3RP-173

GW monitoring report

DATE:
2004

BURLINGTON
RESOURCES
San Juan Division

March 31, 2005

RECEIVED

Certified: 70993400001842167364

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Environmental Bureau

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Oil Conservation Division
Environmental Bureau

Glen Von Gonten
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: 2004 Annual Groundwater Investigation and Remediation Reports
San Juan Basin, New Mexico

Dear Mr. von Gonten:

As required in Burlington Resources approved Groundwater Investigation and Remediation Plan dated August, 1998, enclosed are the 2004 annual reports for Burlington's groundwater impact sites in the San Juan Basin. Separate reports are enclosed for the following locations:

3RP 66	Cozzens B#1
3RP 69	Hampton #4M
3RP 71	Johnson Federal #4 Metering Station
3RP 173	Flora Vista (ENTERPRISE FIELD SVCES — FLORANCE VISTA #1
3RP 37	Marcotte Pool Unit #1 ~~(DEHM)~~ 30-045-29466
	Sategna #2 (30-045-07974)

If you have questions or additional information is needed, please contact me at (505) 326-9537.

Sincerely,

Gregg Wurtz
Sr. Environmental Representative

Attachments - Groundwater Investigation and Remediation Reports

cc: Denny Foust - NMOCD Aztec
WFS - Mark Harvey (Cozzens B#1, Hampton #4M)
EPFS - Scott Pope (Johnson Fed. #4,)
Facility and Correspondence Files

3RP 173

BURLINGTON RESOURCES 2004 ANNUAL GROUND WATER REPORT

Flora Vista No. 1
(FLORANCE)

SITE DETAILS

Location: Unit Letter F, Section 22, Township 30N, Range 12W; San Juan County, New Mexico
Land Type: Fee

2003 ACTIVITIES

Historic petroleum contaminated soil was discovered at the Flora Vista #1 location during a routine production resetting activity in 2003. Approximately 49986 cu yds of contaminated soil was removed and 4446 cu yds of clean soil was removed. The contaminated soil was taken to a commercial landfill facility located on Couch Mesa, Farmington New Mexico. The clean soil was backfilled into the excavation. Ground water was observed in the bottom of the excavation at approximately 25 feet below the ground surface. Field PID measurements were collected during the excavation work to determine the extent of the excavation. Soil samples were collected in the field for laboratory analysis to document clean closure. Field notes of the excavation work are included in Attachment 1. To enhance the remediation of minor amounts of residual petroleum contamination in the excavation 80 bbls of an oxidizer (potassium permanganate) solution was sprayed on the soils to break down the hydrocarbons.

A ground water source well (i.e., Monitoring Well #1) was installed slightly down gradient from the center of the excavation. The soil boring and well construction notes are found in Attachment 1. Groundwater monitoring was conducted quarterly starting in September. A general water quality characterization analysis was performed followed by a more specific BTEX and TPH analysis in subsequent monitoring. The general ground water analysis did not detect any constituents of concern except iron and manganese. The consentrations of iron and manganese could not be linked to the oil and gas operations conducted on location. The managanese consentration may be linked to the potassium permanganate (oxidizer) solution applied to the soil in the open excavation. The oxidizer solution will naturally break down in a short period of time.

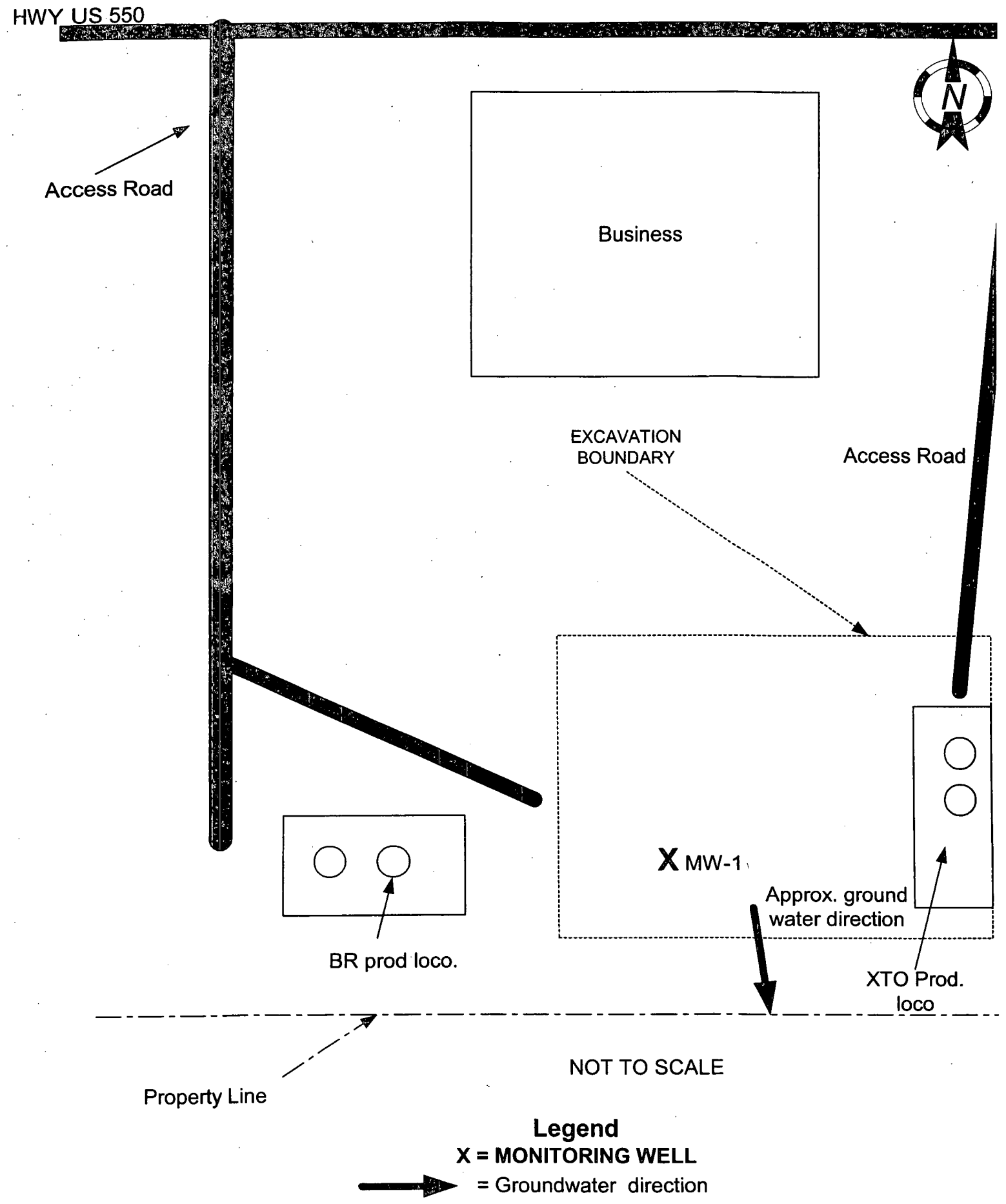
CONCLUSIONS

The petroleum contaminated soils were removed from this location to the extent practical. The soil samples collected for laboratory analysis confirm the soil was removed to an extent below OCD standards (Attachment 1, Field Excavation Work Log and Soil Excavation Analytical Results). The ground water monitoring results through 2004 (Table 1) confirm that the ground water quality is above the WCCC New Mexico Ground Water Standards.

RECOMMENDATIONS

- Burlington Resources proposes to continue quarterly sampling at this site and process of natural passive degradation of hydrocarbons
- Burlington Resources will request official closure of this site when four quarters of ground water analysis demonstrate the water quality is below standards.

