FORM 27 Rev 6/99

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

FOR OGCC USE ONLY
REM 9806
Document 2526805
Date 08/24/2016

OGCC Employee
☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV
Tracking No:

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☑ Other (describe): drill cuttings

OGCC Operator Number: 10516
Name of Operator: LINN Operating, Inc.
Address: 1999 Broadway, Suite 3700
City: Denver State: CO Zip: 80202

Contact Name and Telephone:
Bryan Burns
No: 303-999-4245
Fax: 303-999-4345

API Number: 05-045-13686 County: Garfield
Facility Name: Latham CD-32 596 Facility Number: 335842
Well Name: Latham #32-21D Well Number: 32-21D
Location: (QtrQtr, Sec, Twp, Rng, Meridian): NW1/4 NW1/4 Sec 32 T5S R96W Latitude: 39.576087 Longitude: 108.197706

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): drill cuttings

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☑ Y ☐ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): rangeland and natural gas production

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan:

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Little Creek 750 feet east

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
☑ Soils	drill cuttings contained within soil berm	laboratory testing
☐ Vegetation		
☐ Groundwater		
☐ Surface Water		

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Drill cuttings were excavated and tested for Table 910-1 parameters. The most recent testing showed all parameters except arsenic below the standards. These cuttings are currently stockpiled on site.

Describe how source is to be removed:

Drill cuttings were excavated from the drilling pit and stockpiled on the well pad and enclosed by a soil berm.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Drill cuttings were landfarmed on site within a bermed area. Background soil samples were also collected and analyzed for arsenic in the vicinity of the pit to characterize natural soil arsenic concentrations.

Submit Page 2 with Page 1

FORM 27 Rev 6/99

Page 2

State of Colorado
Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801, Denver, Colorado 80203
(303)894-2100 Fax:(303)894-2109

Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

REMEDIATION WORKPLAN (Cont.)

OGCC Employee:

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):
There are no impacts to groundwater.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.
The site is currently used for water storage. After use of the water storage pit is completed, and background levels of arsenic in the drill cuttings are demonstrated, drill cuttings will be blended with non-contaminated on-site materails and buried in the pit and compacted. All cuttings with SAR greater than 12 will be buried at least three feet below the reclaimed ground surface. The remainder of the pit will be backfilled using native rock and soil, regraded to conform to the surrounding ground surface, and reseeded using an approved seed mix. Noxious weeds will be controlled as necessary using approved methods.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☑ Y ☐ N If yes, describe:
During closure of the water storage pit, samples of the pit bottom materials will be collected and analyzed for the Table 910-1 parameters to evaluate the complance with the standards.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):
The remediated drill cuttings and water storage pit bottom materials will be blended with on-site materials and buried in the pit as described above.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 5/27/2011 Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: 5/27/2011 Anticipated Completion Date: 8/1/2015 Actual Completion Date: _____

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Bryan Burns Signed: _____
Title: Environmental, Health, and Safety Representative Date: 9/15/14

OGCC Approved: Carlos A Lujan, Ph.D. Title: _____ Date: _____

Digitally signed by Carlos A Lujan, Ph.D.
DN: cn=Carlos A Lujan, Ph.D., o=Colorado Oil and Gas Conservation Commission (COGCC), ou=Environmental NW Region, email=carlos.lujan@state.co.us, c=US
Date: 2016.08.25 12:39:48 -06'00'

FORM 4 Rev 04/13

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80205 Phone: (303) 894-2100 Fax: (303) 894-2109

DE	ET	OE	ES

Document Number:

SUNDRY NOTICE

Submit a signed original. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full in Comments or provide as an attachment. Identify Well by API Number; identify Oil and Gas Location by Location ID Number; identify other Facility by Facility ID Number.

OGCC Operator Number: 10516 Contact Name Bryan Burns

Name of Operator: LINN Operating, Inc. Phone: 303 999-4245

Address: 1999 Broadway, Suite 3700 Fax: 303 999-4345

City: Denver State: CO Zip: 80202 Email: BBurns@linnenergy.com

Complete the Attachment Checklist

OP OGCC

API Number : 05- 045 13686 OGCC Facility ID Number: 335842

Well/Facility Name: Latham CD-32 596 Well/Facility Number: Latham #32-21D

Location QtrQtr: NW NW Section: 32 Township: 5S Range: 96W Meridian:

County: Garfield Field Name: Garden Gulch

Federal, Indian or State Lease Number:

Survey Plat		
Directional Survey		
Srfc Eqpmt Diagram		
Technical Info Page		
Other		

CHANGE OF LOCATION OR AS BUILT GPS REPORT

☐ Change of Location * ☐ As-Built GPS Location Report ☐ As-Built GPS Location Report with Survey

* Well location change requires new plat. A substantive surface location change may require new Form 2A.

SURFACE LOCATION GPS DATA Data must be provided for Change of Surface Location and As Built Reports.

Latitude PDOP Reading Date of Measurement

Longitude GPS Instrument Operator's Name

LOCATION CHANGE **(all measurements in Feet)**

Well will be: (Vertical, Directional, Horizontal)

	FNL/FSL		FEL/FWL		
Change of **Surface** Footage **From** Exterior Section Lines:					
Change of **Surface** Footage **To** Exterior Section Lines:					

Current **Surface** Location **From** QtrQtr Sec Twp Range Meridian

New **Surface** Location **To** QtrQtr Sec Twp Range Meridian

Change of **Top of Productive Zone** Footage **From** Exterior Section Lines:				
Change of **Top of Productive Zone** Footage **To** Exterior Section Lines:				**

Current **Top of Productive Zone** Location **From** Sec Twp Range

New **Top of Productive Zone** Location **To** Sec Twp Range

Change of **Bottomhole** Footage **From** Exterior Section Lines:				
Change of **Bottomhole** Footage **To** Exterior Section Lines:				**

Current **Bottomhole** Location Sec Twp Range ** attach deviated drilling plan

New **Bottomhole** Location Sec Twp Range

Is location in High Density Area?

Distance, in feet, to nearest building , public road: , above ground utility: , railroad: ,

property line: , lease line: , well in same formation:

Ground Elevation feet Surface owner consultation date

CHANGE OR ADD OBJECTIVE FORMATION AND/OR SPACING UNIT

Objective Formation	Formation Code	Spacing Order Number	Unit Acreage	Unit Configuration

OTHER CHANGES

☐ **REMOVE FROM SURFACE BOND** **Signed surface use agreement is a required attachment**

☐ **CHANGE OF WELL, FACILITY OR OIL & GAS LOCATION NAME OR NUMBER**

From: Name _____ Number _____ Effective Date: _____

To: Name _____ Number _____

☐ **ABANDON PERMIT: Permit can only be abandoned if the permitted operation has NOT been conducted. Field inspection will be conducted to verify site status.**

☐ WELL:Abandon Application for Permit-to-Drill (Form2) – Well API Number _____ has not been drilled.

☐ PIT: Abandon Earthen Pit Permit (Form 15) – COGCC Pit Facility ID Number _____ has not been constructed (Permitted and constructed pit requires closure per Rule 905)

☐ CENTRALIZED E&P WASTE MANAGEMENT FACILITY: Abandon Centralized E&P Waste Management Facility Permit (Form 28) – Facility ID Number _____ has not been constructed (Constructed facility requires closure per Rule 908)

OIL & GAS LOCATION ID Number: _____

☐ Abandon Oil & Gas Location Assessment (Form 2A) – Location has not been constructed and site will not be used in the future.

☐ Keep Oil & Gas Location Assessment (Form 2A) active until expiration date. This site will be used in the future.

Surface disturbance from Oil and Gas Operations must be reclaimed per Rule 1003 and Rule 1004.

