FORM 4 Rev 12/05

Page 1

State of Colorado
Oil and Gas Conservation Commission

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

SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry Information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

DN	ET	OE	ES		

1. OGCC Operator Number: 10071
2. Name of Operator: Bill Barrett Corporation
3. Address: 112 Red Feather Trail
   City: Silt State: CO Zip: 81652
4. Contact Name: Scott Ghan
   Phone: 970-867-1959
   Fax: 970-876-0981

Complete the Attachment Checklist

	OP	OGCC
Survey Plat		
Directional Survey		
Surface Eqpmt Diagram		
Technical Info Page		
Other		

5. API Number 05-083-06637 OGCC Facility ID Number Loc. 315612
6. Well/Facility Name: KOSKIE-BRUMLEY DRAW 7. Well/Facility Number 15H-27-38-16
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): SWSE 27 38N 16W N PM
9. County: MONTEZUMA 10. Field Name: PEDRO
11. Federal, Indian or State Lease Number:

General Notice

☐ **CHANGE OF LOCATION:** **Attach New Survey Plat** (a change of surface qtr/qtr is substantive and requires a new permit)

	FNL/FSL		FEL/FWL	
Change of **Surface** Footage from Exterior Section Lines:				
Change of **Surface** Footage to Exterior Section Lines:				
Change of **Bottomhole** Footage from Exterior Section Lines:				
Change of **Bottomhole** Footage to Exterior Section Lines:				attach directional survey

Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer

Latitude ____ Distance to nearest property line ____ Distance to nearest bldg, public rd, utility or RR ____
Longitude ____ Distance to nearest lease line ____ Is location in a High Density Area (rule 603b)? Yes/No ____
Ground Elevation ____ Distance to nearest well same formation ____ Surface owner consultation date: ____

GPS DATA:
Date of Measurement ____ PDOP Reading ____ Instrument Operator's Name ____

☐ **CHANGE SPACING UNIT**

Formation	Formation Code	Spacing order number	Unit Acreage	Unit configuration

☐ **Remove from surface bond** Signed surface use agreement attached

☐ **CHANGE OF OPERATOR (prior to drilling):**
Effective Date: ____
Plugging Bond: ☐ Blanket ☐ Individual

☐ **CHANGE WELL NAME** **NUMBER**
From: ____
To: ____
Effective Date: ____

☐ **ABANDONED LOCATION:**
Was location ever built? ☐ Yes ☐ No
Is site ready for Inspection? ☐ Yes ☐ No
Date Ready for Inspection: ____

☐ **NOTICE OF CONTINUED SHUT IN STATUS**
Date well shut in or temporarily abandoned: ____
Has Production Equipment been removed from site? ☐ Yes ☐ No
MIT required if shut in longer than two years. Date of last MIT ____

☐ **SPUD DATE:** ____

☐ **REQUEST FOR CONFIDENTIAL STATUS** (6 mos from date casing set)

☐ **SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK** *submit cbl and cement job summaries

Method used	Cementing tool setting/perf depth	Cement volume	Cement top	Cement bottom	Date

☐ **RECLAMATION:** Attach technical page describing final reclamation procedures per Rule 1004.
Final reclamation will commence on approximately ____ ☐ Final reclamation is completed and site is ready for inspection.

Technical Engineering/Environmental Notice

☐ Notice of Intent Approximate Start Date: ____
☐ Report of Work Done Date Work Completed: ____

Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)

☐ Intent to Recomplete (submit form 2)	☐ Request to Vent or Flare	☐ E&P Waste Disposal
☐ Change Drilling Plans	☐ Repair Well	☐ Beneficial Reuse of E&P Waste
☐ Gross Interval Changed?	☒ Rule 502 variance requested	☐ Status Update/Change of Remediation Plans
☐ Casing/Cementing Program Change	☐ Other: ____	for Spills and Releases

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

Signed: ____ Date: 1/26/2011 Email: sghan@billbarrettcorp.com

Print Name: Scott Ghan Title: Environmental Health & Safety Coordinator

COGCC Approved: ____ Title Env. Sup. Date: 5/12/11

CONDITIONS OF APPROVAL, IF ANY:

Pen mtg w/ COA's on 5/12/11

FORM 4 Rev 12/05

TECHNICAL INFORMATION PAGE

FOR OGCC USE ONLY

1. OGCC Operator Number: 10071 API Number: 05-083-06637
2. Name of Operator: Bill Barrett Corporation OGCC Facility ID #
3. Well/Facility Name: KOSKIE-BRUMLEY DRAW Well/Facility Number: 15H-27-38-16
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): SWSE 27 38N 16W N PM

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. **DESCRIBE PROPOSED OR COMPLETED OPERATIONS**

Bill Barrett Corporation (BBC) respectfully requests a variance pursuant to Rule 502 in consideration of arsenic concentrations that exceed COGCC Table 910-1 concentration levels and background concentrations.
BBC has conducted extensive mixing with native fill in an effort to stabilize the cuttings for burial as well as reduce metals concentrations to meet Table 910-1 levels. Currently, the arsenic concentration in the mixed cuttings is 2.68 mg/kg, while the background concentration is as high as 2.33 mg/kg. This results in a mixed cuttings arsenic concentration exceedance of only 0.35 mg/kg. Given the elevated background arsenic concentrations (2.33 mg/kg) in this area, and the fact that the cuttings mixture is buried beneath a minimum of three feet of native fill, the remaining level of arsenic in the buried cuttings does not represent a significant risk to human health or the environment.

Subsequent mixing of the cuttings will inevitably delay closure of the pit as well as produce a surplus of mixed soil at the site, which will need to be hauled off for reuse on other pads or hauled for disposal at a high cost. Please see the attached letter for details regarding pit closure activities and recommendation for a Form 4 variance request.

COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.
820 Megan Avenue, Unit B
Rifle, Colorado 81650
T 970.285.9985 / F 970.285.2467

January 25, 2011

Mr. Scott Ghan
Bill Barrett Corporation
112 Red Feather Trail
Silt, CO 81652

Re: Documentation of Field Activities and Sample Results for the Koskie 15H-27 Pad Drilling/Completions Pit Closure (05-083-06637) SWSE 27 T38N R16W N PM

Dear Mr. Ghan:

LT Environmental, Inc. (LTE) was contracted by Bill Barrett Corporation (BBC) to provide environmental sampling activities at the above-referenced site. The scope of work consisted of drill cuttings sampling, background soil sampling, laboratory analysis, and documentation of field activities.

On March 31, 2009, an LTE representative collected a drill cuttings sample prior to pit closure activities. The drilling/completions pit consisted of mixed drill cuttings remaining from the drilling process. LTE did not observe any discoloration, sheen, or odor that would indicate the pit had been adversely impacted by drilling activities.

Cuttings samples were collected from three separate locations in the pit and composited into one sample (Koskie 15H-27 Composite). The drill cuttings sample was submitted to a contract laboratory for analysis of the Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 metals by Environmental Protection Agency (EPA) Method 6010B, electrical conductivity (EC) by United States Department of Agriculture (USDA) handbook saturated paste method, pH by USDA handbook saturated paste method, sodium adsorption ratio (SAR) by calculation, and total petroleum hydrocarbons (TPH) by EPA Modified Method 8015. LTE also collected a representative background soil sample (Koskie 15H-27 BG) from beyond the pad surface that was submitted for analysis of COGCC Table 910-1 metals, EC, pH, and SAR.

Laboratory analytical results indicated that TPH and COGCC Table 910-1 metals concentrations (except for arsenic) in the drill cuttings sample were in compliance with COGCC Table 910-1 concentration levels. Arsenic, EC, pH, and SAR concentrations exceeded COGCC Table 910-1 concentration levels.

The arsenic concentration for the drill cuttings sample exceeded the COGCC Table 910-1 concentration level of 0.39 milligrams per kilogram (mg/kg), at 18.7 mg/kg. The arsenic concentration for the background sample was non-detect to the lowest laboratory reporting limit of 10 mg/kg.

According to BBC personnel, the sampled drill cuttings were mixed with native soil and buried at a minimum of 3-feet below ground surface and 3-feet above the static water level. The 3-foot soil cap will be composed of native soils from the area. Frequently asked question number 31 on the COGCC website explains that the COGCC will apply the Table 910-1 concentration levels for EC, pH, and SAR only to soils that are within 3 feet of the ground surface. As such, the COGCC requires that materials with elevated EC, pH, or SAR concentrations be buried under a minimum of 3 feet of cover and remain a minimum of 3 feet above the static water level. Although EC, pH, and SAR are parameters used to ensure proper reclamation of disturbed areas, limited exceedances of these parameters will not likely affect reclamation, as the mixed drill cuttings are to be buried below the vegetative root zone.

Following mixing activities, LTE collected a composite mixed drill cuttings sample on August 12, 2010. The second drill cuttings sample (Koskie 15H-27 Comp) was submitted for analysis of arsenic. Laboratory analytical results indicated the arsenic concentration for the second drill cuttings sample was 2.68 mg/kg, which exceeds the background arsenic concentration level by only 0.35 mg/kg.

LTE also collected six background soil samples on August 12 and 25, 2010 (Koskie 15H-27 BG01, BG02, BG03, BG04, FILL-1, and FILL-2) to determine the variability of the background arsenic concentrations. Background samples Koskie 15H-27 FILL-1 and FILL-2 were collected from the two remaining locations of potential backfill material. Each of the background soil samples were also submitted for analysis of arsenic.

This background arsenic level measured in a sample taken from native material that could be used to mix with the drill cuttings in an attempt to further lower the arsenic concentration is only 0.35 mg/kg less than the cuttings arsenic concentration. As the concentrations observed in the mixed cuttings and native sample differ by only 13%, additional mixing is unlikely to significantly lower the arsenic concentration of the cuttings. Due to the extremely low differential in arsenic concentrations between the cuttings mixture and native background samples, variability in soil sampling, and the potential for up to a 20% laboratory error, LTE believes that the arsenic concentration documented in the mixed cuttings is within an acceptable range of naturally-occurring background values and likely does not represent a significant change in risk to human health or the environment. As such, LTE believes that the arsenic concentration documented in the mixed cuttings is within an acceptable range of naturally-occurring background values. As such, LTE recommends BBC request a variance from the COGCC to allow the cuttings to be buried in place.

A generalized depiction of the reserve pit and sample locations is shown on the attached Figure 1. The soil sample analytical results are summarized in Table 1. A copy of the laboratory analytical reports is included as Appendix A.

Please call us at (970) 285-9985 if you have any questions regarding this letter report or require additional information.

Sincerely,

LT ENVIRONMENTAL, INC.