Attachments: Figure 1 - Site Map
Table 1 - Groundwater Sampling Results Summary
Attachment 1
Groundwater Analytical Results
Drilling Logs/Wellbore Diagrams
Field excavation work log and soil excavation analytical results


HWY US 550
N
Access Road
Business
EXCAVATION
BOUNDARY
Access Road
X MW-1
Approx. ground
water direction
BR prod loco.
XTO Prod.
loco
NOT TO SCALE
Property Line
Legend
X = MONITORING WELL
= Groundwater direction

GROUND WATER SAMPLING LOGS AND ANALYTICAL RESULTS

Table 1

Flora Vista #1
Groundwater Monitoring Well Sampling

Well Name	MW #	Sample Date	B (ppb)	T (ppb)	E (ppb)	X (ppb)	BTEX (ppb)	DTW (1) (ft)
			10	*750*	*750*	*620*		
Excavation	n/a	6/20/2003	1700	300	490	5090	7580	standing
Flora Vista #1	1	9/23/2003	7500	20 (J)	660	9220	17380	17.03
		12/16/2003	7930	10(J)	1180	8.64	9119	20.11
		3/16/2004	6860	U	1160	8470	16490	23.69
		6/21/2004	4140	U	430	3120	7690	19.92
		9/30/2004	9080	30J	1410	9980	20500	16.82
		12/13/2004	8520	U	1340	9390	19250	20.40

(1) measured from top of casing
(J) Analyte concentration detected a value between MDL and PQL

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:_____ Project Name: Flora Vista Client: Burlington
Location:_ Well No: MW-1 Development **Sampling**
Project Manager MJN Date 3/16/04 Start Time 0850 Weather clear 40s
Depth to Water 23.69 Depth to Product na Product Thickness: na Measuring Point TOC
Water Column Height 1.66 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer **X** Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal **X** stabilization of Indicator Parameters **X** Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/**oz** to be removed
	Gallons	Ounces	
1.66 x .16	0.27		0.81

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
0850	**10.60**	**1200**	**55.8**				**0.125**	
	7.42	**1260**	**58.6**				**0.25**	
	6.89	**1250**	**58.2**				**0.38**	
0858	**6.67**	**1190**	**56.7**				**0.50**	
	6.60	**1210**	**58.1**				**0.625**	

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
0904	**6.92**	**1200**	**58.1**					**0.75**	**clear**

COMMENTS well bailing down

INSTRUMENTATION: pH Meter **X** _____ Temperature Meter **x**
DO Monitor _____ Other _____
Conductivity Meter **X** _____
Water Disposal onsite Sample ID MW-1 Sample Time 0908
BTEX VOCs
MS/MSD_____ BD_____ BD Name/Time_____ TB_____

Burlington Resources, Inc.
Project ID: MISC. GW-SAMPLING
Sample ID: FLORA VISTA

ACZ Sample ID: ***L44982-01***
Date Sampled: *03/16/04 9:08*
Date Received: *03/17/04*
Sample Matrix: *Ground Water*

Benzene, Toluene, Ethylbenzene & Xylene

Analysis Method: **M8021B GC/PID**
Extract Method: **Method**

Analyst: *km*
Extract Date: *03/24/04 23:41*
Analysis Date: *03/24/04 23:41*
Dilution Factor: *50*

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	6860			ug/L	20	50
Ethylbenzene	000100-41-4	1160			ug/L	10	50
m p Xylene	01330 20 7	8340			ug/L	20	100
o Xylene	00095-47- 6	130			ug/L	10	50
Toluene	000108-88-3		U		ug/L	10	50

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	105.3		%	83	117

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

L 44982 MM 3/16/04
L 44968

CHAIN of CUSTODY

Report to:

Name: GREGG WURTZ
Company: Burlington
E-mail:
Address: 3401 30TH ST
Farmington NM 87499
Telephone: 505 326 9700

Copy of Report to:

Name:
Company:
E-mail:
Telephone:

Invoice to:

Name: SAME AS ABOVE
Company:
E-mail:
Address:
Telephone:

COPY

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ☐ NO ☐
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

Quote #:
Project/PO #: NMSC GROUNDWATER SAMP
Shipping Co.:
Tracking #:
Reporting state for compliance testing:
Are any samples NRC licensable material?

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	BTEX
COZZENS MW-1	3-15-04 1613	GW		2
Flora Vista MW-1	3-16-04 0908	GW		2
TRIP Blank	3-16-04 0920	GW		1

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

PLEASE PROVIDE SEPARATE REPORTS FOR EACH LOCATION, COZZENS / FLORA VISTA

RELINQUISHED BY	DATE:TIME	RECEIVED BY	DATE:TIME
(NEE)	3-16-04 945	MM	3/17/04 1000

Page Of

FRMQA021.12.03.06

White - Return with sample. Yellow - Retain for your records

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

Gregg Wurtz
Burlington Resources, Inc.
3401 E. 30th St. PO BOX 4289
Farmington, NM 87402-4289

March 26, 2004

Project ID: MISC. GW-SAMPLING
ACZ Project ID: L44982

Gregg Wurtz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 17, 2004. This project has been assigned to ACZ's project number, L44982. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 10.0. The enclosed results relate only to the samples received under L44982. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 26, 2004. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs.

If you have any questions, please contact your Project Manager or Customer Service Representative.

26/Mar/04

Sue Barkey, Project Manager, has reviewed and approved this report in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac

ACIL

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Burlington Resources, Inc.
Project ID: MISC. GW-SAMPLING
Sample ID: TB031104-01

ACZ Sample ID: ***L44982-02***
Date Sampled: *03/16/04 0:00*
Date Received: *03/17/04*
Sample Matrix: *Ground Water*

Benzene, Toluene, Ethylbenzene & Xylene

Analysis Method: **M8021B GC/PID**
Extract Method: **Method**

Analyst: *km*
Extract Date: *03/25/04 0:24*
Analysis Date: *03/25/04 0:24*
Dilution Factor: *1*

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7	0.5	J		ug/L	0.4	2
o Xylene	00095-47- 6		U		ug/L	0.2	1
Toluene	000108-88-3	0.3	J		ug/L	0.2	1

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	100		%	83	117

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
LCL	Lower Control Limit
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
UCL	Upper Control Limit
Sample	Value of the Sample of interest

QC Sample Types

SURR	Surrogate	*LFM*	Laboratory Fortified Matrix
INTS	Internal Standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
LCSS	Laboratory Control Sample - Soil	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSW	Laboratory Control Sample - Water	*PBS*	Prep Blank - Soil
LFB	Laboratory Fortified Blank	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

B	Analyte detected in daily blank
H	Analysis exceeded method hold time.
J	Analyte concentration detected at a value between MDL and PQL
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	Analyte was analyzed for but not detected at the indicated MDL
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
X	Quality contreol sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
P	Analyte concentration differs from second detector by more than 40%.
E	Analyte concentration is estimated due to result exceeding calibration range.
M	Analyte concentration is estimated due to matrix interferences.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
(3)	EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December, 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Organic analyses are reported on an "as received" basis.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Extended Qualifier Report

Burlington Resources, Inc.