☐ **REQUEST FOR CONFIDENTIAL STATUS**

☐ **DIGITAL WELL LOG UPLOAD**

☐ **DOCUMENTS SUBMITTED** Purpose of Submission: _____

RECLAMATION

INTERIM RECLAMATION

☐ Interim Reclamation will commence approximately _____

☐ Interim reclamation complete, site ready for inspection.
Per Rule 1003.e.(3) operator shall submit Sundry Notice reporting interim reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage. Describe interim reclamation procedure in Comments below or provide as an attachment and attach required location photographs.
Field inspection will be conducted to document Rule 1003.e. compliance

FINAL RECLAMATION

☐ Final Reclamation will commence approximately _____

☐ Final reclamation complete, site ready for inspection. Per Rule 1004.c.(4) operator shall submit Sundry Notice reporting final reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage. Describe final reclamation procedure in Comments below or provide as an attachment.
Field inspection will be conducted to document Rule 1004.c. compliance

Comments:

ENGINEERING AND ENVIRONMENTAL WORK

☐ NOTICE OF CONTINUED TEMPORARILY ABANDONED STATUS

Indicate why the well is temporarily abandoned and describe future plans for utilization in the COMMENTS box below or provide as an attachment, as required by Rule 319.b.(3).

Date well temporarily abandoned _____ Has Production Equipment been removed from site? _____

Mechanical Integrity Test (MIT) required if shut in longer than 2 years. Date of last MIT _____

☐ SPUD DATE: _____

TECHNICAL ENGINEERING AND ENVIRONMENTAL WORK

Details of work must be described in full in the COMMENTS below or provided as an attachment.

☐ NOTICE OF INTENT Approximate Start Date _____

☐ REPORT OF WORK DONE Date Work Completed _____

☐ Intent to Recomplete (Form 2 also required)	☐ Request to Vent or Flare	☐ E&P Waste Mangement Plan
☐ Change Drilling Plan	☐ Repair Well	☐ Beneficial Reuse of E&P Waste
☐ Gross Interval Change	☐ Rule 502 variance requested. Must provide detailed info regarding request.	
☑ Other Background arsenic values	☐ Status Update/Change of Remediation Plans for Spills and Releases	

COMMENTS:

The operator requests a variance from the Table 910-1 standard for arsenic in soil based on the following:

The composite sample collected from the stockpiled cuttings had an arsenic concentration of 6.8 mg/kg. Three background grab samples were collected from undisturbed areas near the I-02 well pad on August 13, 2011 and had arsenic concentrations of 6.1 mg/kg, 9.4 mg/kg, and 22.0 mg/kg (see attached map). Based on these results and the methodology recommended by the COGCC staff for establishing background arsenic levels, the allowable concentration of arsenic in soil at this site is 24.2 mg/kg (maximum plus 10%).

Since the arsenic concentrations in the remediated cuttings pile are below the allowable background level, the operator proposes to bury this material in the reserve pit and proceed with interim reclamation of this site.

CASING AND CEMENTING CHANGES

Casing Type	Size	Of	/	Hole	Size	Of	/	Casing	Wt/Ft	Csg/LinTop	Setting Depth	Sacks of Cement	Cement Bottom	Cement Top

H2S REPORTING

Data Fields in this section are intended to document Sample and Location Data associated with the collection of a Gas Sample that is submitted for Laboratory Analysis.

Gas Analysis Report must be attached.

H2S Concentration: _____ in ppm (parts per million) Date of Measurement or Sample Collection _____

Description of Sample Point:

Absolute Open Flow Potential _____ in CFPD (cubic feet per day)

Description of Release Potential and Duration (If flow is not open to the atmosphere, identify the duration in which the container or pipeline would likely be opened for servicing operations.):

Distance to nearest occupied residence, school, church, park, school bus stop, place of business, or other areas where the public could reasonably be expected to frequent: _____

Distance to nearest Federal, State, County, or municipal road or highway owned and principally maintained for public use: _____

COMMENTS:

BMP

Type	Comment

GROUND WATER SAMPLING

Uses of Ground Water Sampling Section

Request an Exception to Ground Water Sampling Requirements in Greater Wattenberg Area Rule 318A.e(4) or in Statewide Rule 609.c. Request a Previously Sampled Water Source in the COGIS database be used to meet sampling requirements as described in Rule 609.d.(3).

NOTE: If this Sundry Notice is being submitted to request a Ground Water Sampling Exception it cannot be used for any other purpose except requesting the use of a Previously Sampled Water Source in the COGIS database.

☐ Request an Exception to Ground Water Sampling Requirements per Greater Wattenberg Area Rule 318A.e(4):There are no Available Water Sources located within the governmental quarter section or within a previously unsampled governmental quarter section within a ½-mile radius of this proposed Oil and Gas Well, Multi-Well Site, or Dedicated Injection Well.

☐ Request an Exception to Ground Water Sampling Requirements per Statewide Rule 609.c.

_____ Number of Water Sources located within one-half (1/2) mile of a proposed Oil and Gas Well, Multi-Well Site, or Dedicated Injection Well.

_____ Number of Water Source Exceptions requested per Rule 609.c.

_____ Number of Water Sources determined to be unsuitable. **The condition of these Water Sources MUST be documented in the comments below or in an attachment.**

_____ Number of Water Sources suitable for testing whose owners refused to grant access despite an operator's reasonable good faith efforts to obtain consent to conduct sampling.
The reasonable good faith efforts used to obtain access from the owners of these Water Sources MUST be documented in the comments below or in an attachment.

☐ Request a Previously Sampled Water Source in the COGIS database be used to meet sampling requirements as described in Rule 609.d(3)

_____ Type of Sample Substitution Request

Enter Sample ID Number from COGIS Maps for each Previous Water Sample:

Sample ID	Facility ID	Sample Date	Sample Purpose

COMMENTS

Operator Comments:

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: Print Name: Bryan Burns

Title: Environmental, Health, and Safety Representative Email: BBurns@linnenergy.com Date: 9/15/16

Based on the information provided herein, this Sundry Notice (Form 4) complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: Carlos A Lujan, Ph.D. Date:

Digitally signed by Carlos A Lujan, Ph.D.
DN: cn=Carlos A Lujan, Ph.D., o=Colorado Oil and Gas Conservation Commission (COGCC), ou=Environmental NW Region, email=carlos.lujan@state.co.us, c=US
Date: 2016.08.24 12:26:57 -06'00'

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Dave Nicholson
Berry Petroleum Company - Denver, CO
1999 Broadway, Suite 3700
Denver, CO 80202

Report Summary

Thursday August 18, 2011

Report Number: L531307
Samples Received: 08/16/11
Client Project:

Description: Berry Pit Reclamation

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dave Nicholson
Berry Petroleum Company - Denver, C
1999 Broadway, Suite 3700
Denver, CO 80202

August 18, 2011

ESC Sample # : L531307-07

Date Received : August 16, 2011
Description : Berry Pit Reclamation

Sample ID : CD32-1 4-8IN

Site ID :

Project # :

Collected By :
Collection Date : 08/13/11 09:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	6.1	1.0	mg/kg	6010B	08/18/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 08/18/11 11:10 Printed: 08/18/11 11:10

ESC
LAB SCIENCES
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dave Nicholson
Berry Petroleum Company - Denver, C
1999 Broadway, Suite 3700
Denver, CO 80202

August 18, 2011

ESC Sample # : L531307-08

Date Received : August 16, 2011
Description : Berry Pit Reclamation

Sample ID : CD32-2 2-6IN

Site ID :

Project # :

Collected By :
Collection Date : 08/13/11 09:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	9.4	1.0	mg/kg	6010B	08/18/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 08/18/11 11:10 Printed: 08/18/11 11:10

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dave Nicholson
Berry Petroleum Company - Denver, C
1999 Broadway, Suite 3700
Denver, CO 80202

