 416071-001 D
Reporting Units: %

Date Prepared: 05/11/2011
Batch #: 1

Analyst: WRU
Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.3	11.5	2	20	

Spike Relative Difference RPD $200 * |(B-A)/(B+A)|$
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit



XENCO Laboratories
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Document Title: Sample Receipt Checklist
 Document No.: SYS-SRC
 Revision/Date: No. 01, 5/27/2010
 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Yates Petroleum
 Date/Time: 5-10-11 12:33
 Lab ID #: 415987
 Initials: AZ

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	<input checked="" type="radio"/> Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<input checked="" type="radio"/> N/A	
4. Chain of Custody present?	<input checked="" type="radio"/> Yes	No		
5. Sample instructions complete on chain of custody?	<input checked="" type="radio"/> Yes	No		
6. Any missing / extra samples?	Yes	<input checked="" type="radio"/> No		
7. Chain of custody signed when relinquished / received?	<input checked="" type="radio"/> Yes	No		
8. Chain of custody agrees with sample label(s)?	<input checked="" type="radio"/> Yes	No		
9. Container labels legible and intact?	<input checked="" type="radio"/> Yes	No		
10. Sample matrix / properties agree with chain of custody?	<input checked="" type="radio"/> Yes	No		
11. Samples in proper container / bottle?	<input checked="" type="radio"/> Yes	No		
12. Samples properly preserved?	<input checked="" type="radio"/> Yes	No	N/A	
13. Sample container intact?	<input checked="" type="radio"/> Yes	No		
14. Sufficient sample amount for indicated test(s)?	<input checked="" type="radio"/> Yes	No		
15. All samples received within sufficient hold time?	<input checked="" type="radio"/> Yes	No		
16. Subcontract of sample(s)?	Yes	No	<input checked="" type="radio"/> N/A	
17. VOC sample have zero head space?	<input checked="" type="radio"/> Yes	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 7.6 °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: _____ Contacted by: _____ Date/Time: _____

Regarding: _____

Corrective Action Taken: _____

- Check all that apply:
- Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
 - Initial and Backup Temperature confirm out of temperature conditions
 - Client understands and would like to proceed with analysis