ACZ Project ID: ***L44982***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION

No extended qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Burlington Resources, Inc.
MISC. GW-SAMPLING

ACZ Project ID: L44982
Date Received: 3/17/2004
Received By: coryd

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			Ö
2) Are the custody seals on the cooler intact?	Ö		
3) Are the custody seals on the sample containers intact?			Ö
4) Is there a Chain of Custody or other directive shipping papers present?	Ö		
5) Is the Chain of Custody complete?	Ö		
6) Is the Chain of Custody in agreement with the samples received?	Ö		
7) Is there enough sample for all requested analyses?	Ö		
8) Are all samples within holding times for requested analyses?	Ö		
9) Were all sample containers received intact?	Ö		
10) Are the temperature blanks present?	Ö		
11) Are the trip blanks (VOA and/or Cyanide) present?	Ö		
12) Are samples requiring no headspace, headspace free?	Ö		
13) Do the samples that require a Foreign Soils Permit have one?			Ö

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
ACZ		0.4	12

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Burlington Resources, Inc.
MISC. GW-SAMPLING

ACZ Project ID: L44982
Date Received: 3/17/2004
Received By: coryd

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	Y < 2	YG< 2	B < 2	BG< 2	O < 2	T >12	P >12	N/A	RAD
L44982-01	FLORA VISTA										Ö	
L44982-02	TB031104-01										Ö	

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
B	Filtered/Sulfuric	BLUE	pH must be < 2
BG	Filtered/Sulfuric	BLUE GLASS	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:_____ Project Name: Flora Vista Client: Burlington
Location:_ Well No: MW-1 Development **Sampling**
Project Manager MJN Date 6/21/04 Start Time 1543 Weather clear 80s
Depth to Water 19.92 Depth to Product na Product Thickness: na Measuring Point TOC
Water Column Height 5.43 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer **X** Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal **X** stabilization of Indicator Parameters **X** Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/**oz** to be removed
	Gallons	Ounces	
5.43 x .16	0.89		2.66

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
1543	**5.91**	**620**	**71.9**				**0.25**	**silty**
	5.93	**570**	**65.6**				**0.5**	**silty**
	5.83	**530**	**64.0**				**0.75**	**silty**
	5.80	**570**	**63.9**				**2**	**silty**
	5.77	**570**	**63.5**				**2.25**	**silty**
	5.75	**560**	**63.5**				**2.5**	**silty**
1553	**5.74**	**560**	**63.5**				**2.75**	**silty**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1553	**5.74**	**560**	**63.5**					**2.75**	**silty**

COMMENTS well bailing down

INSTRUMENTATION: pH Meter **X** _____ Temperature Meter **x**
DO Monitor _____ Other _____
Conductivity Meter **X** _____
Water Disposal onsite Sample ID MW-1 Sample Time 1555
Analysis BTEX
MS/MSD_____ BD_____ BD Name/Time_____ TB_____

Burlington Resources, Inc.
Project ID: MISC SAMPLING
Sample ID: MW-1 FLORA VISTA

ACZ Sample ID: ***L46374-01***
Date Sampled: *06/21/04 15:55*
Date Received: *06/24/04*
Sample Matrix: *Ground Water*

Benzene, Toluene, Ethylbenzene & Xylene

Analysis Method: **M8021B GC/PID**
Extract Method: **Method**

Analyst: *km*
Extract Date: *07/02/04 14:50*
Analysis Date: *07/02/04 14:50*
Dilution Factor: *200*

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	4140			ug/L	60	200
Ethylbenzene	000100-41-4	430			ug/L	40	200
m p Xylene	01330 20 7	2980			ug/L	80	400
o Xylene	00095-47- 6	140	J	*	ug/L	40	200
Toluene	000108-88-3		U		ug/L	40	200

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	97		%	83	117

** Please refer to Extended Qualifier Report for details.*

ACZ Laboratories, Inc.

L46374

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Gregg Wurtz
Company: Burlington Resources
E-mail:

Address: 3401 EAST 30TH STREET
Farmington NM 87499
Telephone: 505 326 9700

Copy of Report to:

Name:
Company:

E-mail:
Telephone:

Invoice to:

Name: SAME
Company:
E-mail:

Address:
Telephone:

COPY

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ☐ NO ☐
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

Quote #:
Project/PO #: Misc Sampling
Shipping Co.:
Tracking #:
Reporting State for compliance testing:

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE	TIME	Matrix	# of Containers	BTEX
MW-3 Marcote	6/21/04	1430	GW	2	X
MW-2 Marcote	6/21/04	1510	GW	2	X
MW-1 Flora Vista	6/21/04	1555	GW	2	X
MW-1 Cozzens	6/21/04	1650	GW	2	X
MW-2 Cozzens	6/21/04	1705	GW	2	X
MW-1 Johnson Federal #4	6/22/04	1247	GW	2	X
Trip Blank	6/22/04	1300	G	1	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please provide seperate report for each location
1) Marcote
2) Flora Vista
3) Cozzens
4) Johnson Federal

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
	6/22	1600			
				6-23-04	
					1160

PAGE Of

FRMQA021.06.03.05

White - Return with sample. Yellow - Retain for your records.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

Gregg Wurtz
Burlington Resources, Inc.
3401 E. 30th St. PO BOX 4289
Farmington, NM 87402-4289

July 12, 2004

Project ID: MISC SAMPLING
ACZ Project ID: L46374

Gregg Wurtz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 24, 2004. This project has been assigned to ACZ's project number, L46374. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 10.0. The enclosed results relate only to the samples received under L46374. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 12, 2004. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs.

If you have any questions, please contact your Project Manager or Customer Service Representative.

12/Jul/04

Sue Barkey, Project Manager, has reviewed and approved this report in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac

ACIL

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
LCL	Lower Control Limit
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
UCL	Upper Control Limit
Sample	Value of the Sample of interest

QC Sample Types

SURR	Surrogate	*LFM*	Laboratory Fortified Matrix
INTS	Internal Standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
LCSS	Laboratory Control Sample - Soil	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSW	Laboratory Control Sample - Water	*PBS*	Prep Blank - Soil
LFB	Laboratory Fortified Blank	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

B	Analyte detected in daily blank
H	Analysis exceeded method hold time.
J	Analyte concentration detected at a value between MDL and PQL
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	Analyte was analyzed for but not detected at the indicated MDL
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
X	Quality contreol sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
P	Analyte concentration differs from second detector by more than 40%.
E	Analyte concentration is estimated due to result exceeding calibration range.
M	Analyte concentration is estimated due to matrix interferences.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
(3)	EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December, 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Organic analyses are reported on an "as received" basis.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Extended Qualifier Report

Burlington Resources, Inc.

ACZ Project ID: ***L46374***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L46374-01	WG174314	o Xylene	M8021B GC/PID	MA	One spike recovery was outside of the method limits; the duplicate spike and the method control recoveries were within the method limits.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Burlington Resources, Inc.
MISC SAMPLING

ACZ Project ID: L46374
Date Received: 6/24/2004
Received By:

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?	X		
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?	X		
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
ACZ		1.6	15

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Burlington Resources, Inc.
MISC SAMPLING

ACZ Project ID: L46374
Date Received: 6/24/2004
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	Y < 2	YG< 2	B < 2	BG< 2	O < 2	T >12	P >12	N/A	RAD
L46374-01	MW-1 FLORA VISTA										Ö	

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 3
B	Filtered/Sulfuric	BLUE	pH must be < 2
BG	Filtered/Sulfuric	BLUE GLASS	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:_____ Project Name: Flora Vista Client: Burlington
Location:_ Well No: MW-1 Development **Sampling**
Project Manager MJN Date 9/30/04 Start Time 0830 Weather clear 60s
Depth to Water 16.82 Depth to Product na Product Thickness: na Measuring Point TOC
Water Column Height 8.53 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer **X** Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal **X** stabilization of Indicator Parameters **X** Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/**oz** to be removed
	Gallons	Ounces	
8.53 x .16	1.36		4.09

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
0849	**6.45**	**8740**	**61.5**				**0.5**	**clear**
	6.57	**8860**	**62.0**				**0.75**	**blackish,silty**
	6.53	**9340**	**62.1**				**1**	**brown, silty**
	6.11	**9410**	**61.6**				**1.75**	**brown, silty**
	6.39	**9560**	**61.3**				**2.5**	**brown, silty**
	6.24	**9600**	**61.4**				**3.0**	**brown, silty**
	6.21	**9430**	**61.5**				**4.0**	**brown, silty**
0903	**6.25**	**9440**	**61.2**				**4.25**	**brown, silty**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
0903	**6.25**	**9440**	**61.2**					**4.25**	**brown, silty**