August 18, 2011

ESC Sample # : L531307-09

Date Received : August 16, 2011
Description : Berry Pit Reclamation

Sample ID : CD32-3 6-10IN

Site ID :

Project # :

Collected By :
Collection Date : 08/13/11 09:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	22.	1.0	mg/kg	6010B	08/18/11	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 08/18/11 11:10 Printed: 08/18/11 11:10

Summary of Remarks For Samples Printed
08/18/11 at 11:11:03

TSR Signing Reports: 134
R5 - Desired TAT

Always log As, Cd, Cr, Cu, Ni, Pb, Se, Ag, & Zn GW by 6020 Log all PAHs by 8270-SIM

Sample: L531307-01 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-02 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-03 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-04 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-05 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-06 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-07 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-08 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-09 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-10 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-11 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-12 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-13 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-14 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-15 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-16 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-17 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-18 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-19 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-20 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-21 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-22 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-23 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-24 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-25 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-26 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-27 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-28 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-29 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-30 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-31 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-32 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-33 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-34 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-35 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-36 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-37 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-38 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

Sample: L531307-39 Account: BERPETDCO Received: 08/16/11 09:00 Due Date: 08/23/11 00:00 RPT Date: 08/18/11 11:10

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Berry Petroleum Company - Denver, CO
Dave Nicholson
1999 Broadway, Suite 3700

Denver, CO 80202

Quality Assurance Report
Level II

L531307

August 18, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Arsenic	< 1	mg/kg			WG550835	08/17/11 22:40
Arsenic	< 1	mg/kg			WG550843	08/17/11 20:19
Arsenic	< 1	mg/kg			WG550738	08/17/11 23:07

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Arsenic	mg/kg	9.70	11.0	12.4	20	L531307-25	WG550835
Arsenic	mg/kg	25.0	24.0	3.28	20	L531307-39	WG550843
Arsenic	mg/kg	3.30	3.90	15.8	20	L531273-04	WG550738

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Arsenic	mg/kg	192	188.	97.9	78.6-120.8	WG550835
Arsenic	mg/kg	92.6	93.6	101.	82.9-117	WG550843
Arsenic	mg/kg	192	202.	105.	78.6-120.8	WG550738

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Arsenic	mg/kg	51.6	11.0	50	81.2	75-125	L531307-25	WG550835
Arsenic	mg/kg	84.0	24.0	10	120.	75-125	L531307-39	WG550843
Arsenic	mg/kg	52.8	3.90	50	97.8	75-125	L531273-04	WG550738

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Arsenic	mg/kg	49.2	51.6	76.4	75-125	4.76	20	L531307-25	WG550835
Arsenic	mg/kg	79.2	84.0	110.	75-125	5.88	20	L531307-39	WG550843
Arsenic	mg/kg	51.2	52.8	94.6	75-125	3.08	20	L531273-04	WG550738

Batch number /Run number / Sample number cross reference

WG550835: R1818292: L531307-07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
WG550843: R1818293: L531307-26 27 28 29 30 31 32 33 34 35 36 37 38 39
WG550738: R1818474: L531307-01 02 03 04 05 06
* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Berry Petroleum Company - Denver, CO
Dave Nicholson
1999 Broadway, Suite 3700

Denver, CO 80202

Quality Assurance Report
Level II

L531307

August 18, 2011

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Dave Nicholson
Berry Petroleum Company - Denver, CO
1999 Broadway, Suite 3700
Denver, CO 80202

Report Summary

Tuesday June 07, 2011

Report Number: L518291
Samples Received: 05/28/11
Client Project:

Description: Berry Pit Permitting

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Mark W. Beasley , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dave Nicholson
Berry Petroleum Company - Denver, C
1999 Broadway, Suite 3700
Denver, CO 80202

June 07, 2011

ESC Sample # : L518291-05

Date Received : May 28, 2011
Description : Berry Pit Permitting

Site ID :

Sample ID : CD-32 PILE 6-12 IN

Project # :

Collected By : DK Nicholson
Collection Date : 05/27/11 11:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	06/04/11	1
ORP	30.		mV	2580	06/02/11	1
pH	7.8		su	9045D	06/02/11	1
Sodium Adsorption Ratio	3.7			Calc.	06/05/11	1
Specific Conductance	560		umhos/cm	9050AMod	06/06/11	1
Mercury	0.020	0.020	mg/kg	7471	05/30/11	1
Arsenic	6.8	1.0	mg/kg	6010B	05/30/11	1
Barium	390	0.25	mg/kg	6010B	05/30/11	1
Boron	BDL	10.	mg/kg	6010B	05/30/11	1
Cadmium	1.5	0.25	mg/kg	6010B	05/30/11	1
Chromium	23.	0.50	mg/kg	6010B	05/30/11	1
Copper	23.	1.0	mg/kg	6010B	05/30/11	1
Lead	14.	0.25	mg/kg	6010B	05/30/11	1
Nickel	16.	1.0	mg/kg	6010B	05/30/11	1
Selenium	1.0	1.0	mg/kg	6010B	05/30/11	1
Silver	BDL	0.50	mg/kg	6010B	05/30/11	1
Zinc	50.	1.5	mg/kg	6010B	05/30/11	1
Benzene	BDL	0.0025	mg/kg	8021/8015	05/29/11	5
Toluene	BDL	0.025	mg/kg	8021/8015	05/29/11	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	05/29/11	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	05/29/11	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	05/29/11	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	103.		% Rec.	8021/8015	05/29/11	5
a,a,a-Trifluorotoluene(PID)	106.		% Rec.	8021/8015	05/29/11	5
TPH (GC/FID) High Fraction	40.	20.	mg/kg	3546/DRO	06/02/11	5
Surrogate recovery(%)						
o-Terphenyl	111.		% Rec.	3546/DRO	06/02/11	5
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.16	mg/kg	8270C	06/03/11	5
Acenaphthene	BDL	0.16	mg/kg	8270C	06/03/11	5
Acenaphthylene	BDL	0.16	mg/kg	8270C	06/03/11	5
Benzo(a)anthracene	BDL	0.16	mg/kg	8270C	06/03/11	5
Benzo(a)pyrene	BDL	0.16	mg/kg	8270C	06/03/11	5
Benzo(b)fluoranthene	BDL	0.16	mg/kg	8270C	06/03/11	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L518291-05 (PAH BY GCMS) - Diluted due to matrix
L518291-05 (PH) - 7.8@20.4C

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dave Nicholson
Berry Petroleum Company - Denver, C
1999 Broadway, Suite 3700
Denver, CO 80202

June 07, 2011

ESC Sample # : L518291-05

Date Received : May 28, 2011
Description : Berry Pit Permitting

Site ID :

Sample ID : CD-32 PILE 6-12 IN

Project # :

Collected By : DK Nicholson
Collection Date : 05/27/11 11:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(g,h,i)perylene	BDL	0.16	mg/kg	8270C	06/03/11	5
Benzo(k)fluoranthene	BDL	0.16	mg/kg	8270C	06/03/11	5
Chrysene	BDL	0.16	mg/kg	8270C	06/03/11	5
Dibenz(a,h)anthracene	BDL	0.16	mg/kg	8270C	06/03/11	5
Fluoranthene	BDL	0.16	mg/kg	8270C	06/03/11	5
Fluorene	BDL	0.16	mg/kg	8270C	06/03/11	5
Indeno(1,2,3-cd)pyrene	BDL	0.16	mg/kg	8270C	06/03/11	5
Naphthalene	BDL	0.16	mg/kg	8270C	06/03/11	5
Phenanthrene	BDL	0.16	mg/kg	8270C	06/03/11	5
Pyrene	BDL	0.16	mg/kg	8270C	06/03/11	5
Surrogate Recovery						
Nitrobenzene-d5	66.4		% Rec.	8270C	06/03/11	5
2-Fluorobiphenyl	63.7		% Rec.	8270C	06/03/11	5
p-Terphenyl-d14	65.7		% Rec.	8270C	06/03/11	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 06/07/11 12:59 Printed: 06/07/11 13:12
L518291-05 (PAH BY GCMS) - Diluted due to matrix
L518291-05 (PH) - 7.8@20.4C