Asher Weinberg
Staff Environmental Scientist

Brian Dodek, P.G.
Client Manager/Project Geologist

Attachments (3):

Table 1 – Soil Analytical Results
Figure 1 – Site Sketch
Appendix A – Laboratory Analytical Reports

TABLE

TABLE 1
SOIL ANALYTICAL RESULTS
KOSKIE 15H-27
MONTEZUMA COUNTY, COLORADO
BILL BARRETT CORPORATION

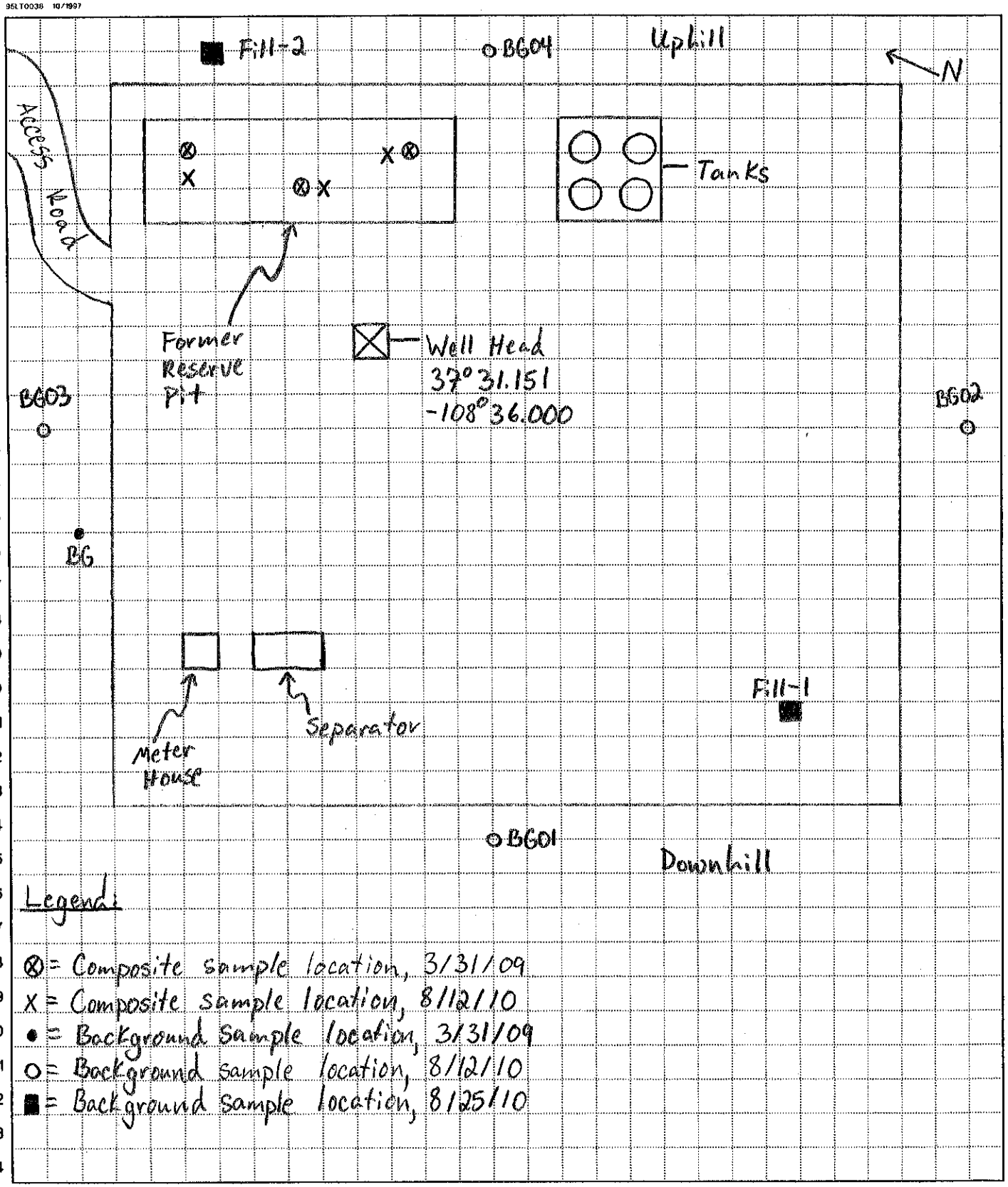
PARAMETER	COGCC STANDARD	UNITS	KOSKIE 15H-27 BG	KOSKIE 15H-27 COMP	KOSKIE 15H-27 COMP	KOSKIE 15H-27 BG01	KOSKIE 15H-27 BG02	KOSKIE 15H-27 BG03	KOSKIE 15H-27 BG04	KOSKIE 15H-27 FILL-1	KOSKIE 15H-27 FILL-2
Sample Date			3/31/2009	3/31/2009	8/12/2010	8/12/2010	8/12/2010	8/12/2010	8/12/2010	8/25/2010	8/25/2010
Sample Type			Background	Drill Cuttings	Drill Cuttings	Background	Background	Background	Background	Background	Background
Arsenic	0.39	mg/kg	**<10.0**	**18.7**	**2.68**	**1.84**	**2.08**	**1.87**	**1.94**	**1.93**	**2.33**
Barium	15,000	mg/kg	2,030	2,490	--	--	--	--	--	--	--
Boron		mg/kg	17.0	29.8	--	--	--	--	--	--	--
Cadmium	70	mg/kg	<1.0	<1.0	--	--	--	--	--	--	--
Chromium	120,000	mg/kg	14.8	40.6	--	--	--	--	--	--	--
Copper	3,100	mg/kg	8.6	9.98	--	--	--	--	--	--	--
Lead	400	mg/kg	10.3	<5.0	--	--	--	--	--	--	--
Mercury	23	mg/kg	<0.1	<0.1	--	--	--	--	--	--	--
Nickel	1,600	mg/kg	12.7	21.3	--	--	--	--	--	--	--
Selenium	390	mg/kg	<20.0	<20.0	--	--	--	--	--	--	--
Silver	390	mg/kg	<1.0	<1.0	--	--	--	--	--	--	--
Zinc	23,000	mg/kg	41.1	62.2	--	--	--	--	--	--	--
EC	4.0	mmhos/cm	1.07	**74.4**	--	--	--	--	--	--	--
pH	6 - 9	SU	7.55	**10.8**	--	--	--	--	--	--	--
Calcium		meq/L	6.24	46.6	--	--	--	--	--	--	--
Magnesium		meq/L	1.89	0.10	--	--	--	--	--	--	--
Sodium		meq/L	2.34	110	--	--	--	--	--	--	--
SAR	12	unitless	1.16	**22.9**	--	--	--	--	--	--	--
TPH-GRO		mg/kg	--	10.1	--	--	--	--	--	--	--
TPH-DRO		mg/kg	--	67.8	--	--	--	--	--	--	--
TPH-DRO Extended		mg/kg	--	<10.0	--	--	--	--	--	--	--
Total TPH	500	mg/kg	--	77.9	--	--	--	--	--	--	--