COMMENTS well bailing down

INSTRUMENTATION: pH Meter **X** _____ Temperature Meter **x**
DO Monitor _____ Other _____
Conductivity Meter **X** _____
Water Disposal onsite Sample ID MW-1 Sample Time 0908
Analysis **BTEX**
MS/MSD_____ BD_____ BD Name/Time_____ TB tb092104-01

Burlington Resources, Inc.
Project ID:
Sample ID: MW-1 FLORA VISTA
Locator:

ACZ Sample ID: ***L48066-06***
Date Sampled: *09/30/04 9:08*
Date Received: *10/01/04*
Sample Matrix: *Ground Water*

Benzene, Toluene, Ethylbenzene & Xylene

Analysis Method: **M8021B GC/PID**
Extract Method: **Method**

Analyst: *km*
Extract Date: *10/06/04 19:34*
Analysis Date: *10/06/04 19:34*
Dilution Factor: *100*

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	9080			ug/L	30	100
Ethylbenzene	000100-41-4	1410		*	ug/L	20	100
m p Xylene	01330 20 7	9800		*	ug/L	40	200
o Xylene	00095-47- 6	180			ug/L	20	100
Toluene	000108-88-3	30	J		ug/L	20	100

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	94		%	83	117

** Please refer to Extended Qualifier Report for details.*

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:_____ Project Name: Flora Vista Client: Burlington
Location: Flora Vista No. 1 Well No: MW-1 Development **Sampling**
Project Manager MJN Date 12/13/04 Start Time 1615 Weather clear 30s
Depth to Water 20.40 Depth to Product na Product Thickness: na Measuring Point TOC
Water Column Height 4.95 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer **X** Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal **X** stabilization of Indicator Parameters **X** Other or bail dry

Gal/ft x ft of water	Water Volume in Well		**Gal**/oz to be removed
	Gallons	Ounces	
4.95 x .16	.792 x 3		2.376

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
1615	**6.10**	**1030**	**59.7**				**.25**	**Clear**
	6.10	**1030**	**60.2**				**.50**	**Black**
	6.06	**1020**	**60.7**				**1.0**	
	6.20	**1040**	**60.9**				**2.0**	
1624	**6.16**	**1010**	**60.4**				**2.5**	

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1624	**6.16**	**1010**	**60.4**					**2.5**	

COMMENTS well bailing down

INSTRUMENTATION: pH Meter **X** _____ Temperature Meter **x**
DO Monitor _____ Other _____
Conductivity Meter **X** _____
Water Disposal onsite Sample ID MW-1 Sample Time 1627
Analysis **BTEX**
MS/MSD_____ BD_____ BD Name/Time_____ TB_____

Burlington Resources, Inc.
Project ID: MISC GW SAMPLES
Sample ID: FLORA VISTA MW1
Locator:

ACZ Sample ID: ***L49179-01***
Date Sampled: *12/13/04 16:27*
Date Received: *12/15/04*
Sample Matrix: *Ground Water*

Benzene, Toluene, Ethylbenzene & Xylene

Analysis Method: **M8021B GC/PID**
Extract Method: **Method**

Analyst: *km*
Extract Date: *12/21/04 12:37*
Analysis Date: *12/21/04 12:37*
Dilution Factor: *50*

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	8520			ug/L	20	50
Ethylbenzene	000100-41-4	1340			ug/L	10	50
m p Xylene	01330 20 7	9300			ug/L	20	100
o Xylene	00095-47- 6	90			ug/L	10	50
Toluene	000108-88-3		U		ug/L	10	50

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	97.9		%	83	117

COPY

~~L49153~~ RMG 12/17/04 L49179

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Gregg Wurtz
Company: Burlington
E-mail:
Address: 3401 30TH ST
FARMINGTON NM 87499
Telephone: 505 326 9700

Copy of Report to:

Name:
Company:
E-mail:
Telephone:

Invoice to:

Name: SAME AS Above
Company:
Email:
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ☐ NO ☐
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

Quote #:
Project/PO #: Misc. Groundwater Sampl
Reporting state for compliance testing:
Are any samples NRC licensable material?

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	BTEX							
Marcotte MW2	121304 0925	GW	2	✓							
Marcotte MW1	121304 0950	GW	2	✓							
Marcotte MW 3	121304 1010	GW	2	✓							
Cozzens MW 1	121304 1540	GW	2	✓							
Cozzens MW2	121304 1555	GW	2	✓							
Flora Vista MW1	121304 1607	GW	2	✓							
TB 120904-01	121304 1730	O	1	✓							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

PLEASE PROVIDE SEPARATE REPORT FOR EACH LOCATION

Please refer to ACZ's terms & conditions located on the reverse side of this COC

RELINQUISHED BY	DATE:TIME	RECEIVED BY	DATE:TIME
D [illegible] (NEE)	12-13-04 2015	Rebecca Money	12/15/04 1000

SAMPLED BY

Martin Nee as per
Greg Wurtz
RMG 12/15/04

INTERNAL USE ONLY

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 30, 2004

Report to:
Gregg Wurtz
Burlington Resources, Inc.
3401 E. 30th St. PO BOX 4289
Farmington, NM 87499

Bill to:
Gregg Wurtz
Burlington Resources, Inc.
3401 E. 30th St. PO BOX 4289
Farmington, NM 87499

Project ID: MISC GW SAMPLES
ACZ Project ID: L49179

Gregg Wurtz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 15, 2004. This project has been assigned to ACZ's project number, L49179. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L49179. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 30, 2005. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs.

If you have any questions, please contact your Project Manager or Customer Service Representative.

30/Dec/04

Sue Barkey, Project Manager, has reviewed and approved this report in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac

ACIL

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
LCL	Lower Control Limit
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
UCL	Upper Control Limit
Sample	Value of the Sample of interest

QC Sample Types

SURR	Surrogate	*LFM*	Laboratory Fortified Matrix
INTS	Internal Standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
LCSS	Laboratory Control Sample - Soil	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSW	Laboratory Control Sample - Water	*PBS*	Prep Blank - Soil
LFB	Laboratory Fortified Blank	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

B	Analyte detected in daily blank
H	Analysis exceeded method hold time.
J	Analyte concentration detected at a value between MDL and PQL
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	Analyte was analyzed for but not detected at the indicated MDL
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
X	Quality contreol sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
P	Analyte concentration differs from second detector by more than 40%.
E	Analyte concentration is estimated due to result exceeding calibration range.
M	Analyte concentration is estimated due to matrix interferences.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
(3)	EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December, 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Organic analyses are reported on an "as received" basis.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Extended Qualifier Report

Burlington Resources, Inc.