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L518291-01	WG538003	SAMP	TPH (GC/FID) Low Fraction	R1703789	J6
	WG539215	SAMP	Chromium,Hexavalent	R1714410	J3J6
L518291-02	WG538546	SAMP	Nitrobenzene-d5	R1710730	J1
	WG538261	SAMP	o-Terphenyl	R1707889	J7
L518291-04	WG538546	SAMP	Benzo(a)pyrene	R1710730	O
	WG538546	SAMP	Benzo(b)fluoranthene	R1710730	O
	WG538546	SAMP	Benzo(g,h,i)perylene	R1710730	O
	WG538546	SAMP	Benzo(k)fluoranthene	R1710730	O
	WG538546	SAMP	Dibenz(a,h)anthracene	R1710730	O
	WG538546	SAMP	Indeno(1,2,3-cd)pyrene	R1710730	O
L518291-05	WG538546	SAMP	Anthracene	R1710730	O
	WG538546	SAMP	Acenaphthene	R1710730	O
	WG538546	SAMP	Acenaphthylene	R1710730	O
	WG538546	SAMP	Benzo(a)anthracene	R1710730	O
	WG538546	SAMP	Benzo(a)pyrene	R1710730	O
	WG538546	SAMP	Benzo(b)fluoranthene	R1710730	O
	WG538546	SAMP	Benzo(g,h,i)perylene	R1710730	O
	WG538546	SAMP	Benzo(k)fluoranthene	R1710730	O
	WG538546	SAMP	Chrysene	R1710730	O
	WG538546	SAMP	Dibenz(a,h)anthracene	R1710730	O
	WG538546	SAMP	Fluoranthene	R1710730	O
	WG538546	SAMP	Fluorene	R1710730	O
	WG538546	SAMP	Indeno(1,2,3-cd)pyrene	R1710730	O
	WG538546	SAMP	Naphthalene	R1710730	O
	WG538546	SAMP	Phenanthrene	R1710730	O
	WG538546	SAMP	Pyrene	R1710730	O
L518291-06	WG538546	SAMP	Benzo(a)pyrene	R1710730	O
	WG538546	SAMP	Benzo(b)fluoranthene	R1710730	O
	WG538546	SAMP	Benzo(g,h,i)perylene	R1710730	O
	WG538546	SAMP	Benzo(k)fluoranthene	R1710730	O
	WG538546	SAMP	Dibenz(a,h)anthracene	R1710730	O
	WG538546	SAMP	Indeno(1,2,3-cd)pyrene	R1710730	O
L518291-07	WG538546	SAMP	Anthracene	R1710730	O
	WG538546	SAMP	Acenaphthene	R1710730	O
	WG538546	SAMP	Acenaphthylene	R1710730	O
	WG538546	SAMP	Benzo(a)anthracene	R1710730	O
	WG538546	SAMP	Benzo(a)pyrene	R1710730	O
	WG538546	SAMP	Benzo(b)fluoranthene	R1710730	J5O
	WG538546	SAMP	Benzo(g,h,i)perylene	R1710730	O
	WG538546	SAMP	Benzo(k)fluoranthene	R1710730	O
	WG538546	SAMP	Chrysene	R1710730	O
	WG538546	SAMP	Dibenz(a,h)anthracene	R1710730	J3O
	WG538546	SAMP	Fluoranthene	R1710730	O
	WG538546	SAMP	Fluorene	R1710730	J3O
	WG538546	SAMP	Indeno(1,2,3-cd)pyrene	R1710730	O
	WG538546	SAMP	Naphthalene	R1710730	J3O
	WG538546	SAMP	Phenanthrene	R1710730	J3O
	WG538546	SAMP	Pyrene	R1710730	O
L518291-09	WG538596	SAMP	Benzo(a)pyrene	R1711329	J3
	WG538596	SAMP	Benzo(b)fluoranthene	R1711329	J3
	WG538596	SAMP	Benzo(g,h,i)perylene	R1711329	J3
	WG538596	SAMP	Dibenz(a,h)anthracene	R1711329	J3
	WG538596	SAMP	Fluoranthene	R1711329	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

ESC LAB SCIENCES
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Berry Petroleum Company - Denver, CO
Dave Nicholson
1999 Broadway, Suite 3700

Denver, CO 80202

Quality Assurance Report
Level II

L518291

June 07, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzene	< .0005	mg/kg			WG538003	05/29/11 03:19
Ethylbenzene	< .0005	mg/kg			WG538003	05/29/11 03:19
Toluene	< .005	mg/kg			WG538003	05/29/11 03:19
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG538003	05/29/11 03:19
Total Xylene	< .0015	mg/kg			WG538003	05/29/11 03:19
a,a,a-Trifluorotoluene(FID)		% Rec.	106.4	59-128	WG538003	05/29/11 03:19
a,a,a-Trifluorotoluene(PID)		% Rec.	110.2	54-144	WG538003	05/29/11 03:19
Mercury	< .02	mg/kg			WG537978	05/30/11 11:48
Arsenic	< 1	mg/kg			WG538020	05/30/11 10:06
Barium	< .25	mg/kg			WG538020	05/30/11 10:06
Boron	< 10	mg/kg			WG538020	05/30/11 10:06
Cadmium	< .25	mg/kg			WG538020	05/30/11 10:06
Chromium	< .5	mg/kg			WG538020	05/30/11 10:06
Copper	< 1	mg/kg			WG538020	05/30/11 10:06
Lead	< .25	mg/kg			WG538020	05/30/11 10:06
Nickel	< 1	mg/kg			WG538020	05/30/11 10:06
Selenium	< 1	mg/kg			WG538020	05/30/11 10:06
Silver	< .5	mg/kg			WG538020	05/30/11 10:06
Zinc	< 1.5	mg/kg			WG538020	05/30/11 10:06
TPH (GC/FID) High Fraction	< 4	ppm			WG538261	06/02/11 07:19
o-Terphenyl		% Rec.	75.38	50-150	WG538261	06/02/11 07:19
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG538446	06/02/11 03:03
a,a,a-Trifluorotoluene(FID)		% Rec.	100.2	59-128	WG538446	06/02/11 03:03
a,a,a-Trifluorotoluene(PID)		% Rec.	101.4	54-144	WG538446	06/02/11 03:03
pH	4.20	su			WG538375	06/02/11 14:06
Acenaphthene	< .033	mg/kg			WG538546	06/03/11 10:16
Acenaphthylene	< .033	mg/kg			WG538546	06/03/11 10:16
Anthracene	< .033	mg/kg			WG538546	06/03/11 10:16
Benzo(a)anthracene	< .033	mg/kg			WG538546	06/03/11 10:16
Benzo(a)pyrene	< .033	mg/kg			WG538546	06/03/11 10:16
Benzo(b)fluoranthene	< .033	mg/kg			WG538546	06/03/11 10:16
Benzo(g,h,i)perylene	< .033	mg/kg			WG538546	06/03/11 10:16
Benzo(k)fluoranthene	< .033	mg/kg			WG538546	06/03/11 10:16
Chrysene	< .033	mg/kg			WG538546	06/03/11 10:16
Dibenz(a,h)anthracene	< .033	mg/kg			WG538546	06/03/11 10:16
Fluoranthene	< .033	mg/kg			WG538546	06/03/11 10:16
Fluorene	< .033	mg/kg			WG538546	06/03/11 10:16
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG538546	06/03/11 10:16
Naphthalene	< .033	mg/kg			WG538546	06/03/11 10:16
Phenanthrene	< .033	mg/kg			WG538546	06/03/11 10:16
Pyrene	< .033	mg/kg			WG538546	06/03/11 10:16
2-Fluorobiphenyl		% Rec.	63.13	37-123	WG538546	06/03/11 10:16
Nitrobenzene-d5		% Rec.	68.67	19-129	WG538546	06/03/11 10:16
p-Terphenyl-d14		% Rec.	66.95	34-149	WG538546	06/03/11 10:16
Acenaphthene	< .033	mg/kg			WG538596	06/04/11 09:47