NOTES
meq/L - milliequivalents per liter
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter in saturated paste extract
SU - standard unit on saturated paste
EC - electrical conductivity
SAR - sodium adsorption ratio
TPH-DRO - total petroleum hydrocarbons diesel range organics
TPH-DRO Extended - total petroleum hydrocarbons oil range organics
TPH-GRO - total petroleum hydrocarbons gasoline range organics
Total TPH - combination of TPH-DRO, TPH-DRO Extended, and TPH-GRO
< - less than the stated reporting limit
-- - not analyzed
BOLD - indicates result is above the Colorado Oil and Gas Conservation Commission Standard

FIGURE

PROJECT Bill Barrett Corp. Cuttings Sampling DATE 12-28-10
PROJECT MANAGER B. Dodek CONT. No.
JOB No. BBC 1019 BY D. Girtin CHK'D
LOCATION Koskie 15H-27 SHEET No. 1 OF 1

95LT0038 10/1997



Legend:

⊗ = Composite sample location, 3/31/09
X = Composite sample location, 8/12/10
● = Background sample location, 3/31/09
○ = Background sample location, 8/12/10
■ = Background sample location, 8/25/10

APPENDIX A

LABORATORY ANALYTICAL REPORTS

GAL ID No.: 903-150

April 21, 2009

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

Project Name: Barrett Soil
Project Number: BBC0901
Date Received: 03/31/09

This is to transmit the attached analytical report. The analytical data and information contained therein was generated using specified or selected methods contained in references, such as Standard Methods for the Examination of Water and Wastewater, 18th & 19th editions, and Methods for Determination of Organic Compounds in Drinking Water, EPA-600/4-79-020.

Samples were received by Green Analytical Laboratories in good condition on 03/31/09.

If you should have any questions or comments regarding this report, please do not hesitate to call.

Sincerely,

Debbie Zufelt
Laboratory Manager

Enclosure

Green Analytical Laboratories
75 Suttle Street
Durango, CO 81303

GAL I.D.: **903-150-03**

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

Date Received: 03/31/09
Date Reported: 04/21/09
QC Batches:

PROJECT NAME: Barrett Soil
PROJECT NUMBER: BBC0901
SAMPLE I.D.: Koskie 15H BG

Sample Date: 03/31/09
Sample Matrix: Soil
Units: mg/kg

RCRA Metals

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DILUTION	DATE ANALYZED	ANALYST
Arsenic	6010B	10.0	<10.0	100	04/08/09	jm
Barium	6010B	1.0	2030	100	04/08/09	jm
Boron	6010B	10.0	17.0	100	04/08/09	jm
Cadmium	6010B	1.0	<1.0	100	04/08/09	jm
Chromium	6010B	1.0	14.8	100	04/08/09	jm
Copper	6010B	2.0	8.6	100	04/08/09	jm
Lead	6010B	5.0	10.3	100	04/08/09	jm
Mercury	7471A	0.1	<0.1	500	04/09/09	jm
Nickel	6010B	2.0	12.7	100	04/08/09	jm
Selenium	6010B	20.0	<20.0	100	04/08/09	jm
Silver	6010B	1.0	<1.0	100	04/08/09	jm
Zinc	6010B	5.0	41.1	100	04/08/09	jm

_____
Debbie Zufelt, Laboratory Manager

Green Analytical Laboratories
75 Suttle Street
Durango, CO 81303

GAL I.D.: **903-150-03**

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

Date Received: 03/31/09
Date Reported: 04/21/09
QC Batches:

PROJECT NAME: Barrett Soil
PROJECT NUMBER: BBC0901
SAMPLE I.D.: Koskie 15H BG

Sample Date: 03/31/09
Sample Matrix: Soil

Laboratory Report

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	UNITS
EC	2510B	1.0	1.07	mmho/cm on Sat. Paste Ex
pH	150.1	NA	7.55	SU on Sat. Paste
Calcium	200.7	0.5	6.24	meq/L
Magnesium	200.7	0.5	1.89	meq/L
Sodium	200.7	0.5	2.34	meq/L
SAR	Calc.		1.16	

Debbie Zufelt, Laboratory Manager

Green Analytical Laboratories
75 Suttle Street
Durango, CO 81303

GAL I.D.: **903-150-03**

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

Date Received: 03/31/09
Date Reported: 04/21/09
QC Batches:

PROJECT NAME: Barrett Soil
PROJECT NUMBER: BBC0901
SAMPLE I.D.: Koskie 15H BG

Sample Date: 03/31/09
Sample Matrix: Soil

Petroleum Hydrocarbons

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DIL	UNITS
TPHGRO	8015	10	Attached	1	mg/kg
TPHDRO	8015	10	Attached	1	mg/kg
TPHDROExtended	8015	10	Attached	1	mg/kg