ACZ Project ID: ***L49179***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION

No extended qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Burlington Resources, Inc.
MISC GW SAMPLES

ACZ Project ID: L49179
Date Received: 12/15/2004
Received By:

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?	X		
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?		X	
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?	X		
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

"Sampled by" not relinquished

Contact (For any discrepancies, the client must be contacted)

Gregg Wurtz was contacted. Gregg indicated who did the sampling.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
acz		8.5	13

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Burlington Resources, Inc.
MISC GW SAMPLES

ACZ Project ID: L49179
Date Received: 12/15/2004
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	Y < 2	YG< 2	B < 2	BG< 2	O < 2	T >12	P >12	N/A	RAD
L49179-01	FLORA VISTA MW1										X	

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BG	Filtered/Sulfuric	BLUE GLASS	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30001.0 Project Name: Burlington Flora Vista Client: Burlington Resources
Location: Flora Vista No. 1 Well No: MW-1 Development **Sampling**
Project Manager MJN Date 9/23/03 Start Time 1328 Weather sunny 80s
Depth to Water 17.03 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 8.32 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal X stabilization of Indicator Parameters X Other_____

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
8.23 x .16	1.33 x 3		3.99

Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)F	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	Comments/ Flow rate
1328	**6.87**	**1360**	**74.8**				**0.5**	**silty**
	6.89	**1430**	**73.2**				**1**	**silty**
	6.84	**1590**	**74.4**				**1.5**	**silty**
	6.90	**1550**	**71.5**				**2.75**	**silty**
	6.92	**1500**	**70.5**				**3.75**	**silty**
	6.96	**1490**	**70.4**				**4.0**	**silty**
1352	**7.01**	**1510**	**70.4**				**4.25**	**silty**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1352	**7.01**	**1510**	**70.4**					**4.25**	**silty**

COMMENTS: Well needs additional development

INSTRUMENTATION: pH Meter X _____ Temperature Meter x
DO Monitor _____ Other _____
Conductivity Meter X _____

Water Disposal onsite Sample ID Flora Vista 1 MW-1 Sample Time 1355
BTEX VOCs **Alkalinity TDS Cations Anions** Nitrate Nitrite Ammonia TKN **NMWQCC Metals**
Total Phosphorus
MS/MSD_____ BD_____ BD Name/Time_____ TB_____

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487(800) 334-5493

Inorganic Analytical Results

Burlington Resources, Inc.
Project ID:
Sample ID: FLORA VISTA MW-1

ACZ Sample ID: ***L43111-01***
Date Sampled: *09/23/03 13:55*
Date Received: *09/26/03*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	0.0088			mg/L	0.0001	0.0005	10/07/03 9:58	lcj
Barium, dissolved	M200.7 ICP	0.253			mg/L	0.003	0.01	10/17/03 22:44	scp
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	10/07/03 9:58	lcj
Calcium, dissolved	M200.7 ICP	164			mg/L	0.2	1	10/13/03 4:40	scp
Chromium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	10/07/03 9:58	lcj
Copper, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0005	0.003	10/07/03 9:58	lcj
Iron, dissolved	M200.7 ICP	4.28			mg/L	0.01	0.05	10/13/03 4:40	scp
Magnesium, dissolved	M200.7 ICP	18.7			mg/L	0.2	1	10/13/03 4:40	scp
Manganese, dissolved	M200.7 ICP	3.410		*	mg/L	0.005	0.03	10/13/03 4:40	scp
Potassium, dissolved	M200.7 ICP	2.9			mg/L	0.3	1	10/18/03 14:56	wfg
Sodium, dissolved	M200.7 ICP	105		*	mg/L	0.3	1	10/17/03 22:44	scp
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	10/13/03 4:40	scp

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		502			mg/L	2	10	10/04/03 0:00	jjc
Carbonate as CaCO3			U		mg/L	2	10	10/04/03 0:00	jjc
Hydroxide as CaCO3			U		mg/L	2	10	10/04/03 0:00	jjc
Total Alkalinity		502			mg/L	2	10	10/04/03 0:00	jjc
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.7			%			10/20/03 0:00	calc
Sum of Anions		15.4			meq/L	0.1	0.5	10/20/03 0:00	calc
Sum of Cations		14.9			meq/L	0.1	0.5	10/20/03 0:00	calc
Chloride	M325.2 - Colorimetric	48			mg/L	1	5	10/09/03 15:27	ksj
Conductivity @25C	M120.1 - Meter	1100			umhos/cm	1	10	10/15/03 16:02	mah
Lab Filtration	SM 3030 B							09/29/03 18:13	jjr
Lab Filtration & Acidification	SM 3030 B							10/02/03 11:21	wfg
pH (lab)	M150.1 - Electrometric	7.3	H		units	0.1	0.1	10/15/03 16:02	mah
Sulfate	M375.3 - Gravimetric	190			mg/L	10	50	10/15/03 11:36	jjc

Burlington Resources, Inc.
Project ID:
Sample ID: FLORA VISTA MW-1

ACZ Sample ID: ***L43111-01***
Date Sampled: *09/23/03 13:55*
Date Received: *09/26/03*
Sample Matrix: *Ground Water*

Benzene, Toluene, Ethylbenzene & Xylene

Analysis Method: **M8021B GC/PID**
Extract Method: **Method**

Analyst: *km*
Extract Date: *10/02/03 2:00*
Analysis Date: *10/02/03 2:00*
Dilution Factor: *50*

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	7500		*	ug/L	20	50
Ethylbenzene	000100-41-4	660		*	ug/L	10	50
m p Xylene	01330 20 7	8550		*	ug/L	20	100
o Xylene	00095-47- 6	670		*	ug/L	10	50
Toluene	000108-88-3	20	J	*	ug/L	10	50

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	91.5	*	%	84	114

** Please refer to Extended Qualifier Report for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Reference

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
LCL	Lower Control Limit
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
UCL	Upper Control Limit
Sample	Value of the Sample of interest

QC Sample Types

SURR	Surrogate	*LFM*	Laboratory Fortified Matrix
INTS	Internal Standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
LCSS	Laboratory Control Sample - Soil	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSW	Laboratory Control Sample - Water	*PBS*	Prep Blank - Soil
LFB	Laboratory Fortified Blank	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

B	Analyte detected in daily blank
H	Analysis exceeded method hold time.
J	Analyte concentration detected at a value between MDL and PQL
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	Analyte was analyzed for but not detected at the indicated MDL
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
X	Quality contreol sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
P	Analyte concentration differs from second detector by more than 40%.
E	Analyte concentration is estimated due to result exceeding calibration range.
M	Analyte concentration is estimated due to matrix interferences.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
(3)	EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December, 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Organic analyses are reported on an "as received" basis.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Burlington Resources, Inc.

ACZ Project ID: ***L43111***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L43111-01	WG163030	Copper, dissolved	M200.8 ICP-MS	MA	One spike recovery was outside of the method limits; the duplicate spike and the method control recoveries were within the method limits.
	WG163330	Manganese, dissolved	M200.7 ICP	M3	The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.
	WG163546	Sodium, dissolved	M200.7 ICP	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
			M200.7 ICP	ZK	Target analyte detected in the blank as a negative result at or above the negative method limit (i.e. high negative bias). Sample concentration is at a minimum ten times greater than positive method reporting limit.

Project No.: 30001.0 Project Name: Burlington Flora Vista Client: Burlington Resources
Location: Flora Vista No. 1 Well No: MW-1 Development **Sampling**
Project Manager MJN Date 12/16/03 Start Time 1000 Weather cloudy 40s
Depth to Water 20.11 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 5.24 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal X stabilization of Indicator Parameters X Other_____

	Water Volume in Well		
Gal/ft x ft of water	Gallons	Ounces	Gal/oz to be removed
5.24 x .16	0.84 x 3		2.52

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	Comments/ Flow rate
1010	**6.55**	**2220**	**53.6**				**.25**	**Grey Heavy Silt**
	6.52	**2310**	**54.8**				**.5**	**Grey Heavy Silt**
	6.51	**2380**	**58.1**				**.75**	**Grey Heavy Silt**
	6.51	**2410**	**59.1**				**1.0**	**Grey Heavy Silt**
	6.50	**2410**	**59.0**				**1.25**	**Grey Heavy Silt**
	6.52	**2430**	**59.1**				**1.75**	**Grey Heavy Silt**
	6.53	**2430**	**59.0**				**2.0**	**Grey Heavy Silt**
	6.51	**2420**	**59.1**				**2.25**	**Grey Heavy Silt**
	6.51	**2410**	**59.2**				**3.5**	**Grey Heavy Silt**
1025	**6.50**	**2390**	**59.2**				**5.75**	**Grey Heavy Silt**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1025	**6.5**	**2390**	**59.2**					**5.75**	**Grey Heavy Silt**