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Berry Petroleum Company - Denver, CO
Dave Nicholson
1999 Broadway, Suite 3700

Denver, CO 80202

Quality Assurance Report
Level II

L518291

June 07, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Acenaphthylene	< .033	mg/kg			WG538596	06/04/11 09:47
Anthracene	< .033	mg/kg			WG538596	06/04/11 09:47
Benzo(a)anthracene	< .033	mg/kg			WG538596	06/04/11 09:47
Benzo(a)pyrene	< .033	mg/kg			WG538596	06/04/11 09:47
Benzo(b)fluoranthene	< .033	mg/kg			WG538596	06/04/11 09:47
Benzo(g,h,i)perylene	< .033	mg/kg			WG538596	06/04/11 09:47
Benzo(k)fluoranthene	< .033	mg/kg			WG538596	06/04/11 09:47
Chrysene	< .033	mg/kg			WG538596	06/04/11 09:47
Dibenz(a,h)anthracene	< .033	mg/kg			WG538596	06/04/11 09:47
Fluoranthene	< .033	mg/kg			WG538596	06/04/11 09:47
Fluorene	< .033	mg/kg			WG538596	06/04/11 09:47
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG538596	06/04/11 09:47
Naphthalene	< .033	mg/kg			WG538596	06/04/11 09:47
Phenanthrene	< .033	mg/kg			WG538596	06/04/11 09:47
Pyrene	< .033	mg/kg			WG538596	06/04/11 09:47
2-Fluorobiphenyl		% Rec.	56.94	37-123	WG538596	06/04/11 09:47
Nitrobenzene-d5		% Rec.	56.23	19-129	WG538596	06/04/11 09:47
p-Terphenyl-d14		% Rec.	65.68	34-149	WG538596	06/04/11 09:47
Chromium,Hexavalent	< 2	mg/kg			WG538481	06/04/11 13:13
Specific Conductance	2.70	umhos/cm			WG538927	06/06/11 10:30
Chromium,Hexavalent	< 2	mg/kg			WG539215	06/07/11 11:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0	0	0	20	L518216-07	WG537978
Arsenic	mg/kg	12.0	6.83	57.2*	20	L518375-05	WG538020
Barium	mg/kg	36.0	39.6	10.1	20	L518375-05	WG538020
Boron	mg/kg	0	10.0	NA	20	L518375-05	WG538020
Cadmium	mg/kg	2.50	1.95	24.7*	20	L518375-05	WG538020
Chromium	mg/kg	22.0	22.9	4.46	20	L518375-05	WG538020
Copper	mg/kg	32.0	25.9	19.5	20	L518375-05	WG538020
Lead	mg/kg	180.	150.	20.4*	20	L518375-05	WG538020
Nickel	mg/kg	24.0	23.7	0.421	20	L518375-05	WG538020
Selenium	mg/kg	0	0	0	20	L518375-05	WG538020
Silver	mg/kg	0	0	0	20	L518375-05	WG538020
Zinc	mg/kg	74.0	71.7	2.89	20	L518375-05	WG538020
ORP	mV	59.0	58.0	1.71	20	L518291-03	WG538383
ORP	mV	80.0	67.0	17.7	20	L518325-02	WG538383
pH	su	11.0	11.0	0	1	L518291-01	WG538375
pH	su	7.40	7.40	0	1	L518510-01	WG538375
Chromium,Hexavalent	mg/kg	0	0	0	20	L518690-07	WG538481
Specific Conductance	umhos/cm	2400	2600	8.00	20	L518291-01	WG538927

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

ESC LAB SCIENCES
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Berry Petroleum Company - Denver, CO
Dave Nicholson
1999 Broadway, Suite 3700

Denver, CO 80202

Quality Assurance Report
Level II

L518291

June 07, 2011

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Specific Conductance	umhos/cm	1100	1100	0	20	L518690-07	WG538927
Chromium,Hexavalent	mg/kg	0	0	0	20	L518291-01	WG539215

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Benzene	mg/kg	.05	0.0543	109.	76-113	WG538003
Ethylbenzene	mg/kg	.05	0.0553	111.	78-115	WG538003
Toluene	mg/kg	.05	0.0547	109.	76-114	WG538003
Total Xylene	mg/kg	.15	0.171	114.	81-118	WG538003
a,a,a-Trifluorotoluene(PID)				107.4	54-144	WG538003
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.20	94.5	67-135	WG538003
a,a,a-Trifluorotoluene(FID)				104.7	59-128	WG538003
Mercury	mg/kg	8.77	9.02	103.	71.6-127.7	WG537978
Arsenic	mg/kg	192	173.	90.1	78.6-120.8	WG538020
Barium	mg/kg	420	386.	91.9	78.8-121.4	WG538020
Boron	mg/kg	140	125.	89.3	74.3-125.7	WG538020
Cadmium	mg/kg	70.1	65.0	92.7	78.5-121.5	WG538020
Chromium	mg/kg	168	158.	94.0	80.4-120.2	WG538020
Copper	mg/kg	122	112.	91.8	81.6-119.7	WG538020
Lead	mg/kg	113	102.	90.3	77.3-122.1	WG538020
Nickel	mg/kg	74.1	64.2	86.6	78.8-121.2	WG538020
Selenium	mg/kg	176	159.	90.3	75.6-125.0	WG538020
Silver	mg/kg	115	107.	93.0	66-133.9	WG538020
Zinc	mg/kg	437	403.	92.2	78.5-121.7	WG538020
TPH (GC/FID) High Fraction	ppm	60	46.0	76.6	50-150	WG538261
o-Terphenyl				64.63	50-150	WG538261
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.16	93.9	67-135	WG538446
a,a,a-Trifluorotoluene(FID)				108.0	59-128	WG538446
ORP	mV	229	220.	96.1	95.6-104.37	WG538383
pH	su	6.3	6.30	100.	97.98-102.02	WG538375
Acenaphthene	mg/kg	.167	0.111	66.4	44-117	WG538546
Acenaphthylene	mg/kg	.167	0.108	64.6	43-118	WG538546
Anthracene	mg/kg	.167	0.110	66.0	42-127	WG538546
Benzo(a)anthracene	mg/kg	.167	0.114	68.4	45-127	WG538546
Benzo(a)pyrene	mg/kg	.167	0.113	67.7	46-123	WG538546
Benzo(b)fluoranthene	mg/kg	.167	0.117	69.8	43-126	WG538546
Benzo(g,h,i)perylene	mg/kg	.167	0.113	67.7	43-128	WG538546
Benzo(k)fluoranthene	mg/kg	.167	0.113	67.6	40-126	WG538546
Chrysene	mg/kg	.167	0.117	70.0	44-129	WG538546
Dibenz(a,h)anthracene	mg/kg	.167	0.115	68.8	43-127	WG538546
Fluoranthene	mg/kg	.167	0.114	68.6	44-125	WG538546
Fluorene	mg/kg	.167	0.112	66.9	45-121	WG538546

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Berry Petroleum Company - Denver, CO
Dave Nicholson
1999 Broadway, Suite 3700