Debbie Zufelt, Laboratory Manager

Green Analytical Laboratories
75 Suttle Street
Durango, CO 81303

GAL I.D.: **903-150-04**

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

Date Received: 03/31/09
Date Reported: 04/21/09
QC Batches:

PROJECT NAME: Barrett Soil
PROJECT NUMBER: BBC0901
SAMPLE I.D.: Koskie 15H Composite

Sample Date: 03/31/09
Sample Matrix: Soil
Units: mg/kg

RCRA Metals

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DILUTION	DATE ANALYZED	ANALYST
Arsenic	6010B	10.0	18.7	100	04/08/09	jm
Barium	6010B	1.0	2490	100	04/08/09	jm
Boron	6010B	10.0	29.8	100	04/08/09	jm
Cadmium	6010B	1.0	<1.0	100	04/08/09	jm
Chromium	6010B	1.0	40.6	100	04/08/09	jm
Copper	6010B	2.0	9.98	100	04/08/09	jm
Lead	6010B	5.0	<5.0	100	04/08/09	jm
Mercury	7471A	0.1	<0.1	500	04/09/09	jm
Nickel	6010B	2.0	21.3	100	04/08/09	jm
Selenium	6010B	20.0	<20.0	100	04/08/09	jm
Silver	6010B	1.0	<1.0	100	04/08/09	jm
Zinc	6010B	5.0	62.2	100	04/08/09	jm

_____
Debbie Zufelt, Laboratory Manager

Green Analytical Laboratories
75 Suttle Street
Durango, CO 81303

GAL I.D.: **903-150-04**

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

Date Received: 03/31/09
Date Reported: 04/21/09
QC Batches:

PROJECT NAME: Barrett Soil
PROJECT NUMBER: BBC0901
SAMPLE I.D.: Koskie 15H Composite

Sample Date: 03/31/09
Sample Matrix: Soil

Laboratory Report

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	UNITS
EC	2510B	1.0	74.4	mmho/cm on Sat. Paste Ex
pH	150.1	NA	10.8	SU on Sat. Paste
Calcium	200.7	0.5	46.6	meq/L
Magnesium	200.7	0.5	0.10	meq/L
Sodium	200.7	0.5	110	meq/L
SAR	Calc.		22.9	

_____
Debbie Zufelt, Laboratory Manager

Green Analytical Laboratories
75 Suttle Street
Durango, CO 81303

GAL I.D.: **903-150-04**

LT Environmental
PO Box 874
Bayfield, CO 81122
Attention: Travis Laverty

Date Received: 03/31/09
Date Reported: 04/21/09
QC Batches:

PROJECT NAME: Barrett Soil
PROJECT NUMBER: BBC0901
SAMPLE I.D.: Koskie 15H Composite

Sample Date: 03/31/09
Sample Matrix: Soil

Petroleum Hydrocarbons

RESULTS

PARAMETER	METHOD	REPORT LIMIT	RESULT	DIL	UNITS
TPHGRO	8015	10	Attached	1	mg/kg
TPHDRO	8015	10	Attached	1	mg/kg
TPHDROExtended	8015	10	Attached	1	mg/kg

Debbie Zufelt, Laboratory Manager

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
GREEN ANALYTICAL LABORATORIES, INC.
ATTN: DEBBIE ZUFELT
75 SUTTLE STREET
DURANGO, CO 81303

Receiving Date: 04/02/09
Reporting Date: 05/05/09*
Project Number: 903-150-02, 04, 07, 09*
Project Name: LTE
Project Location: NOT GIVEN

Sampling Date: 03/31/09
Sample Type: SOIL/SEDIMENT
Sample Condition: COOL & INTACT
Sample Received By: CK
Analyzed By: AB

LAB NO.	SAMPLE ID	GRO (C_6-C_{10}) (mg/kg)	DRO (>C_{10}-C_{28}) (mg/kg)	DRO EXT. (>C_{28}-C_{35}) (mg/kg)
ANALYSIS DATE:		04/03/09	04/03/09	04/03/09
H17181-2	KOSKIE 13H-COMP.	74.2	181	<10.0
H17181-4	KOSKIE 15H-COMP.	10.1	67.8	<10.0
H17181-7	NEELEY 13H-7-COMP.	73.6	534	49.4
H17181-9	JOHNSON 16H-12-COMP.	12.0	390	26.6
Quality Control		557	554	-
True Value QC		500	500	-
% Recovery		111	111	-
Relative Percent Difference		3.9	9.2	-

METHODS: TPH GRO & DRO - EPA SW-846 8015 M
*Revised Report

Chemist

05/05/09
Date

H17181 TPHE GAL

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
GREEN ANALYTICAL LABORATORIES, INC.
ATTN: DEBBIE ZUFELT
75 SUTTLE STREET
DURANGO, CO 81303

Receiving Date: 04/02/09
Reporting Date: 05/13/09
Project Number: 903-150-02, 07, 09*
Project Name: LTE
Project Location: NOT GIVEN

Sampling Date: 03/31/09*
Sample Type: SOIL/SEDIMENT
Sample Condition: COOL & INTACT
Sample Received By: CK
Analyzed By: ZL

LAB NO.	SAMPLE ID	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
ANALYSIS DATE:		05/13/09	05/13/09	05/13/09	05/13/09
H17181-2	KOSKIE 13H-COMP.	0.065	0.017	<0.050	0.614
H17181-7	NEELEY 13H-7-COMP.	<0.050	0.086	<0.050	<0.300
H17181-9	JOHNSON 16H-12-COMP.	0.081	0.301	0.082	0.825
Quality Control		0.053	0.049	0.051	0.159
True Value QC		0.050	0.050	0.050	0.150
% Recovery		106	98.0	102	106
Relative Percent Difference		1.8	1.9	11.5	1.2

METHODS: BTEX - SW-846 8021B.
*Analyzed outside EPA recommended hold time of 14 days.