INSTRUMENTATION: pH Meter X _____ Temperature Meter x
DO Monitor _____ Other _____
Conductivity Meter X _____

Water Disposal onsite Sample ID Flora Vista 1 MW-1 Sample Time 1030
BTEX VOCs **Alkalinity TDS Cations Anions** Nitrate Nitrite Ammonia TKN **NMWQCC Metals**
Total Phosphorus
MS/MSD_____ BD_____ BD Name/Time_____ TB_____

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Burlington Resources, Inc.
Project ID: MISC. GW SAMPLING
Sample ID: MW-1 FLORA VISTA

ACZ Sample ID: ***L44072-13***
Date Sampled: *12/16/03 10:30*
Date Received: *12/17/03*
Sample Matrix: *Ground Water*

Benzene, Toluene, Ethylbenzene & Xylene

Analysis Method: **M8021B GC/PID**
Extract Method: **Method**

Analyst: *km*
Extract Date: *12/20/03 2:03*
Analysis Date: *12/20/03 2:03*
Dilution Factor: *50*

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	7930			ug/L	20	50
Ethylbenzene	000100-41-4	1180			ug/L	10	50
m p Xylene	01330 20 7	8480			ug/L	20	100
o Xylene	00095-47- 6	160			ug/L	10	50
Toluene	000108-88-3	10	J		ug/L	10	50

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	90.5		%	84	114

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
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PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
UCL	Upper Control Limit
Sample	Value of the Sample of interest

QC Sample Types

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INTS	Internal Standard	*LFMD*	Laboratory Fortified Matrix Duplicate
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Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
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Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

B	Analyte detected in daily blank
H	Analysis exceeded method hold time.
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(2)	EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
(3)	EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December, 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Organic analyses are reported on an "as received" basis.

Field Excavation Work Log and Soil Excavation Analytical Results

Flora Vista 1 June 19 – July 7, 2003

Burlington Resources

Field Notes

June 19:

This pit remediation was started at an earlier date with an original size of 40' x 47' x 16' for a total approximation of 1114 cubic yards. Beginning on this date – ramped down on west wall; hit water at 25'. Removed an additional 924 cubic yards of soil; 50% was contaminated and 50% was not.

16 feet – PID 1585 ppm
23 feet – PID 830 ppm
25 feet – water

June 20:

Obtained water sample and delivered to On-Site Lab. Continued digging on west wall. A four-point composite on this wall showed a head space reading of 98.8 ppm. This composite sample was also delivered to On-Site Lab. Of the approximated 1152 cubic yards removed on this day, 50% was estimated to be contaminated and 50% was not.

June *23*:

Stripped out and moved gas line from wellhead to dehydrator. Stripped out farm tap line. Worked on north wall, stair-stepping to northeast. A four-point composite on this wall showed a head space reading of 20 ppm. This composite sample was taken to On-Site Lab. Of the approximated 296 cubic yards removed this day, 50% was contaminated and 50% was not.

Flora Vista 1

Burlington Resources

June 24:

Started stripping overburden on south wall. Removed contaminated soil. A three-point composite reading showed a headspace reading of 56.6 ppm. Of the approximated 1167 cubic yards of soil removed this day, 40% was contaminated and 60% was not.

June 25:

Stripped overburden on east wall in a 25' x 90' x 12' strip. Ramped in on north wall. Found a highly contaminated small area (10' x 10') running to surface. This area was located just to the west of Merrion Oil Company water tank.

Started removing contamination. East wall was still determined to be contaminated. Of approximated 1222 cubic yards removed this day, 20% was contaminated and 80% was not.

June 26:

Continued to remove contaminated soil from east side. On the west side of the Merrion Oil Company water tank, another old extremely contaminated pit was discovered. The contamination continued underneath the Merrion tank. Merrion Oil removed this tank and pipes to the tank. Of the approximated 713 cubic yards of soil removed this day, 100% was contaminated.

June 27:

Started ramping down to remove another 25' strip on east wall. Removed approximately 741 cubic yards of non-contaminated soil this day.

Flora Vista 1

Burlington Resources

June 30:

Started removing contamination from strip – east wall began to appear less contaminated on the south end. Approximately 50' of east wall cleaned up, but a 4' x 30' strip on northeast corner did not. A sample of this contamination was delivered to On-Site Lab. Directed by Burlington representative to avoid row of large cottonwood trees on east side of excavation ; contamination was running northeast in the direction of these trees, so overburden was stripped. Of the approximated 1514 cubic yards of soil removed on this day, 80% was contaminated and 20% was clean.

July 1:

Overnight, a great deal of contaminated soil located on east wall fell out. Were able to remove most of it before overburden fell; however, a sample was not available to obtain from this area. Continued to strip overburden on northeast corner. Removed enough contaminated soil to assess this area as no longer being contaminated. Of the approximated 600 cubic yards of soil removed this day, 25% was contaminated, and 75% was not.

July 2:

Backfilled pit

July 7:

Backfilled pit and bladed location. Moved equipment.

Flora Vista 1

Burlington Resources

SUMMARY:

June 19	924 cubic yards
June 20	1152 cubic yards
June 23	296 cubic yards
June 24	1167 cubic yards
June 25	1222 cubic yards
June 26	713 cubic yards
June 27	741 cubic yards
June 30	1514 cubic yards
July 1	600 cubic yards

8329 cubic yards

1114 previously removed

9443 total cubic yards

277 truck loads contaminated soil @ 18 cubic yards / truckload = 4986 cubic yards taken to Eco-Systems' land farm.

247 truckloads uncontaminated soil @ 18 cubic yards / truckload = 4446 cubic yards taken to location to fill pit.

RECORD OF SUBSURFACE EXPLORATION

Lodestar Services, Inc

PO Box 3681
Farmington, New Mexico 87499
(505) 334-2791

Project Name: Burlington Resources Flora Vista 1
Project Number: 30003 Phase:
Project Location: mm 8 nm 516

Elevation: 5534'
Borehole Location: center of former pit
GWL Depth: -15.47
Logged By: MJN
Drilled By: Envirotech
Date/Time Started: September 2, 2003
Date/Time Completed: September 2, 2003

Well Logged By: M Nee
Personnel On-Site: K Padilla, T. Benally
Contractors On-Site: Envirotech
Client Personnel On-Site: G Wurtz

Drilling Method: CME 75 Hollow Stem Auger
Air Monitoring Method: Photo Vac 2020

Depth (Feet)	Sample Interval	Sample Type & Recovery (%)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU BZ	BH	S	Drilling Conditions & Blow Counts
0			0-18 ' Backfill material in former excavated pit. Brown clayey sand with grave and cobbles encountered at 8-13 ft.			0			
5									
10									cobbles and gavel 8 and 13 feet
15									
20	18-20	85	18-20.5' colar change to gray, old hc odor, sandy clay		18	0			
	20-22	50	20.5-21.5 clean well sorted sand, gray, medium size grains.		20.5 21.5	0 0			
	22-24	80	21.5-22.0 clay, gray 22-28' Clayey sand, gray, sand is med-fine grained.		22	0			
25									
30									
35									
40									

Comments: **Borehole logged on cuttings 0-18 feet. Water at 18.9' bgs @0928, 18.15' bgs @0933, 17.15'@ 0938, 17.55' @ 0943**

Geologist Signature

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

June 23, 2003

Sample of free standing water in bottom of excavation.

Greg Wurtz
Burlington Resources
3535 E. 30th Street
P.O. Box 4289
Farmington, NM 87499

TEL: (505) 326-9700
FAX (505) 326-9725

RE: Burlington Resources

Order No.: 0306038

Dear Greg Wurtz:

iiná bá, Ltd. received 1 sample on 6/20/2003 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

David Cox

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

iiná bá, Ltd.

Date: *23-Jun-03*

CLIENT: Burlington Resources
Project: Burlington Resources
Lab Order: 0306038

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

ANALYTICAL REPORT

Date: *23-Jun-03*

CLIENT:	Burlington Resources	**Client Sample Info:**	Burlington Resources
Work Order:	0306038	**Client Sample ID:**	0306200842
Project:	Burlington Resources	**Collection Date:**	6/20/2003 8:42:00 AM
Lab ID:	0306038-001A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **JEM**
Benzene	1700	25		µg/L	50	6/20/2003
Toluene	300	25		µg/L	50	6/20/2003
Ethylbenzene	490	25		µg/L	50	6/20/2003
m,p-Xylene	4700	50		µg/L	50	6/20/2003
o-Xylene	390	25		µg/L	50	6/20/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted precision limits

E - Value above Upper Quantitation Limit - UQL

una va (for life's sake)

612 E. Murray Dr. • P. O. Box 2606 • Farmington NM 87499
(505) 327-1072 • FAX: (505) 327-1496

Date: 6/20/03

Purchase Order No.: | Job No.:

SEND INVOICE TO
Name: Greg Wurtz
Company: Burlington | Dept.:
Address:
City, State, Zip:

REPORT RESULTS TO
Name: Greg Wurtz | Title:
Company:
Mailing Address:
City, State, Zip:
Telephone No.: | Telefax No.:

Sampling Location:

Sampler:

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	8021 BTEX									LAB ID
0306200842	6/20/03	0842	H_2O	HCl	2										[illegible]

Relinquished by: [signature]	Date/Time 6/20/03 1233	Received by: [signature]	Date/Time 6/20/03 123[illegible]
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: ______________________ Date ________
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:
[illegible]			[illegible]

Distribution: White – On Site Yellow – LAB Pink – Sampler Goldenrod – Client

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

July 10, 2003

Greg Wurtz
Burlington Resources
3535 E. 30th Street
P.O. Box 4289
Farmington, NM 87499

TEL: (505) 326-9537
FAX (505) 599-4005

RE: Flora Vista 1

Order No.: 0307002

Dear Greg Wurtz:

iiná bá, Ltd. received 1 sample on 7/1/2003 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

David Cox

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

iiná bá, Ltd.

Date: *10-Jul-03*

CLIENT: Burlington Resources
Project: Flora Vista 1
Lab Order: 0307002

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s), the quality control summary report(s) or the sample receipt checklist.

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

iiná bá

P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

ANALYTICAL REPORT

Date: *10-Jul-03*

CLIENT:	Burlington Resources	**Client Sample Info:**	East Wall 3pt. Comp
Work Order:	0307002	**Client Sample ID:**	0307011155
Project:	Flora Vista 1	**Collection Date:**	7/1/2003 11:55:00 AM
Lab ID:	0307002-001A	**Matrix:**	SOIL

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		**SW8015B**				Analyst: **JEM**
T/R Hydrocarbons: C10-C28	ND	60.2		mg/Kg-dry	1	7/9/2003
GASOLINE RANGE ORGANICS		**SW8015B**				Analyst: **JEM**
T/R Hydrocarbons: C6-C10	ND	5.42		mg/Kg-dry	25	7/9/2003
PERCENT MOISTURE		**D2216**				Analyst: **JEM**
Percent Moisture	17	0.1		wt%	1	7/9/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

iiná bá
(for life's sake)

612 E. Murray Dr. • P. O. Box 2606 • Farmington NM 87499
(505) 327-1072 • FAX: (505) 327-1496

Date: 7/1/03

Purchase Order No.: | Job No.:

SEND INVOICE TO
Name: Greg Wurtz
Company: Burlington Resources | Dept.:
Address: P.O. Box 4289
City, State, Zip: Farmington, N. Mex 87499-4289

REPORT RESULTS TO
Name: Greg Wurtz | Title:
Company: Burlington Resources
Mailing Address: P.O. Box 4289
City, State, Zip: Farmington, N. Mex 87499-4289
Telephone No.: 326-9537 | Telefax No.:

Sampling Location: [illegible] 1 East Wall 3pt. Comp

Sampler: [illegible] Dudrick

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	ANALYSIS REQUESTED: 8015 mod [illegible]									LAB ID
0307011155 East Wall 3.1 Comp	7/1/03	1155	Soil	Ice	1	X									0307002-001

Relinquished by:	Date/Time	Received by:	Date/Time
[illegible] Dudrick	7/1/03 1458	[illegible] Carter	7/1/03 3:0[illegible]

Method of Shipment:

Authorized by: ______ Date ______
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:
		X	Temp. 12.5 °C

Distribution: White – On Site Yellow – LAB Pink – Sampler Goldenrod – Client

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

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P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

June 25, 2003

Greg Wurtz
Burlington Resources
3535 E. 30th Street
P.O. Box 4289
Farmington, NM 87499

TEL: 505-326-9700
FAX 505-326-9725

RE: Flora Vista 1

Order No.: 0306043

Dear Greg Wurtz:

iiná bá, Ltd. received 2 samples on 6/23/2003 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

David Cox

612 E. Murray Drive
Farmington, NM 87499

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FAX: (505) 327-1496

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P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

iiná bá, Ltd.

Date: *25-Jun-03*

CLIENT: Burlington Resources
Project: Flora Vista 1
Lab Order: 0306043

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s), the quality control summary report(s) or the sample receipt checklist.

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Off: (505) 368-4065

ANALYTICAL REPORT

Date: *25-Jun-03*

CLIENT:	Burlington Resources	**Client Sample Info:**	West Wall 3pt. Comp.
Work Order:	0306043	**Client Sample ID:**	0306201423
Project:	Flora Vista 1	**Collection Date:**	6/20/2003 2:23:00 PM
Lab ID:	0306043-001A	**Matrix:**	SOIL

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		**SW8015B**				Analyst: **JEM**
T/R Hydrocarbons: C10-C28	ND	25.0		mg/Kg	1	6/24/2003
GASOLINE RANGE ORGANICS		**SW8015B**				Analyst: **JEM**
T/R Hydrocarbons: C6-C10	ND	4.50		mg/Kg	25	6/23/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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Off: (505) 368-4065

ANALYTICAL REPORT

Date: *25-Jun-03*

CLIENT: Burlington Resources
Work Order: 0306043
Project: Flora Vista 1
Lab ID: 0306043-002A

Client Sample Info: North Wall 3pt. Comp.
Client Sample ID: 0306231130
Collection Date: 6/20/2003 11:30:00 AM
Matrix: SOIL

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		**SW8015B**				Analyst: **JEM**
T/R Hydrocarbons: C10-C28	ND	25.0		mg/Kg	1	6/24/2003
GASOLINE RANGE ORGANICS		**SW8015B**				Analyst: **JEM**
T/R Hydrocarbons: C6-C10	ND	4.50		mg/Kg	25	6/23/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

iná bá, Ltd.