Denver, CO 80202

Quality Assurance Report
Level II

L518291

June 07, 2011

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Indeno(1,2,3-cd)pyrene	mg/kg	.167	0.117	69.9	43-127	WG538546
Naphthalene	mg/kg	.167	0.101	60.5	32-113	WG538546
Phenanthrene	mg/kg	.167	0.107	63.9	43-124	WG538546
Pyrene	mg/kg	.167	0.116	69.6	47-128	WG538546
2-Fluorobiphenyl				65.26	37-123	WG538546
Nitrobenzene-d5				68.20	19-129	WG538546
p-Terphenyl-d14				72.21	34-149	WG538546
Acenaphthene	mg/kg	.167	0.0942	56.4	44-117	WG538596
Acenaphthylene	mg/kg	.167	0.0944	56.5	43-118	WG538596
Anthracene	mg/kg	.167	0.100	60.2	42-127	WG538596
Benzo(a)anthracene	mg/kg	.167	0.102	60.8	45-127	WG538596
Benzo(a)pyrene	mg/kg	.167	0.0817	48.9	46-123	WG538596
Benzo(b)fluoranthene	mg/kg	.167	0.0818	49.0	43-126	WG538596
Benzo(g,h,i)perylene	mg/kg	.167	0.0866	51.9	43-128	WG538596
Benzo(k)fluoranthene	mg/kg	.167	0.0887	53.1	40-126	WG538596
Chrysene	mg/kg	.167	0.100	60.2	44-129	WG538596
Dibenz(a,h)anthracene	mg/kg	.167	0.0854	51.1	43-127	WG538596
Fluoranthene	mg/kg	.167	0.0877	52.5	44-125	WG538596
Fluorene	mg/kg	.167	0.0880	52.7	45-121	WG538596
Indeno(1,2,3-cd)pyrene	mg/kg	.167	0.0911	54.6	43-127	WG538596
Naphthalene	mg/kg	.167	0.0928	55.6	32-113	WG538596
Phenanthrene	mg/kg	.167	0.0966	57.9	43-124	WG538596
Pyrene	mg/kg	.167	0.0891	53.3	47-128	WG538596
2-Fluorobiphenyl				59.77	37-123	WG538596
Nitrobenzene-d5				62.80	19-129	WG538596
p-Terphenyl-d14				52.61	34-149	WG538596
Chromium,Hexavalent	mg/kg	132	100.	75.8	50-150	WG538481
Specific Conductance	umhos/cm	556	560.	101.	85-115	WG538927
Chromium,Hexavalent	mg/kg	132	110.	83.3	50-150	WG539215

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Benzene	mg/kg	0.0565	0.0543	113.	76-113	3.84	20	WG538003
Ethylbenzene	mg/kg	0.0564	0.0553	113.	78-115	1.97	20	WG538003
Toluene	mg/kg	0.0556	0.0547	111.	76-114	1.70	20	WG538003
Total Xylene	mg/kg	0.173	0.171	115.	81-118	0.800	20	WG538003
a,a,a-Trifluorotoluene(PID)				107.1	54-144			WG538003
TPH (GC/FID) Low Fraction	mg/kg	5.51	5.20	100.	67-135	5.83	20	WG538003
a,a,a-Trifluorotoluene(FID)				107.2	59-128			WG538003
TPH (GC/FID) High Fraction	ppm	45.0	46.0	75.0	50-150	2.07	25	WG538261
o-Terphenyl				63.99	50-150			WG538261
TPH (GC/FID) Low Fraction	mg/kg	5.10	5.16	93.0	67-135	1.33	20	WG538446
a,a,a-Trifluorotoluene(FID)				107.8	59-128			WG538446
ORP	mV	220.	220.	96.0	95.6-104.37	0	20	WG538383

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

ESC LAB SCIENCES
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Berry Petroleum Company - Denver, CO
Dave Nicholson
1999 Broadway, Suite 3700

Denver, CO 80202

Quality Assurance Report
Level II

L518291

June 07, 2011

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
pH	su	6.30	6.30	100.	97.98-102.02	0	20	WG538375
Acenaphthene	mg/kg	0.105	0.111	63.0	44-117	5.86	21	WG538546
Acenaphthylene	mg/kg	0.105	0.108	63.0	43-118	2.89	20	WG538546
Anthracene	mg/kg	0.106	0.110	63.0	42-127	4.16	21	WG538546
Benzo(a)anthracene	mg/kg	0.110	0.114	66.0	45-127	4.01	21	WG538546
Benzo(a)pyrene	mg/kg	0.110	0.113	66.0	46-123	2.89	20	WG538546
Benzo(b)fluoranthene	mg/kg	0.124	0.117	74.0	43-126	5.99	27	WG538546
Benzo(g,h,i)perylene	mg/kg	0.111	0.113	66.0	43-128	2.16	20	WG538546
Benzo(k)fluoranthene	mg/kg	0.102	0.113	61.0	40-126	10.0	32	WG538546
Chrysene	mg/kg	0.114	0.117	68.0	44-129	2.15	22	WG538546
Dibenz(a,h)anthracene	mg/kg	0.114	0.115	68.0	43-127	0.714	20	WG538546
Fluoranthene	mg/kg	0.108	0.114	65.0	44-125	5.63	22	WG538546
Fluorene	mg/kg	0.101	0.112	60.0	45-121	10.4	20	WG538546
Indeno(1,2,3-cd)pyrene	mg/kg	0.114	0.117	68.0	43-127	2.17	21	WG538546
Naphthalene	mg/kg	0.0999	0.101	60.0	32-113	1.15	26	WG538546
Phenanthrene	mg/kg	0.104	0.107	62.0	43-124	2.38	21	WG538546
Pyrene	mg/kg	0.113	0.116	67.0	47-128	3.19	20	WG538546
2-Fluorobiphenyl				61.29	37-123			WG538546
Nitrobenzene-d5				67.40	19-129			WG538546
p-Terphenyl-d14				69.29	34-149			WG538546
Acenaphthene	mg/kg	0.0994	0.0942	60.0	44-117	5.34	21	WG538596
Acenaphthylene	mg/kg	0.100	0.0944	60.0	43-118	6.08	20	WG538596
Anthracene	mg/kg	0.104	0.100	62.0	42-127	3.21	21	WG538596
Benzo(a)anthracene	mg/kg	0.100	0.102	60.0	45-127	1.45	21	WG538596
Benzo(a)pyrene	mg/kg	0.104	0.0817	62.0	46-123	24.3*	20	WG538596
Benzo(b)fluoranthene	mg/kg	0.109	0.0818	65.0	43-126	28.2*	27	WG538596
Benzo(g,h,i)perylene	mg/kg	0.107	0.0866	64.0	43-128	21.0*	20	WG538596
Benzo(k)fluoranthene	mg/kg	0.107	0.0887	64.0	40-126	18.7	32	WG538596
Chrysene	mg/kg	0.102	0.100	61.0	44-129	1.81	22	WG538596
Dibenz(a,h)anthracene	mg/kg	0.107	0.0854	64.0	43-127	22.7*	20	WG538596
Fluoranthene	mg/kg	0.111	0.0877	67.0	44-125	23.9*	22	WG538596
Fluorene	mg/kg	0.105	0.0880	63.0	45-121	17.3	20	WG538596
Indeno(1,2,3-cd)pyrene	mg/kg	0.108	0.0911	64.0	43-127	16.8	21	WG538596
Naphthalene	mg/kg	0.0910	0.0928	54.0	32-113	1.92	26	WG538596
Phenanthrene	mg/kg	0.100	0.0966	60.0	43-124	3.49	21	WG538596
Pyrene	mg/kg	0.101	0.0891	60.0	47-128	12.6	20	WG538596
2-Fluorobiphenyl				59.00	37-123			WG538596
Nitrobenzene-d5				57.47	19-129			WG538596
p-Terphenyl-d14				61.31	34-149			WG538596
Chromium,Hexavalent	mg/kg	100.	100.	76.0	50-150	0	20	WG538481
Specific Conductance	umhos/	560.	560.	101.	85-115	0	20	WG538927
Chromium,Hexavalent	mg/kg	120.	110.	91.0	50-150	8.70	20	WG539215