TEXAS NELAP ACCREDITATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE, AND TOTAL XYLENES.

Chemist

05/13/09
Date

H17181 BTEX GAL

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
GREEN ANALYTICAL LABORATORIES, INC.
ATTN: DEBBIE ZUFELT
75 SUTTLE STREET
DURANGO, CO 81303

Receiving Date: 04/02/09
Reporting Date: 05/13/09
Project Number: 903-150-07
Project Name: LTE
Project Location: NOT GIVEN
Sample ID: NEELEY 13H-7-COMP.
Lab Number: H17181-7

Analysis Date: 05/12/09**
Sampling Date: 03/31/09**
Sample Type: SOIL/SEDIMENT
Sample Condition: COOL & INTACT
Sample Received By: CK
Analyzed By: CK

PAH
SEMIVOLATILES - 8270 (mg/kg)

		Sample Result H17181-7	Method Blank	QC	% Recov.	True Value QC
1	Naphthalene	<0.200	<0.200	0.043	85.8	0.050
2	2-Methylnaphthalene	<0.200	<0.200	0.049	98.7	0.050
3	Acenaphthylene*	<0.200	<0.200	0.027	53.9	0.050
4	Acenaphthene	<0.200	<0.200	0.046	91.5	0.050
5	Fluorene	<0.200	<0.200	0.037	73.5	0.050
6	Phenanthrene	<0.200	<0.200	0.046	91.0	0.050
7	Anthracene	<0.200	<0.200	0.046	92.0	0.050
8	Carbazole	<0.200	<0.200	0.044	88.6	0.050
9	Fluoranthene	<0.200	<0.200	0.047	94.2	0.050
10	Pyrene	<0.200	<0.200	0.047	93.1	0.050
11	Benzo[a]anthracene	<0.200	<0.200	0.042	84.4	0.050
12	Chrysene	<0.200	<0.200	0.051	102	0.050
13	Benzo [b] fluoranthene	<0.200	<0.200	0.044	88.0	0.050
14	Benzo [k] fluoranthene	<0.200	<0.200	0.052	103	0.050
15	Benzo [a] pyrene	<0.200	<0.200	0.048	96.2	0.050
16	Indeno [1,2,3-cd] pyrene	<0.200	<0.200	0.056	111	0.050
17	Dibenz [a,h] anthracene	<0.200	<0.200	0.042	83.2	0.050
18	Benzo[g,h,i]perylene	<0.200	<0.200	0.046	92.1	0.050

		% Recovery
19	Nitrobenzene-d5	73.9
20	2-Fluorobiphenyl	78.4
21	Terphenyl-d14	93.0

METHODS: EPA SW 846-8270
*Spike recovery outside historical limits of 60-140%.
**Sample analyzed outside the EPA recommended hold time of 14 days.

Chemist

05/13/09
Date

CHAIN OF CUSTODY RECORD

Page____ of ____

Client: GREEN ANALYTICAL
Contact: DEBBIE ZUFELT
Address: 75 SUTTLE ST
DURANGO, CO 81303
Phone Number: 970-247-4220
FAX Number: 970-247-4227

NOTES:
1) Ensure proper container packaging.
2) Ship samples promptly following collection.
3) Designate Sample Reject Disposition.

PO# GA09-071
Project Name: LTE

Table 1. – Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other (Specify) ____

FOR GAL USE ONLY
GAL JOB #
_____

Samplers Signature:

PLEASE CALL WITH ANY QUESTIONS

Lab Name: Green Analytical Laboratories (970) 247-4220 FAX (970) 247-4227
Address: 75 Suttle Street, Durango, CO 81303

	Sample ID	Collection: Date	Collection: Time	Misc: Collected by: (Init.)	Misc: Matrix Type From Table 1	Misc: No. of Containers	Misc: Sample Filtered ? Y/N	Preservative(s): Unpreserved (Ice Only)	Preservative(s): HNO3	Preservative(s): HCL	Preservative(s): H2SO4	Preservative(s): NAOH	Preservative(s): Other (Specify)	Analyses Required: Full TPH	Analyses Required: (Hold Sample for possible BTEX 8021 & PAH)	Comments
	H17181-															
1	1. Koskie 13H-BG	3-31-09	1115	TL	3	1		X						X	X	903-150-01
abb 2	2. Koskie 13H-Comp		1125/1130			2									X	-02
3	3. Koskie 15H-BG		1155			1										-03
ABC 4	4. Koskie 15H-Comp		1200/1205/1250			3										-04
5	5. Fosnot 13H-6-BG		1300			1										-05
6	6. Neeley 13H-7-BG		1315			1										-06
AB 7	7. Neeley 13H-7-Comp		1320/1325			2									X	-07
8	8. Johnson 16H-12-BG		1335			1										-08
AB 9	9. Johnson 16H-12-Comp		1337/1340			2									X	-09
	10.															