Sample Receipt Checklist

Client Name: BUR1001 | Date and Time Received: 6/23/2003

Work Order Number: 0306043 | Received by: HNR

Checklist completed by: [signature] 6/23/03 (Signature / Date) | Reviewed by: jm 6/23/03 (Initials / Date)

Matrix: | Carrier name: Courier

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐
Water - pH acceptable upon receipt?	Yes ☑ N/A	No ☐	

Adjusted? _____ Checked by: _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action: _____

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612 E. Murray Dr. • P. O. Box 2606 • Farmington NM 87499
(505) 327-1072 • FAX: (505) 327-1496

Date: 6/23/03

Purchase Order No.: | Job No.:

SEND INVOICE TO
Name: Greg Wurtz
Company: Burlington Resources | Dept.:
Address: P.O. Box 4289
City, State, Zip: Farmington, N. Mex 87499-4289

REPORT RESULTS TO
Name: Greg Wurtz | Title:
Company: Burlington
Mailing Address:
City, State, Zip:
Telephone No.: | Telefax No.:

Sampling Location: Flora Vista 1

Sampler: Ron Rodrick

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	8015 DRO/GRO								LAB ID
030620 1423 West Wall 3pt Comp	6/20/03	1423	Soil	Ice	1	X								0306015.001
030623 1130 ~~East~~ Wall 3 pt. Comp	6/23/03	1130	Soil	Ice	1	X								[illegible] .002

Relinquished by: [signature] | Date/Time: 6/23/03 836 | Received by: [signature] | Date/Time: 6/23/03 [illegible]
Relinquished by: | Date/Time: | Received by: | Date/Time:
Relinquished by: | Date/Time: | Received by: | Date/Time:

Method of Shipment:

Rush | 24-48 Hours: X | 10 Working Days | Special Instructions: on ice

Authorized by: ______ Date ______
(Client Signature Must Accompany Request)

Distribution: White – On Site Yellow – LAB Pink – Sampler Goldenrod – Client

612 E. Murray Drive
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P.O. Box 3788
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Off: (505) 368-4065

July 02, 2003

Greg Wurtz
Burlington Resources
3535 E. 30th Street
P.O. Box 4289
Farmington, NM 87499

TEL: 505-326-9700
FAX 505-326-9725

RE: Flora Vista 1

Order No.: 0306050

Dear Greg Wurtz:

iiná bá, Ltd. received 2 samples on 6/25/2003 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

David Cox

612 E. Murray Drive
Farmington, NM 87499

Off: (505) 327-1072
FAX: (505) 327-1496

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P.O. Box 3788
Shiprock, NM 87420

Off: (505) 368-4065

iiná bá, Ltd.

Date: *02-Jul-03*

CLIENT: Burlington Resources
Project: Flora Vista 1
Lab Order: 0306050

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s), the quality control summary report(s) or the sample receipt checklist.

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Off: (505) 368-4065

ANALYTICAL REPORT

Date: *02-Jul-03*

CLIENT:	Burlington Resources	**Client Sample Info:**	South Wall 3pt. Comp.
Work Order:	0306050	**Client Sample ID:**	030624 1634
Project:	Flora Vista 1	**Collection Date:**	6/24/2003 4:34:00 PM
Lab ID:	0306050-001A	**Matrix:**	SOIL

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		**SW8015B**				Analyst: **JEM**
T/R Hydrocarbons: C10-C28	ND	25.0		mg/Kg	1	6/26/2003
GASOLINE RANGE ORGANICS		**SW8015B**				Analyst: **JEM**
T/R Hydrocarbons: C6-C10	ND	4.50		mg/Kg	25	6/30/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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Shiprock, NM 87420

Off: (505) 368-4065

ANALYTICAL REPORT

Date: *02-Jul-03*

CLIENT:	Burlington Resources	**Client Sample Info:**	East Wall Grab
Work Order:	0306050	**Client Sample ID:**	0306251611
Project:	Flora Vista 1	**Collection Date:**	6/25/2003 4:11:00 PM
Lab ID:	0306050-002A	**Matrix:**	SOIL

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **JEM**
Benzene	ND	25		µg/Kg	25	6/26/2003
Ethylbenzene	170	25		µg/Kg	25	6/26/2003
m,p-Xylene	1400	50		µg/Kg	25	6/26/2003
o-Xylene	160	25		µg/Kg	25	6/26/2003
Toluene	ND	50		µg/Kg	25	6/26/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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(505) 327-1072 • FAX: (505) 327-1496

Date: 6/25/03

Purchase Order No.:
Job No.:

SEND INVOICE TO
Name: Greg Wurtz
Company: Burlington
Dept.:
Address:
City, State, Zip:

REPORT RESULTS TO
Name: Greg Wurtz
Title:
Company:
Mailing Address:
City, State, Zip:
Telephone No.:
Telefax No.:

Sampling Location: Fjord Vista 1

Sampler: R. Dedrick

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	8015 DRO/GRO	8021 BTEX								LAB ID
030624/1634 South Wall 3pt Comp	6/24/03	1634	Soil	Ice	1	X									0306050-001A
030625/1611 East Wall Grab	6/25/03	1611	Soil	Ice			X								↓ -002A

Relinquished by:	Date/Time	Received by:	Date/Time
R. (R) Dedrick	6/25/03 14:38	J. Moore	6/25/03 16:[illegible]

Method of Shipment:

Authorized by: ____________ Date ____________
(Client Signature Must Accompany Request)

Rush / 24-48 Hours ✓ / 10 Working Days

Special Instructions:

Distribution: White – On Site Yellow – LAB Pink – Sampler Goldenrod – Client

DRILLING LOGS/WELLBORE DIAGRAMS

MONITORING WELL INSTALLATION RECORD

Borehole # 1
Well # 1
Page 1 of 1

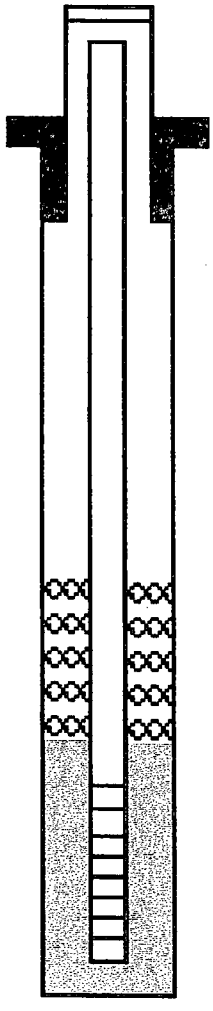
Lodestar Services, Inc
PO Box 3861
Farmington, New Mexico 87499
(505) 334-2791

Project Name	Burlington Resources Flora Vista 1
Project Number	30003.0 Cost Code
Project Location	US Highway 516 MM 8
On-Site Geologist	M. Nee
Personnel On-Site	K. Padilla, T. Benally
Contractors On-Site	Envirotech
Client Personnel On-Site	G. Wurtz

Elevation	5534'
Well Location	Center of former pit
GWL Depth	17.55 beneath ground surface
Installed By	Envirotech
Date/Time Started	9/2/03 0700
Date/Time Completed	9/2/03 1230

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing	Flush to grade vault	
Bottom of Protective Casing		na
Top of Permanent Borehole Casing		na
Bottom of Permanent Borehole Casing		na
Top of Concrete	2 bags quickcrete	0.0
Bottom of Concrete		-0.5
Top of Grout	4 96# bags portland with 5% hole plug	-0.5
Bottom of Grout		-7.0
Top of Well Riser	2" flush threaded schedule 40 pvc	-.33
Bottom of Well Riser		-11.02
Top of Well Screen	10 slot schedule 40 flush threaded pvc	-11.02
Bottom of Well Screen		-26.02
Top of Peltonite Seal	1 bag 3/8 bentonite chips	-7.0
Bottom of Peltonite Seal		-9.6
Top of Gravel Pack	8 #50 bags 10-20 silica sand	-9.6
Bottom of Gravel Pack		-23.2
Top of Natural Cave-In		-23.2
Bottom of Natural Cave-In		-28
Top of Groundwater		-15.8
Total Depth of Borehole		-28'



Top of Protective Casing	0.0
Top of Riser	-0.33
Ground Surface	0.0
Top of Seal	-7.0
Top of Gravel Pack	-9.6
Top of Screen	-11.02
Bottom of Screen	-26.02
Bottom of Borehole	-28.0

Comments: Water level is 15.47 beneath top of casing

Geologist Signature