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/kg	0.224	0	.05	89.6	32-137	L518291-01	WG538003
Ethylbenzene	mg/kg	0.172	0	.05	69.0	10-150	L518291-01	WG538003
Toluene	mg/kg	0.202	0	.05	80.6	20-142	L518291-01	WG538003

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Berry Petroleum Company - Denver, CO
Dave Nicholson
1999 Broadway, Suite 3700

Denver, CO 80202

Quality Assurance Report
Level II

L518291

June 07, 2011

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Total Xylene	mg/kg	0.536	0	.15	71.5	16-141	L518291-01	WG538003
a,a,a-Trifluorotoluene(PID)					104.5	54-144		WG538003
TPH (GC/FID) Low Fraction	mg/kg	15.8	0	5.5	57.5	55-109	L518291-01	WG538003
a,a,a-Trifluorotoluene(FID)					109.0	59-128		WG538003
Mercury	mg/kg	0.264	0	.25	106.	70-130	L518216-07	WG537978
Arsenic	mg/kg	54.8	6.83	50	95.9	75-125	L518375-05	WG538020
Barium	mg/kg	83.1	39.6	50	87.0	75-125	L518375-05	WG538020
Boron	mg/kg	54.0	10.0	50	88.0	75-125	L518375-05	WG538020
Cadmium	mg/kg	47.3	1.95	50	90.7	75-125	L518375-05	WG538020
Chromium	mg/kg	71.8	22.9	50	97.8	75-125	L518375-05	WG538020
Copper	mg/kg	74.6	25.9	50	97.4	75-125	L518375-05	WG538020
Lead	mg/kg	632.	150.	50	964.*	75-125	L518375-05	WG538020
Nickel	mg/kg	67.1	23.7	50	86.8	75-125	L518375-05	WG538020
Selenium	mg/kg	44.6	0	50	89.2	75-125	L518375-05	WG538020
Silver	mg/kg	47.8	0	50	95.6	75-125	L518375-05	WG538020
Zinc	mg/kg	113.	71.7	50	82.6	75-125	L518375-05	WG538020
TPH (GC/FID) Low Fraction	mg/kg	16.6	0.610	5.5	58.2	55-109	L518647-01	WG538446
a,a,a-Trifluorotoluene(FID)					104.5	59-128		WG538446
Acenaphthene	mg/kg	0.0933	0	.167	55.9	38-121	L518291-07	WG538546
Acenaphthylene	mg/kg	0.0869	0	.167	52.0	39-120	L518291-07	WG538546
Anthracene	mg/kg	0.0867	0	.167	51.9	35-133	L518291-07	WG538546
Benzo(a)anthracene	mg/kg	0.137	0	.167	82.1	35-136	L518291-07	WG538546
Benzo(a)pyrene	mg/kg	0.132	0	.167	79.0	37-131	L518291-07	WG538546
Benzo(b)fluoranthene	mg/kg	0.215	0	.167	129.	29-145	L518291-07	WG538546
Benzo(g,h,i)perylene	mg/kg	0.0447	0	.167	26.7	10-139	L518291-07	WG538546
Benzo(k)fluoranthene	mg/kg	0.144	0	.167	85.9	31-140	L518291-07	WG538546
Chrysene	mg/kg	0.144	0	.167	86.2	34-137	L518291-07	WG538546
Dibenz(a,h)anthracene	mg/kg	0.0448	0	.167	26.8	21-132	L518291-07	WG538546
Fluoranthene	mg/kg	0.177	0	.167	106.	34-132	L518291-07	WG538546
Fluorene	mg/kg	0.0997	0	.167	59.7	38-126	L518291-07	WG538546
Indeno(1,2,3-cd)pyrene	mg/kg	0.0518	0	.167	31.0	17-134	L518291-07	WG538546
Naphthalene	mg/kg	0.118	0	.167	70.7	24-122	L518291-07	WG538546
Phenanthrene	mg/kg	0.128	0	.167	76.8	38-128	L518291-07	WG538546
Pyrene	mg/kg	0.149	0	.167	89.1	35-141	L518291-07	WG538546
2-Fluorobiphenyl					49.73	37-123		WG538546
Nitrobenzene-d5					54.34	19-129		WG538546
p-Terphenyl-d14					43.43	34-149		WG538546
Acenaphthene	mg/kg	0.119	0	.167	71.2	38-121	L518215-08	WG538596
Acenaphthylene	mg/kg	0.120	0	.167	71.8	39-120	L518215-08	WG538596
Anthracene	mg/kg	0.121	0	.167	72.5	35-133	L518215-08	WG538596
Benzo(a)anthracene	mg/kg	0.109	0	.167	65.3	35-136	L518215-08	WG538596
Benzo(a)pyrene	mg/kg	0.110	0	.167	65.9	37-131	L518215-08	WG538596
Benzo(b)fluoranthene	mg/kg	0.102	0	.167	61.0	29-145	L518215-08	WG538596
Benzo(g,h,i)perylene	mg/kg	0.105	0	.167	62.9	10-139	L518215-08	WG538596
Benzo(k)fluoranthene	mg/kg	0.0956	0	.167	57.3	31-140	L518215-08	WG538596
Chrysene	mg/kg	0.109	0	.167	65.1	34-137	L518215-08	WG538596
Dibenz(a,h)anthracene	mg/kg	0.112	0	.167	67.2	21-132	L518215-08	WG538596
Fluoranthene	mg/kg	0.115	0	.167	68.8	34-132	L518215-08	WG538596
Fluorene	mg/kg	0.120	0	.167	71.9	38-126	L518215-08	WG538596

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

ESC LAB SCIENCES
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Berry Petroleum Company - Denver, CO
Dave Nicholson
1999 Broadway, Suite 3700

Denver, CO 80202

Quality Assurance Report
Level II

L518291

June 07, 2011

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Indeno(1,2,3-cd)pyrene	mg/kg	0.112	0	.167	67.2	17-134	L518215-08	WG538596
Naphthalene	mg/kg	0.115	0	.167	68.7	24-122	L518215-08	WG538596
Phenanthrene	mg/kg	0.125	0	.167	74.7	38-128	L518215-08	WG538596
Pyrene	mg/kg	0.114	0	.167	68.3	35-141	L518215-08	WG538596
2-Fluorobiphenyl					70.01	37-123		WG538596
Nitrobenzene-d5					80.08	19-129		WG538596
p-Terphenyl-d14					67.63	34-149		WG538596
Chromium,Hexavalent	mg/kg	9.70	0	20	48.5*	50-150	L518291-01	WG539215

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/kg	0.240	0.224	96.2	32-137	7.05	39	L518291-01	WG538003
Ethylbenzene	mg/kg	0.189	0.172	75.7	10-150	9.26	44	L518291-01	WG538003
Toluene	mg/kg	0.214	0.202	85.6	20-142	6.00	42	L518291-01	WG538003
Total Xylene	mg/kg	0.583	0.536	77.7	16-141	8.34	46	L518291-01	WG538003
a,a,a-Trifluorotoluene(PID)				107.1	54-144				WG538003
TPH (GC/FID) Low Fraction	mg/kg	14.8	15.8	53.8*	55-109	6.68	20	L518291-01	WG538003
a,a,a-Trifluorotoluene(FID)				109.1	59-128				WG538003
Mercury	mg/kg	0.271	0.264	108.	70-130	2.62	20	L518216-07	WG537978
Arsenic	mg/kg	57.5	54.8	101.	75-125	4.81	20	L518375-05	WG538020
Barium	mg/kg	77.2	83.1	75.2	75-125	7.36	20	L518375-05	WG538020
Boron	mg/kg	50.1	54.0	80.2	75-125	7.49	20	L518375-05	WG538020
Cadmium	mg/kg	43.2	47.3	82.5	75-125	9.06	20	L518375-05	WG538020
Chromium	mg/kg	68.7	71.8	91.6	75-125	4.41	20	L518375-05	WG538020
Copper	mg/kg	73.5	74.6	95.2	75-125	1.49	20	L518375-05	WG538020
Lead	mg/kg	154.	632.	8.00*	75-125	122.*	20	L518375-05	WG538020
Nickel	mg/kg	70.7	67.1	94.0	75-125	5.22	20	L518375-05	WG538020
Selenium	mg/kg	41.2	44.6	82.4	75-125	7.93	20	L518375-05	WG538020
Silver	mg/kg	44.8	47.8	89.6	75-125	6.48	20	L518375-05	WG538020
Zinc	mg/kg	110.	113.	76.6	75-125	2.69	20	L518375-05	WG538020
TPH (GC/FID) Low Fraction	mg/kg	13.5	16.6	47.0*	55-109	20.4*	20	L518647-01	WG538446
a,a,a-Trifluorotoluene(FID)				104.0	59-128				WG538446
Acenaphthene	mg/kg	0.114	0.0933	68.1	38-121	19.7	23	L518291-07	WG538546
Acenaphthylene	mg/kg	0.102	0.0869	60.9	39-120	15.8	22	L518291-07	WG538546
Anthracene	mg/kg	0.106	0.0867	63.2	35-133	19.6	23	L518291-07	WG538546
Benzo(a)anthracene	mg/kg	0.166	0.137	99.4	35-136	19.1	23	L518291-07	WG538546
Benzo(a)pyrene	mg/kg	0.149	0.132	89.3	37-131	12.2	22	L518291-07	WG538546
Benzo(b)fluoranthene	mg/kg	0.252	0.215	151.*	29-145	16.1	33	L518291-07	WG538546
Benzo(g,h,i)perylene	mg/kg	0.0532	0.0447	31.8	10-139	17.4	26	L518291-07	WG538546
Benzo(k)fluoranthene	mg/kg	0.171	0.144	102.	31-140	17.6	34	L518291-07	WG538546
Chrysene	mg/kg	0.166	0.144	99.3	34-137	14.1	23	L518291-07	WG538546
Dibenz(a,h)anthracene	mg/kg	0.0576	0.0448	34.5	21-132	25.0*	25	L518291-07	WG538546
Fluoranthene	mg/kg	0.211	0.177	126.	34-132	17.5	24	L518291-07	WG538546
Fluorene	mg/kg	0.133	0.0997	79.9	38-126	29.0*	23	L518291-07	WG538546
Indeno(1,2,3-cd)pyrene	mg/kg	0.0584	0.0518	35.0	17-134	11.9	25	L518291-07	WG538546
Naphthalene	mg/kg	0.198	0.118	118.	24-122	50.4*	29	L518291-07	WG538546
Phenanthrene	mg/kg	0.177	0.128	106.	38-128	31.9*	25	L518291-07	WG538546
Pyrene	mg/kg	0.178	0.149	107.	35-141	18.1	25	L518291-07	WG538546

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Berry Petroleum Company - Denver, CO
Dave Nicholson
1999 Broadway, Suite 3700

Denver, CO 80202

Quality Assurance Report
Level II

L518291

June 07, 2011

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
2-Fluorobiphenyl				61.78	37-123				
Nitrobenzene-d5				67.26	19-129				
p-Terphenyl-d14				54.89	34-149				
Acenaphthene	mg/kg	0.116	0.119	69.4	38-121	2.49	23	L518215-08	WG538596
Acenaphthylene	mg/kg	0.117	0.120	70.0	39-120	2.56	22	L518215-08	WG538596
Anthracene	mg/kg	0.114	0.121	68.4	35-133	5.91	23	L518215-08	WG538596
Benzo(a)anthracene	mg/kg	0.104	0.109	62.1	35-136	5.15	23	L518215-08	WG538596
Benzo(a)pyrene	mg/kg	0.0986	0.110	59.1	37-131	10.9	22	L518215-08	WG538596
Benzo(b)fluoranthene	mg/kg	0.0959	0.102	57.4	29-145	5.92	33	L518215-08	WG538596
Benzo(g,h,i)perylene	mg/kg	0.0997	0.105	59.7	10-139	5.11	26	L518215-08	WG538596
Benzo(k)fluoranthene	mg/kg	0.106	0.0956	63.6	31-140	10.4	34	L518215-08	WG538596
Chrysene	mg/kg	0.102	0.109	61.4	34-137	5.97	23	L518215-08	WG538596
Dibenz(a,h)anthracene	mg/kg	0.103	0.112	61.8	21-132	8.30	25	L518215-08	WG538596
Fluoranthene	mg/kg	0.111	0.115	66.4	34-132	3.62	24	L518215-08	WG538596
Fluorene	mg/kg	0.115	0.120	68.8	38-126	4.44	23	L518215-08	WG538596
Indeno(1,2,3-cd)pyrene	mg/kg	0.102	0.112	60.8	17-134	9.98	25	L518215-08	WG538596
Naphthalene	mg/kg	0.116	0.115	69.3	24-122	0.850	29	L518215-08	WG538596
Phenanthrene	mg/kg	0.113	0.125	67.8	38-128	9.72	25	L518215-08	WG538596
Pyrene	mg/kg	0.107	0.114	63.9	35-141	6.66	25	L518215-08	WG538596
2-Fluorobiphenyl				66.14	37-123				WG538596
Nitrobenzene-d5				73.78	19-129				WG538596
p-Terphenyl-d14				60.57	34-149				WG538596
Chromium,Hexavalent	mg/kg	7.80	9.70	39.0*	50-150	21.7*	20	L518291-01	WG539215

Batch number /Run number / Sample number cross reference

WG538003: R1703789: L518291-01 02 03 04 05 06 07 08 09
WG537978: R1704251: L518291-01 02 03 04 05 06 07 08 09
WG538020: R1704733: L518291-01 02 03 04 05 06 07 08 09
WG538261: R1707889: L518291-01 02 03 04 05 06 07 08 09
WG538446: R1707929: L518291-08 09
WG538383: R1708591: L518291-01 02 03 04 05 06 07 08 09
WG538375: R1708610: L518291-01 02 03 04 05 06 07 08 09
WG538546: R1710730: L518291-01 02 03 04 05 06 07 08
WG538596: R1711329: L518291-09
WG538481: R1712310: L518291-02 03 04 05 06 07 08 09
WG538239: R1712433: L518291-01 02 03 04 05 06 07 08 09
WG538927: R1712771: L518291-01 02 03 04 05 06 07 08 09
WG539215: R1714410: L518291-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Berry Petroleum Company - Denver, CO
Dave Nicholson
1999 Broadway, Suite 3700

Denver, CO 80202

Quality Assurance Report
Level II

L518291

June 07, 2011

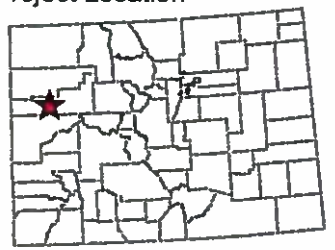
The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Project Location



COLORADO

Legend

Sample Location

Existing Road

N
W E
S

0 50 100 200 300

Feet

Berry Petroleum Company

CD-32 Well Pad Sample Locations for Background Arsenic Concentrations

Garfield County, Colorado

August 2011	Figure 1

Nicholson GeoSolutions, LLC