Please Composite

Relinquished by: Debbie Zufelt	Date: 4-1-09	Time: 1600	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date: 4/2/09	Time: 10:30

* Sample Reject: [ ] Return [ ] Dispose [ ] Store (30 Days)

*Client requested revised report. Analytes added 5/5/09 ch

CFT 7.0 °C #26

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 19, 2010

Brian Dodek
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003

RE: BBC - Koskie 15H-27

Enclosed are the results of analyses for samples received by Summit Scientific on 08/16/10 10:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019 Project Manager: Brian Dodek	**Reported:** 08/19/10 10:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Koskie 15H-27 Comp	R008068-01	Soil	08/12/10 16:18	08/16/10 10:30
Koskie 15H-27 BG01	R008068-02	Soil	08/12/10 16:24	08/16/10 10:30
Koskie 15H-27 BG02	R008068-03	Soil	08/12/10 16:22	08/16/10 10:30
Koskie 15H-27 BG03	R008068-04	Soil	08/12/10 16:28	08/16/10 10:30
Koskie 15H-27 BG04	R008068-05	Soil	08/12/10 16:30	08/16/10 10:30

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S2

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019 Project Manager: Brian Dodek	**Reported:** 08/19/10 10:36

Summit Scientific

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303-277-9310 • 303-277-9531 Fax

Page 1 of 1

Client: LT Environmental Inc.
Address: 4600 West 60th Ave.
City/State/Zip: Arvada, CO 80003
Phone: 303-433-9788 Fax: 303-433-1432
Sampler Name: Brooke Herb

Project Manager: Brian Dodek
E-Mail: bdodek@ltenv.com
Project Name: ~~Oliver 15H-21~~ Koskie
Project Number: ~~BBC1008-01~~ BBC 1019

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	HNO_3	None	Other (Specify)	Matrix: Groundwater	Soil	Air - Canister Serial #	Other (Specify)	Analyze For: Arsenic (6020B)	Special Instructions
Koskie 15H-27	8/12/2010	16:18	1			X			X			X	
Koskie 15H-27	8/12/2010	16:24	1			X			X			X	
Koskie 15H-27	8/12/2010	16:22	1			X			X			X	
Koskie 15H-27	8/12/2010	16:28	1			X			X			X	
Koskie 15H-27	8/12/2010	16:30	1			X			X			X	

Relinquished by: Date/Time: 8/13/10 15:00 Received by: Date/Time: 8-16 10:30

Relinquished by: Date/Time: Received by: Date/Time:

Relinquished by: Date/Time: Received in Lab by: Date/Time:

Turn Around Time (Check): Same Day ☐ 24 Hours ☐ 48 Hours ☐ 72 Hours ☐ Standard ☒

Sample Integrity: Temperature Upon Receipt: 5.0 Intact: Yes ☒ No ☐

Notes: 5 day TAT Per Co. Anal.

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LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019 Project Manager: Brian Dodek	**Reported:** 08/19/10 10:36

Koskie 15H-27 Comp
R008068-01 (Soil)

Summit Scientific

Colorado Analytical Laboratories

Date Sampled: **08/12/10 16:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**2.68**	0.05	mg/kg	1	0081901	08/18/10	08/19/10	EPA 200.8	

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019 Project Manager: Brian Dodek	**Reported:** 08/19/10 10:36

Koskie 15H-27 BG01

R008068-02 (Soil)

Summit Scientific

Colorado Analytical Laboratories

Date Sampled: **08/12/10 16:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**1.84**	0.05	mg/kg	1	0081901	08/18/10	08/19/10	EPA 200.8	

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019 Project Manager: Brian Dodek	**Reported:** 08/19/10 10:36

Koskie 15H-27 BG02

R008068-03 (Soil)

Summit Scientific

Colorado Analytical Laboratories

Date Sampled: **08/12/10 16:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**2.08**	0.05	mg/kg	1	0081901	08/18/10	08/19/10	EPA 200.8	

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019 Project Manager: Brian Dodek	**Reported:** 08/19/10 10:36

Koskie 15H-27 BG03

R008068-04 (Soil)

Summit Scientific

Colorado Analytical Laboratories

Date Sampled: **08/12/10 16:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**1.87**	0.05	mg/kg	1	0081901	08/18/10	08/19/10	EPA 200.8	

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019 Project Manager: Brian Dodek	**Reported:** 08/19/10 10:36

Koskie 15H-27 BG04

R008068-05 (Soil)

Summit Scientific

Colorado Analytical Laboratories

Date Sampled: **08/12/10 16:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**1.94**	0.05	mg/kg	1	0081901	08/18/10	08/19/10	EPA 200.8	

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019 Project Manager: Brian Dodek	**Reported:** 08/19/10 10:36

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019 Project Manager: Brian Dodek	**Reported:** 08/19/10 10:36

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

September 01, 2010

Brian Dodek
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: BBC - Koskie 15H-27

Enclosed are the results of analyses for samples received by Summit Scientific on 08/26/10 15:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019.01 Project Manager: Brian Dodek	**Reported:** 09/01/10 10:00

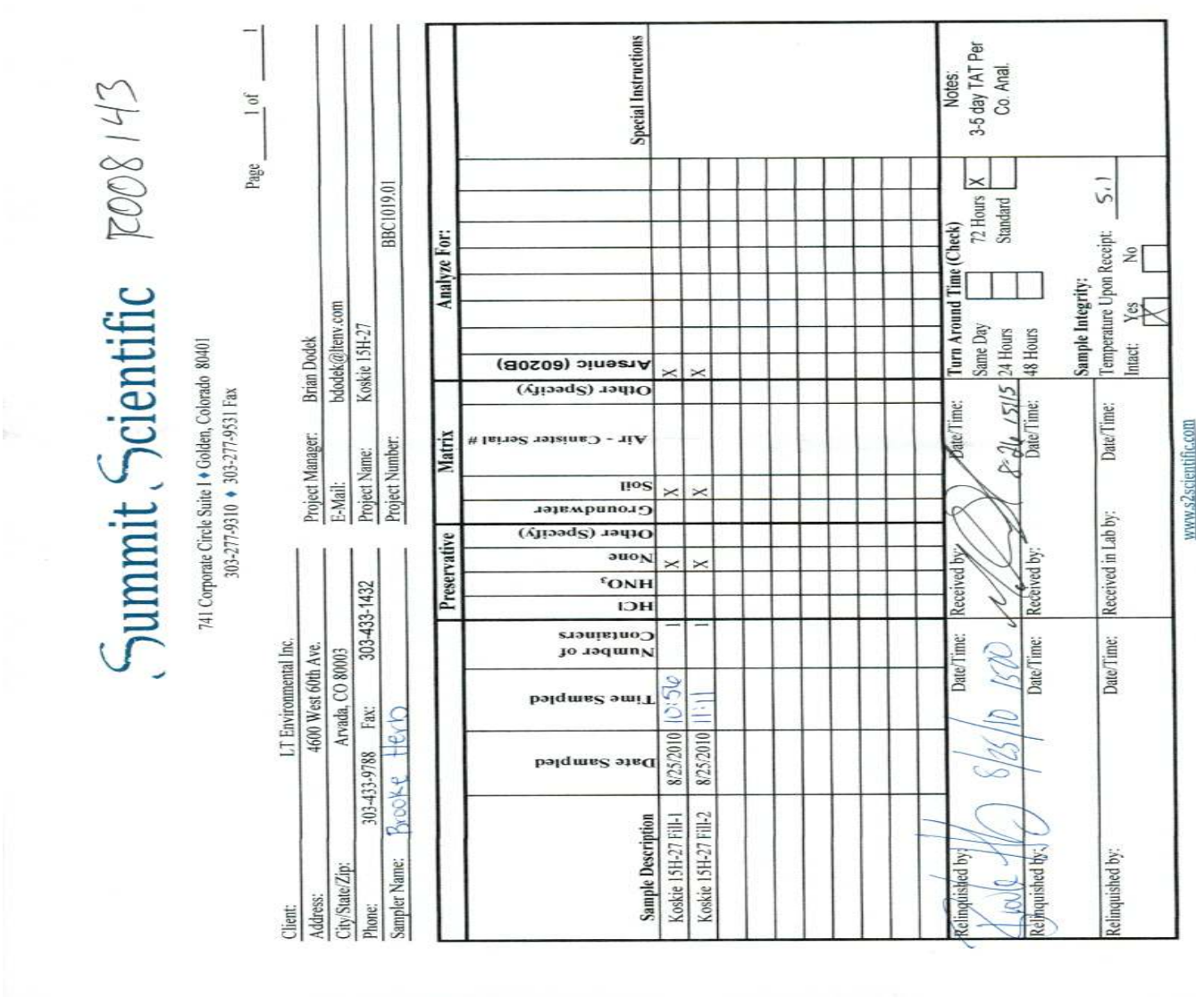
ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Koskie 15H-27 Fill-1	R008143-01	Soil	08/25/10 10:56	08/26/10 15:15
Koskie 15H-27 Fill-2	R008143-02	Soil	08/25/10 11:11	08/26/10 15:15

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019.01 Project Manager: Brian Dodek	**Reported:** 09/01/10 10:00



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303-277-9310 • 303-277-9531 Fax

T0081143

Page 1 of 1

Client: LT Environmental Inc.
Address: 4600 West 60th Ave.
City/State/Zip: Arvada, CO 80003
Phone: 303-433-9788 Fax: 303-433-1432
Sampler Name: Brooke Herb

Project Manager: Brian Dodek
E-Mail: bdodek@ltenv.com
Project Name: Koskie 15H-27
Project Number: BBC1019.01

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative: Other (Specify)	Matrix: Groundwater	Matrix: Soil	Matrix: Air - Canister Serial #	Matrix: Other (Specify)	Analyze For: Arsenic (6020B)	Special Instructions
Koskie 15H-27 Fill-1	8/25/2010	10:50	1			X			X			X	
Koskie 15H-27 Fill-2	8/25/2010	11:11	1			X			X			X	

Relinquished by: Date/Time: 8/25/10 1510 Received by: Date/Time:
Relinquished by: Date/Time: Received by: Date/Time: 8/26/10
Relinquished by: Date/Time: Received in Lab by: Date/Time:

Turn Around Time (Check): Same Day ☐ 24 Hours ☐ 48 Hours ☐ 72 Hours ☒ Standard ☐

Sample Integrity: Temperature Upon Receipt: 5.1 Intact: Yes ☒ No ☐

Notes: 3-5 day TAT Per Co. Anal.

www.s2scientific.com

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019.01 Project Manager: Brian Dodek	**Reported:** 09/01/10 10:00

Koskie 15H-27 Fill-1
R008143-01 (Soil)

Summit Scientific

Colorado Analytical Laboratories

Date Sampled: **08/25/10 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**1.93**	0.05	mg/kg	1	0090103	08/31/10	09/01/10	EPA 200.8	

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019.01 Project Manager: Brian Dodek	**Reported:** 09/01/10 10:00

Koskie 15H-27 Fill-2

R008143-02 (Soil)

Summit Scientific

Colorado Analytical Laboratories

Date Sampled: **08/25/10 11:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**2.33**	0.05	mg/kg	1	0090103	08/31/10	09/01/10	EPA 200.8	

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019.01 Project Manager: Brian Dodek	**Reported:** 09/01/10 10:00

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

LT Environmental, Inc. 4600 West 60th Avenue Arvada CO, 80003	Project: BBC - Koskie 15H-27 Project Number: BBC 1019.01 Project Manager: Brian Dodek	**Reported:** 09/01/10 10:00

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference