

**State of Colorado**  
**Oil and Gas Conservation Commission**

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



DE	ET	OE	ES
<b>RECEIVED</b> <b>7/11/2013</b>			
Document Number: 2145532			

**SUNDRY NOTICE**

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

OGCC Operator Number: \_\_\_\_\_ Contact Name \_\_\_\_\_

Name of Operator: \_\_\_\_\_ Phone: ( ) \_\_\_\_\_

Address: \_\_\_\_\_ Fax: ( ) \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Email: \_\_\_\_\_

Complete the Attachment  
Checklist

OP OGCC

API Number : 05- \_\_\_\_\_ OGCC Facility ID Number: \_\_\_\_\_

Well/Facility Name: \_\_\_\_\_ Well/Facility Number: \_\_\_\_\_

Location QtrQtr: \_\_\_\_\_ Section: \_\_\_\_\_ Township: \_\_\_\_\_ Range: \_\_\_\_\_ Meridian: \_\_\_\_\_

County: \_\_\_\_\_ Field Name: \_\_\_\_\_

Federal, Indian or State Lease Number: \_\_\_\_\_

Survey Plat		
Directional Survey		
Srvc Eqpmt Diagram		
Technical Info Page		
Other		

**CHANGE OF LOCATION OR AS BUILT GPS REPORT**

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

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

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

Latitude \_\_\_\_\_ PDOP Reading \_\_\_\_\_ Date of Measurement \_\_\_\_\_

Longitude \_\_\_\_\_ GPS Instrument Operator's Name \_\_\_\_\_

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

Well will be: \_\_\_\_\_ (Vertical, Directional, Horizontal)

Change of **Surface** Footage **From** Exterior Section Lines:

Change of **Surface** Footage **To** Exterior Section Lines:

Current **Surface** Location **From** QtrQtr \_\_\_\_\_ Sec \_\_\_\_\_

New **Surface** Location **To** QtrQtr \_\_\_\_\_ Sec \_\_\_\_\_

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

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

Current **Top of Productive Zone** Location **From** Sec \_\_\_\_\_

New **Top of Productive Zone** Location **To** Sec \_\_\_\_\_

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

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

Current **Bottomhole** Location Sec \_\_\_\_\_ Twp \_\_\_\_\_

New **Bottomhole** Location Sec \_\_\_\_\_ Twp \_\_\_\_\_

Is location in High Density Area? \_\_\_\_\_

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

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

Ground Elevation \_\_\_\_\_ feet Surface owner consultation date \_\_\_\_\_

FNL/FSL		FEL/FWL	
_____	_____	_____	_____
_____	_____	_____	_____
Twp _____	Range _____	Meridian _____	_____
Twp _____	Range _____	Meridian _____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Twp _____	Range _____	_____	_____
Twp _____	Range _____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

\*\*

\*\*

\*\* attach deviated drilling plan

**CHANGE OR ADD OBJECTIVE FORMATION AND/OR SPACING UNIT**

<u>Objective Formation</u>	<u>Formation Code</u>	<u>Spacing Order Number</u>	<u>Unit Acreage</u>	<u>Unit Configuration</u>

**OTHER CHANGES**

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

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

From: Name \_\_\_\_\_ Number \_\_\_\_\_ Effective Date: \_\_\_\_\_

To: Name \_\_\_\_\_ Number \_\_\_\_\_

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

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

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

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

OIL & GAS LOCATION ID Number: \_\_\_\_\_

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

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

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

☐ **REQUEST FOR CONFIDENTIAL STATUS**

☐ **DIGITAL WELL LOG UPLOAD**

☐ **DOCUMENTS SUBMITTED** Purpose of Submission: \_\_\_\_\_

**RECLAMATION****INTERIM RECLAMATION**

☐ Interim Reclamation will commence approximately \_\_\_\_\_

Per Rule 1003.e.(3) operator shall submit Sundry Notice reporting interim reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

☐ Interim reclamation complete, site ready for inspection.

Per Rule 1003.e(3) describe interim reclamation procedure in Comments below or provide as an attachment and attach required location photographs.

**Field inspection will be conducted to document Rule 1003.e. compliance**

**FINAL RECLAMATION**

☐ Final Reclamation will commence approximately \_\_\_\_\_

Per Rule 1004.c.(4) operator shall submit Sundry Notice reporting final reclamation is complete and site is ready for inspection when vegetation reaches 80% coverage.

☐ Final reclamation complete, site ready for inspection. Per Rule 1004.c(4) describe final reclamation procedure in Comments below or provide as an attachment.

**Field inspection will be conducted to document Rule 1004.c. compliance**

Comments:

ENGINEERING AND ENVIRONMENTAL WORK

☐ NOTICE OF CONTINUED TEMPORARILY ABANDONED STATUS

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

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

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

☐ SPUD DATE: \_\_\_\_\_

TECHNICAL ENGINEERING AND ENVIRONMENTAL WORK

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

☐ NOTICE OF INTENT \_\_\_\_\_ Approximate Start Date \_\_\_\_\_

☐ REPORT OF WORK DONE \_\_\_\_\_ Date Work Completed \_\_\_\_\_

☐ Intent to Recomplete (Form 2 also required)

☐ Request to Vent or Flare

☐ E&P Waste Mangement Plan

☐ Change Drilling Plan

☐ Repair Well

☐ Beneficial Reuse of E&P Waste

☐ Gross Interval Change

☐ Rule 502 variance requested. Must provide detailed info regarding request.

☐ Other \_\_\_\_\_

☐ Status Update/Change of Remediation Plans for Spills and Releases

COMMENTS:

CASING AND CEMENTING CHANGES

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

H2S REPORTING

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

Gas Analysis Report must be attached.

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

Description of Sample Point:

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

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

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

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

COMMENTS:

### **BMP**

<u>Type</u>	<u>Comment</u>

### **GROUND WATER SAMPLING**

#### Uses of Ground Water Sampling Section

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

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

- ☐ Request an Exception to Ground Water Sampling Requirements per Greater Wattenberg Area Rule 318A.e(4):There are no Available Water Sources located within the governmental quarter section or within a previously unsampled governmental quarter section within a ½-mile radius of this proposed Oil and Gas Well, Multi-Well Site, or Dedicated Injection Well.
- ☐ Request an Exception to Ground Water Sampling Requirements per Statewide Rule 609.c.
- \_\_\_\_\_ Number of Water Sources located within one-half (1/2) mile of a proposed Oil and Gas Well, Multi-Well Site, or Dedicated Injection Well.
- \_\_\_\_\_ Number of Water Source Exceptions requested per Rule 609.c.
- \_\_\_\_\_ Number of Water Sources determined to be unsuitable. **The condition of these Water Sources MUST be documented in the comments below or in an attachment.**
- \_\_\_\_\_ Number of Water Sources suitable for testing whose owners refused to grant access despite an operator's reasonable good faith efforts to obtain consent to conduct sampling.  
**The reasonable good faith efforts used to obtain access from the owners of these Water Sources MUST be documented in the comments below or in an attachment.**
- ☐ Request a Previously Sampled Water Source in the COGIS database be used to meet sampling requirements as described in Rule 609.d(3)

\_\_\_\_\_ Type of Sample Substitution Request

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

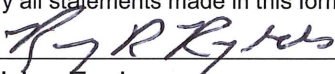
Sample ID	Facility ID	Sample Date	Sample Purpose

**COMMENTS**

**Operator Comments:**

Beren Corporation has informed the landowner of the soil treatment activities, area of disturbance, and proposed timeline associated with soil treatment and final reclamation. Beren Corporation has included a signed landowner's agreement to demonstrate compliance with COGCC Rule 907.e.(2).G. Beren has collected soil profile samples per COGCC request. The attached letter presents results and recommended characterization analytes for the remediation project.

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

Signed:  Print Name: Rodney Reynolds  
 Title: Division Engineer Email: Reynoldsr@berexco.com Date: 7/9/13

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

COGCC Approved: \_\_\_\_\_ Date: \_\_\_\_\_

### Landowner Authorization Agreement

**Cook Lease****Sec. 12-4S-54W****Washington Co., CO**

Beren Corporation (Beren) has recently plugged the Cook 1X well and is in the process of abandoning this lease. As part of the abandonment process the Colorado Oil and Gas Conservation Commission (COGCC) rules require closing the production pits that were used during oil production operations. Prior to closing these pits, all the soils associated with these pits have to meet specific standards set by the COGCC. This will require conducting soil treatment activities on the Cook lease. The attached Figure 1 depicts the areas on the lease needed to conduct this treatment process. Beren's contractors will be periodically tilling and sampling the soil until it is confirmed to be compliant with COGCC standards, at which time the soil will be used to fill in and close the pits

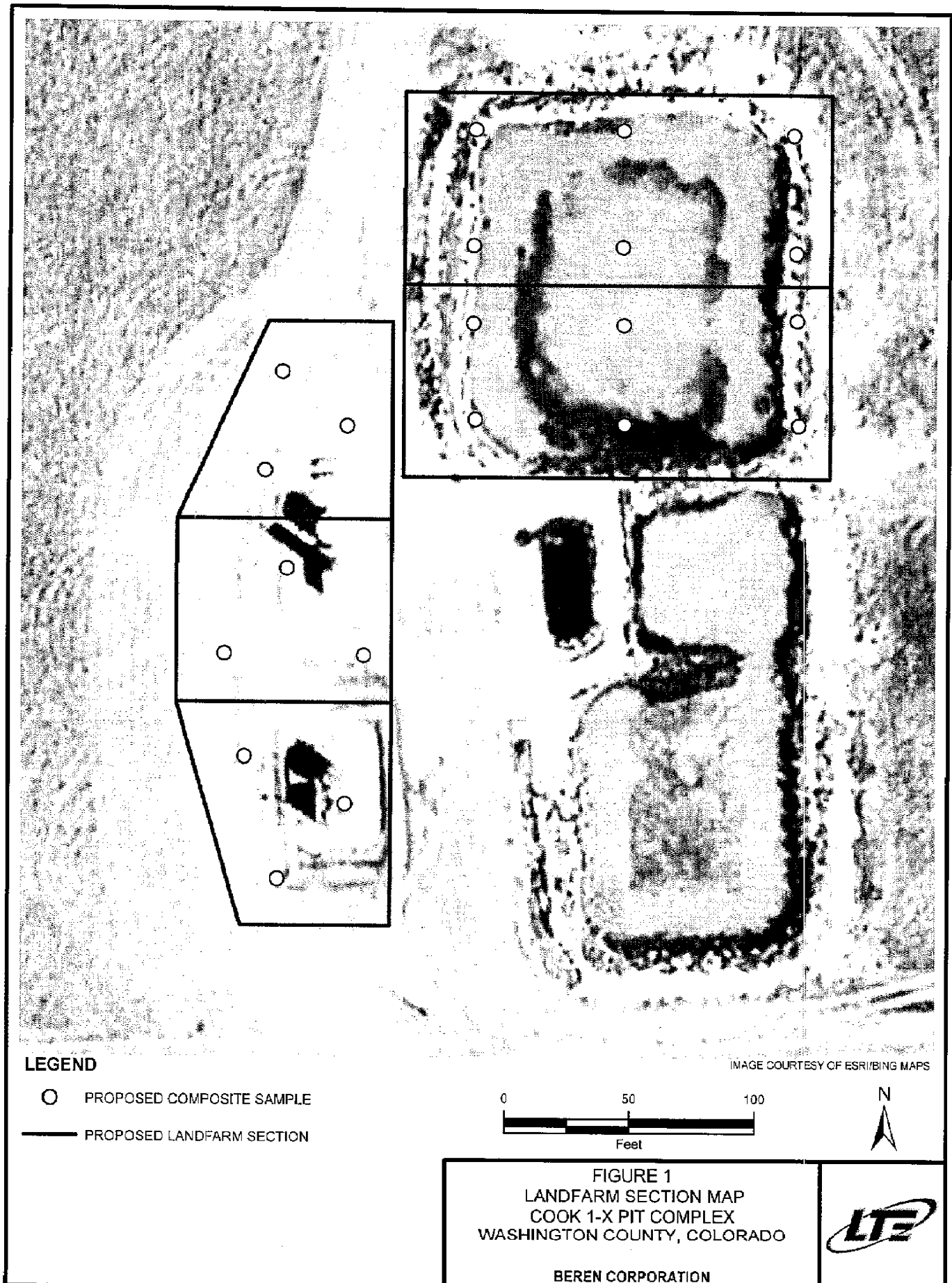
Beren will be operating the soil treatment areas and conducting final reclamation activities in accordance with all applicable COGCC rules. The total duration of soil remediation is expected to take approximately two years. The soil remediation will begin in late June 2013 following submittal of this landowner authorization to the COGCC.

The plan and procedures for the reclamation activities has been approved by the COGCC. However, COGCC rules require that prior to this soil treatment, the operator obtain written approval from the surface owner.

If you authorize Beren Corporation to use the property depicted in Figure 1 to perform the above mentioned soil remediation activities, please sign and date in the appropriate spaces below.

Print Name Donald V. Myers  
Signature Donald V. Myers  
Date 6-17-2013

*CD*  
*ma*





July 3, 2013

Mr. John Axelson  
Northeast Region Environmental Protection Specialist  
Colorado Oil and Gas Conservation Commission  
1120 Lincoln Street, Suite 801  
Denver, Colorado 80203

**RE: Stockpile Profile Sampling  
Beren Corporation  
Cook 1-X Pit Complex  
Facility ID: 317222  
SESE Sec. 12 T4S R54W, 6th Principal Meridian  
Washington County, Colorado**

Dear Mr. Axelson:

In the conditions of approval letter submitted to Beren Corporation (Beren) on January 30, 2013, you provided the option to characterize the “worst case” samples from the stockpiled soil at the Cook 1-X Pit Complex (Site). The letter stated: *Beren Corporation has the option to profile worst case samples from the stockpiled material prior to treatment. A minimum of four (4) worst-case, discrete grab samples would be collected and analyzed for all contaminants of concern in soil listed on Table 910-1. Samples should be collected based on observation of oil staining, hydrocarbon odor and/or other field screening methods. If results for all four samples indicate specific contaminants of concern are already below Table 910-1 levels, those individual contaminants can be removed from the analytical requirements for the duration of treatment. If completed, submit profile sampling results prior to commencement of land treatment.*

On June 7, 2013, LTE personnel collected five discrete samples (C01, OS01SP-01, PW02SP-01, PW02SP-03, and PW03SP-03) from the onsite stockpiles to characterize the soil for all constituents listed in Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1, with the exception of electrical conductivity, pH, and sodium adsorption ratio. These inorganic parameters were not analyzed because the soil will be buried in the onsite pits with 3 feet of compliant cover. As such, the inorganic levels in the soil will not affect reclamation following completion of soil remediation activities. The soil stockpile locations are depicted on Figure 1. One discrete sample was collected from each stockpile, with the exception of stockpile OS01SP-01. Stockpile OS01SP-01 was combined with newly excavated material from the tank battery, heater treater, and wellhead that was stockpiled against the previously stored soil. LTE personnel collected an additional discrete sample from this newly stockpiled soil and labeled it C01.

Analytical results indicated COGCC Table 910-1 metals were compliant for all samples with the exception of arsenic. Arsenic concentrations for the stockpiled soil at the Site ranged from 1.42 milligrams per kilogram (mg/kg) to 2.51 mg/kg (Table 1). These concentrations of arsenic are considered to be within an acceptable range of naturally occurring arsenic for the region. Arsenic was not a major byproduct of the production process at the Site and is not expected to have accumulated above the natural background variation.





Analytical results indicated benzene, toluene, ethylbenzene, and total xylenes were not detected above the laboratory reporting limits and were compliant with COGCC Table 910-1 Concentration Levels. The polynuclear aromatic hydrocarbons (PAH) listed in COGCC Table 910-1 were also below the laboratory reporting limits or compliant with COGCC Table 910-1, with the exception of six PAH compounds. Benzo(A)anthracene, Benzo(B)fluoranthene, Benzo(K)fluoranthene, Benzo(A)pyrene, Dibenzo(A,H)anthracene, and Indeno(1,2,3-cd)pyrene were all below the laboratory reporting limits; however, due to the elevated concentrations of total petroleum hydrocarbons-diesel range organics (TPH-DRO) in the soil samples, the laboratory reporting limits exceeded the COGCC Table 910-1 Concentration Level for each of the abovementioned PAH compounds. While it is possible that the compounds are present below the laboratory reporting limit, LTE believes the impending remediation will mitigate any residual PAH concentrations to compliant levels. The amount of land treatment necessary to remediate the elevated TPH-DRO concentrations to the required 500 mg/kg concentration level will likely mitigate any PAH concentration that is below the current laboratory reporting limit and potentially exceeds the COGCC Table 910-1 Concentration Levels.

Analytical results indicated all stockpile samples exceeded the COGCC Table 910-1 Concentration Level for TPH, ranging between 3,002.2 mg/kg to 12,002.5 mg/kg. The gasoline range organics (GRO) fraction of the TPH results was minimal. The highest detection of TPH-GRO was 40 mg/kg (Table 1). Therefore, TPH-GRO is not considered a compound of concern at the Site. The DRO fraction of the TPH concentration represents nearly the entire detected concentration amount for each soil sample. The analytical results are summarized in Table 1. The laboratory analytical report is attached.

As Beren has completed the optional soil profiling sampling as proposed in the January 30, 2013 COGCC letter, the analytical results indicate that the only compound of concern that exceeds the COGCC Table 910-1 Concentration Levels is TPH-DRO. Moving forward, LTE proposes analyzing each landfarm soil sample for TPH-DRO to characterize the magnitude of remaining soil impact, overall remediation progress, and confirm compliance of the soil prior to burial in the onsite pits.

Please call LTE at 303-433-9788 if you have any questions or comments regarding this report.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink that reads "Brian Dodek". The signature is fluid and cursive, with the first name "Brian" and last name "Dodek" clearly legible.

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

Attachments:

Figure 1 - Site Map

Table 1 - Soil Analytical Results

Attachment A – Laboratory Analytical Report




**FIGURE**





IMAGE COURTESY OF ESRI/BING MAPS

# LEGEND

-  OIL SKIM PIT
-  STOCKPILE
-  PRODUCED WATER PIT

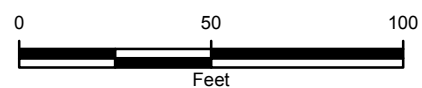


FIGURE 1  
SITE MAP  
COOK 1-X PIT COMPLEX  
WASHINGTON COUNTY, COLORADO

BEREN CORPORATION



## TABLE

**TABLE 1**  
**SOIL ANALYTICAL RESULTS**  
**COOK 1-X PIT COMPLEX**  
**WASHINGTON COUNTY, COLORADO**  
**BEREN CORPORATION**

PARAMETER	COGCC Table 910-1 Concentration Levels	UNITS	Sample ID: C01	Sample ID: OS01SP-01	Sample ID: PW02SP-01	Sample ID: PW03SP-01	Sample ID: PW03SP-03
Sample Date			6/7/2013	6/7/2013	6/7/2013	6/7/2013	6/7/2013
Sample Type			Stockpile Profile	Stockpile Profile	Stockpile Profile	Stockpile Profile	Stockpile Profile
Arsenic	0.39	mg/kg	<b>2.51</b>	<b>1.88</b>	<b>2.06</b>	<b>1.42</b>	<b>2.16</b>
Barium	15,000	mg/kg	159	276	260	247	265
Cadmium	70	mg/kg	0.208	0.202	0.216	0.172	0.219
Chromium (III)	120,000	mg/kg	14.2	9.43	9.15	8.84	10.4
Chromium (VI)	23	mg/kg	<1.23	<1.17	<1.15	<1.16	<1.25
Copper	3,100	mg/kg	10.6	6.48	6.32	6.04	7.18
Lead	400	mg/kg	27.8	9.75	10.6	12.6	12.3
Mercury	23	mg/kg	0.0816	<0.0521	<0.0498	<0.0489	<0.0520
Nickel	1,600	mg/kg	27.9	11.5	11.5	10.7	12.6
Selenium	390	mg/kg	<0.104	<0.0986	<0.0958	<0.0983	<0.105
Silver	390	mg/kg	<0.104	<0.0986	<0.0958	<0.0983	<0.105
Zinc	23,000	mg/kg	166	43.6	45.1	38.3	50.1
Benzene	0.17	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0045
Toluene	85	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0045
Ethylbenzene	100	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0045
Total Xylenes	175	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0045
TPH-GRO		mg/kg	2.5	1.0	1.5	2.2	40
TPH-DRO		mg/kg	12,000	4,900	3,700	3,000	3,500
Total TPH	500	mg/kg	<b>12,002.5</b>	<b>4,901.0</b>	<b>3,701.5</b>	<b>3,002.2</b>	<b>3,540</b>
Acenaphthene	1,000	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Anthracene	1,000	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Benzo(A)anthracene	0.22	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Benzo(B)fluoranthene	0.22	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Benzo(K)fluoranthene	2.2	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Benzo(A)pyrene	0.022	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Chrysene	22	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Dibenzo(A,H)anthracene	0.022	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Fluoranthene	1,000	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Fluorene	1,000	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Naphthalene	23	mg/kg	<16.000	<3.300	<3.300	<3.300	<3.300
Pyrene	1,000	mg/kg	18.000	3.300	4.500	<3.300	5.600

**NOTES:**

mg/kg - milligrams per kilogram

TPH-DRO - total petroleum hydrocarbons-diesel range organics

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

Total TPH - combination of TPH-DRO and TPH-GRO

< - less than the stated reporting limit

-- - not analyzed

**BOLD** - indicates result exceeds the Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1



**ATTACHMENT A**  
**LABORATORY ANALYTICAL REPORT**



# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

June 19, 2013

Brian Dodek  
LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada, CO 80003  
RE: BNC - Cook 1-X

Enclosed are the results of analyses for samples received by Summit Scientific on 06/11/13 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Joseph J Egry IV  
Laboratory Director

This report shall not be reproduced, except in its entirety, without the written approval of Summit Scientific. Test results relate only to samples analyzed.

Summit Scientific is the sole authority for authorizing edits or modifications to this document. Unauthorized modification of this report is strictly prohibited.



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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

**Reported:**  
06/19/13 09:15

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
C01	R306069-01	Soil	06/07/13 10:15	06/11/13 17:00
OS01SP-01	R306069-02	Soil	06/07/13 10:25	06/11/13 17:00
PW03SP-03	R306069-03	Soil	06/07/13 10:40	06/11/13 17:00
PW03SP-01	R306069-04	Soil	06/07/13 10:55	06/11/13 17:00
PW02SP-01	R306069-05	Soil	06/07/13 11:20	06/11/13 17:00

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: BNC - Cook 1-X

Project Number: 0415-12002

Project Manager: Brian Dodek

**Reported:**

06/19/13 09:15

R306069

Summit Scientific

52

741 Corporate Circle Suite 1 ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: LT Environmental, Inc.

Address: 4610 W 66th Ave  
Project Manager: Brian Dadek

Address: 4600 W 66th Ave

City/State/Zip: Ananda, CO 80003

Phone: 303-443-9787 Fax:

Sampler Name: Vickie Wickert

Project Number: 04/5/2002

[illegible]

www.s2scientific.com

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.*

Regel IV



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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

**Reported:**  
06/19/13 09:15

**C01**  
**R306069-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/07/13 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>12000</b>	50	mg/kg	1	3061217	06/13/13	06/13/13	8015M	

Date Sampled: **06/07/13 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		2340 %	30-150		"	"	"	"	S-02

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/07/13 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3061216	06/13/13	06/14/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>2.5</b>	0.50	"	"	"	"	"	"	

Date Sampled: **06/07/13 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		105 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		92.6 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.2 %	21-167		"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270D**

**R-01**

Date Sampled: **06/07/13 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	16000	ug/kg	1	3060713	06/12/13	06/17/13	EPA 8270D	
Acenaphthylene	ND	16000	"	"	"	"	"	"	
Anthracene	ND	16000	"	"	"	"	"	"	

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

Project: BNC - Cook 1-X

Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**C01**

**R306069-01 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D**

**R-01**

Benzo (a) anthracene	ND	16000	ug/kg	1	3060713	06/12/13	06/17/13	EPA 8270D
Benzo (b) fluoranthene	ND	16000	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	16000	"	"	"	"	"	"
Benzo (g,h,i) perylene	ND	16000	"	"	"	"	"	"
Benzo (a) pyrene	ND	16000	"	"	"	"	"	"
Chrysene	ND	16000	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	16000	"	"	"	"	"	"
Fluoranthene	ND	16000	"	"	"	"	"	"
Fluorene	ND	16000	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	16000	"	"	"	"	"	"
Naphthalene	ND	16000	"	"	"	"	"	"
Phenanthrene	ND	16000	"	"	"	"	"	"
<b>Pyrene</b>	<b>18000</b>	16000	"	"	"	"	"	"

Date Sampled: **06/07/13 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		80.5 %	-13.6-167		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		80.1 %	-7.09-147		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		108 %	-42.1-143		"	"	"	"	
Surrogate: Terphenyl-d14		368 %	-19.4-142		"	"	"	"	S-GC

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: **06/07/13 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>2.51</b>	0.104	mg/kg dry	1	3061401	06/14/13	06/14/13	EPA 6020A	
<b>Barium</b>	<b>159</b>	0.104	"	"	"	"	"	"	
<b>Cadmium</b>	<b>0.208</b>	0.104	"	"	"	"	"	"	
<b>Chromium</b>	<b>15.4</b>	0.104	"	"	"	"	"	"	
<b>Copper</b>	<b>10.6</b>	0.521	"	"	"	"	"	"	
<b>Lead</b>	<b>27.8</b>	0.104	"	"	"	"	"	"	
<b>Nickel</b>	<b>27.9</b>	0.104	"	"	"	"	"	"	
Selenium	ND	0.104	"	"	"	"	"	"	
Silver	ND	0.104	"	"	"	"	"	"	
<b>Zinc</b>	<b>166</b>	10.4	"	"	"	"	"	"	

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

**Reported:**  
06/19/13 09:15

**C01**  
**R306069-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

**Total Mercury by EPA Method 7471/7470/245.1**

Date Sampled: **06/07/13 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	<b>0.0816</b>	0.0485	mg/kg dry	1	3061402	06/14/13	06/14/13	EPA 7471	

**Hexavalent Chromium by EPA 7199**

Date Sampled: **06/07/13 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1.23	mg/kg dry	1	3061403	06/14/13	06/17/13	EPA 7199	

**Calculated Analytes**

Date Sampled: **06/07/13 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	<b>14.2</b>	1.00	mg/kg	1	3061817	06/18/13	06/18/13	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/07/13 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>81.5</b>		%	1	3061711	06/17/13	06/18/13	% calculation	

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4600 West 60th Avenue  
Arvada CO, 80003

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**OS01SP-01**  
**R306069-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/07/13 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	4900	50	mg/kg	1	3061217	06/13/13	06/13/13	8015M	

Date Sampled: **06/07/13 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		31.2 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/07/13 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3061216	06/13/13	06/14/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.0	0.50	"	"	"	"	"	"	

Date Sampled: **06/07/13 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270D**

**R-01**

Date Sampled: **06/07/13 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	3300	ug/kg	1	3060713	06/12/13	06/17/13	EPA 8270D	
Acenaphthylene	ND	3300	"	"	"	"	"	"	
Anthracene	ND	3300	"	"	"	"	"	"	

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LT Environmental, Inc.  
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Arvada CO, 80003

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**OS01SP-01**  
**R306069-02 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D**

**R-01**

Benzo (a) anthracene	ND	3300	ug/kg	1	3060713	06/12/13	06/17/13	EPA 8270D
Benzo (b) fluoranthene	ND	3300	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	3300	"	"	"	"	"	"
Benzo (g,h,i) perylene	ND	3300	"	"	"	"	"	"
Benzo (a) pyrene	ND	3300	"	"	"	"	"	"
Chrysene	ND	3300	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	3300	"	"	"	"	"	"
Fluoranthene	ND	3300	"	"	"	"	"	"
Fluorene	ND	3300	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	3300	"	"	"	"	"	"
Naphthalene	ND	3300	"	"	"	"	"	"
Phenanthrene	ND	3300	"	"	"	"	"	"
<b>Pyrene</b>	<b>3300</b>	<b>3300</b>	"	"	"	"	"	"

Date Sampled: **06/07/13 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		93.1 %	-13.6-167		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		84.5 %	-7.09-147		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		132 %	-42.1-143		"	"	"	"	
Surrogate: Terphenyl-d14		350 %	-19.4-142		"	"	"	"	S-GC

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: **06/07/13 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>1.88</b>	0.0986	mg/kg dry	1	3061401	06/14/13	06/14/13	EPA 6020A	
<b>Barium</b>	<b>276</b>	0.0986	"	"	"	"	"	"	
<b>Cadmium</b>	<b>0.202</b>	0.0986	"	"	"	"	"	"	
<b>Chromium</b>	<b>10.6</b>	0.0986	"	"	"	"	"	"	
<b>Copper</b>	<b>6.48</b>	0.493	"	"	"	"	"	"	
<b>Lead</b>	<b>9.75</b>	0.0986	"	"	"	"	"	"	
<b>Nickel</b>	<b>11.5</b>	0.0986	"	"	"	"	"	"	
Selenium	ND	0.0986	"	"	"	"	"	"	
Silver	ND	0.0986	"	"	"	"	"	"	
<b>Zinc</b>	<b>43.6</b>	9.86	"	"	"	"	"	"	

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Arvada CO, 80003

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**OS01SP-01**  
**R306069-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

**Total Mercury by EPA Method 7471/7470/245.1**

Date Sampled: **06/07/13 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0521	mg/kg dry	1	3061402	06/14/13	06/14/13	EPA 7471	

**Hexavalent Chromium by EPA 7199**

Date Sampled: **06/07/13 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1.17	mg/kg dry	1	3061403	06/14/13	06/17/13	EPA 7199	

**Calculated Analytes**

Date Sampled: **06/07/13 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	<b>9.43</b>	1.00	mg/kg	1	3061817	06/18/13	06/18/13	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/07/13 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>85.8</b>		%	1	3061711	06/17/13	06/18/13	% calculation	

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**PW03SP-03**  
**R306069-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/07/13 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	3700	50	mg/kg	1	3061217	06/13/13	06/13/13	8015M	

Date Sampled: **06/07/13 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		36.7 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/07/13 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3061216	06/13/13	06/14/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.5	0.50	"	"	"	"	"	"	

Date Sampled: **06/07/13 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270D**

**R-01**

Date Sampled: **06/07/13 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	3300	ug/kg	1	3060713	06/12/13	06/17/13	EPA 8270D	
Acenaphthylene	ND	3300	"	"	"	"	"	"	
Anthracene	ND	3300	"	"	"	"	"	"	

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4600 West 60th Avenue  
Arvada CO, 80003

Project: BNC - Cook 1-X

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06/19/13 09:15

**PW03SP-03**  
**R306069-03 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D**

**R-01**

Benzo (a) anthracene	ND	3300	ug/kg	1	3060713	06/12/13	06/17/13	EPA 8270D
Benzo (b) fluoranthene	ND	3300	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	3300	"	"	"	"	"	"
Benzo (g,h,i) perylene	ND	3300	"	"	"	"	"	"
Benzo (a) pyrene	ND	3300	"	"	"	"	"	"
Chrysene	ND	3300	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	3300	"	"	"	"	"	"
Fluoranthene	ND	3300	"	"	"	"	"	"
Fluorene	ND	3300	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	3300	"	"	"	"	"	"
Naphthalene	ND	3300	"	"	"	"	"	"
Phenanthrene	ND	3300	"	"	"	"	"	"
<b>Pyrene</b>	<b>4500</b>	3300	"	"	"	"	"	"

Date Sampled: **06/07/13 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		92.8 %	-13.6-167		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		79.1 %	-7.09-147		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		135 %	-42.1-143		"	"	"	"	
Surrogate: Terphenyl-d14		583 %	-19.4-142		"	"	"	"	S-GC

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: **06/07/13 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>2.06</b>	0.0958	mg/kg dry	1	3061401	06/14/13	06/14/13	EPA 6020A	
<b>Barium</b>	<b>260</b>	0.0958	"	"	"	"	"	"	
<b>Cadmium</b>	<b>0.216</b>	0.0958	"	"	"	"	"	"	
<b>Chromium</b>	<b>10.3</b>	0.0958	"	"	"	"	"	"	
<b>Copper</b>	<b>6.32</b>	0.479	"	"	"	"	"	"	
<b>Lead</b>	<b>10.6</b>	0.0958	"	"	"	"	"	"	
<b>Nickel</b>	<b>11.5</b>	0.0958	"	"	"	"	"	"	
Selenium	ND	0.0958	"	"	"	"	"	"	
Silver	ND	0.0958	"	"	"	"	"	"	
<b>Zinc</b>	<b>45.1</b>	9.58	"	"	"	"	"	"	

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Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**PW03SP-03**  
**R306069-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

**Total Mercury by EPA Method 7471/7470/245.1**

Date Sampled: **06/07/13 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0498	mg/kg dry	1	3061402	06/14/13	06/14/13	EPA 7471	

**Hexavalent Chromium by EPA 7199**

Date Sampled: **06/07/13 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1.15	mg/kg dry	1	3061403	06/14/13	06/17/13	EPA 7199	

**Calculated Analytes**

Date Sampled: **06/07/13 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	9.15	1.00	mg/kg	1	3061817	06/18/13	06/18/13	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/07/13 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.3		%	1	3061711	06/17/13	06/18/13	% calculation	

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Arvada CO, 80003

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**PW03SP-01**  
**R306069-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/07/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	3000	50	mg/kg	1	3061217	06/13/13	06/13/13	8015M	

Date Sampled: **06/07/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		22.2 %	30-150		"	"	"	"	S-02

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/07/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3061216	06/13/13	06/14/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.2	0.50	"	"	"	"	"	"	

Date Sampled: **06/07/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270D**

**R-01**

Date Sampled: **06/07/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	3300	ug/kg	1	3060713	06/12/13	06/17/13	EPA 8270D	
Acenaphthylene	ND	3300	"	"	"	"	"	"	
Anthracene	ND	3300	"	"	"	"	"	"	

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Arvada CO, 80003

Project: BNC - Cook 1-X

Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**PW03SP-01**  
**R306069-04 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D**

**R-01**

Benzo (a) anthracene	ND	3300	ug/kg	1	3060713	06/12/13	06/17/13	EPA 8270D
Benzo (b) fluoranthene	ND	3300	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	3300	"	"	"	"	"	"
Benzo (g,h,i) perylene	ND	3300	"	"	"	"	"	"
Benzo (a) pyrene	ND	3300	"	"	"	"	"	"
Chrysene	ND	3300	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	3300	"	"	"	"	"	"
Fluoranthene	ND	3300	"	"	"	"	"	"
Fluorene	ND	3300	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	3300	"	"	"	"	"	"
Naphthalene	ND	3300	"	"	"	"	"	"
Phenanthrene	ND	3300	"	"	"	"	"	"
Pyrene	ND	3300	"	"	"	"	"	"

Date Sampled: **06/07/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		93.1 %	-13.6-167		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		93.8 %	-7.09-147		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		127 %	-42.1-143		"	"	"	"	
Surrogate: Terphenyl-dl4		456 %	-19.4-142		"	"	"	"	S-GC

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: **06/07/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.42	0.0983	mg/kg dry	1	3061401	06/14/13	06/14/13	EPA 6020A	
Barium	247	0.0983	"	"	"	"	"	"	
Cadmium	0.172	0.0983	"	"	"	"	"	"	
Chromium	10.0	0.0983	"	"	"	"	"	"	
Copper	6.04	0.491	"	"	"	"	"	"	
Lead	12.6	0.0983	"	"	"	"	"	"	
Nickel	10.7	0.0983	"	"	"	"	"	"	
Selenium	ND	0.0983	"	"	"	"	"	"	
Silver	ND	0.0983	"	"	"	"	"	"	
Zinc	38.3	9.83	"	"	"	"	"	"	

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**PW03SP-01**  
**R306069-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

**Total Mercury by EPA Method 7471/7470/245.1**

Date Sampled: **06/07/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0489	mg/kg dry	1	3061402	06/14/13	06/14/13	EPA 7471	

**Hexavalent Chromium by EPA 7199**

Date Sampled: **06/07/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1.16	mg/kg dry	1	3061403	06/14/13	06/17/13	EPA 7199	

**Calculated Analytes**

Date Sampled: **06/07/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	<b>8.84</b>	1.00	mg/kg	1	3061817	06/18/13	06/18/13	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/07/13 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>86.5</b>		%	1	3061711	06/17/13	06/18/13	% calculation	

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**PW02SP-01**  
**R306069-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/07/13 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	3500	50	mg/kg	1	3061217	06/13/13	06/13/13	8015M	

Date Sampled: **06/07/13 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/07/13 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0045	mg/kg	1	3061216	06/13/13	06/14/13	EPA 8260B	
Toluene	ND	0.0045	"	"	"	"	"	"	
Ethylbenzene	ND	0.0045	"	"	"	"	"	"	
Xylenes (total)	ND	0.0045	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	40	0.45	"	"	"	"	"	"	

Date Sampled: **06/07/13 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		130 %	21-167		"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270D**

**R-01**

Date Sampled: **06/07/13 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	3300	ug/kg	1	3060713	06/12/13	06/17/13	EPA 8270D	
Acenaphthylene	ND	3300	"	"	"	"	"	"	
Anthracene	ND	3300	"	"	"	"	"	"	

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

Project: BNC - Cook 1-X

Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**PW02SP-01**  
**R306069-05 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D**

**R-01**

Benzo (a) anthracene	ND	3300	ug/kg	1	3060713	06/12/13	06/17/13	EPA 8270D
Benzo (b) fluoranthene	ND	3300	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	3300	"	"	"	"	"	"
Benzo (g,h,i) perylene	ND	3300	"	"	"	"	"	"
Benzo (a) pyrene	ND	3300	"	"	"	"	"	"
Chrysene	ND	3300	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	3300	"	"	"	"	"	"
Fluoranthene	ND	3300	"	"	"	"	"	"
Fluorene	ND	3300	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	3300	"	"	"	"	"	"
Naphthalene	ND	3300	"	"	"	"	"	"
Phenanthrene	ND	3300	"	"	"	"	"	"
<b>Pyrene</b>	<b>5600</b>	3300	"	"	"	"	"	"

Date Sampled: **06/07/13 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Nitrobenzene-d5		81.7 %	-13.6-167		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		86.0 %	-7.09-147		"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		134 %	-42.1-143		"	"	"	"	
Surrogate: Terphenyl-d14		520 %	-19.4-142		"	"	"	"	S-GC

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: **06/07/13 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>2.16</b>	0.105	mg/kg dry	1	3061401	06/14/13	06/14/13	EPA 6020A	
<b>Barium</b>	<b>265</b>	0.105	"	"	"	"	"	"	
<b>Cadmium</b>	<b>0.219</b>	0.105	"	"	"	"	"	"	
<b>Chromium</b>	<b>11.6</b>	0.105	"	"	"	"	"	"	
<b>Copper</b>	<b>7.18</b>	0.523	"	"	"	"	"	"	
<b>Lead</b>	<b>12.3</b>	0.105	"	"	"	"	"	"	
<b>Nickel</b>	<b>12.6</b>	0.105	"	"	"	"	"	"	
Selenium	ND	0.105	"	"	"	"	"	"	
Silver	ND	0.105	"	"	"	"	"	"	
<b>Zinc</b>	<b>50.1</b>	10.5	"	"	"	"	"	"	

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**PW02SP-01**  
**R306069-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

**Total Mercury by EPA Method 7471/7470/245.1**

Date Sampled: **06/07/13 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0520	mg/kg dry	1	3061402	06/14/13	06/14/13	EPA 7471	

**Hexavalent Chromium by EPA 7199**

Date Sampled: **06/07/13 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1.25	mg/kg dry	1	3061403	06/14/13	06/17/13	EPA 7199	

**Calculated Analytes**

Date Sampled: **06/07/13 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	<b>10.4</b>	1.00	mg/kg	1	3061817	06/18/13	06/18/13	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/07/13 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>80.1</b>		%	1	3061711	06/17/13	06/18/13	% calculation	

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 3061217 - EPA 3550A**

**Blank (3061217-BLK1)**

Prepared: 06/13/13 Analyzed: 06/14/13

C10-C28 (DRO) ND 50 mg/kg

**LCS (3061217-BS1)**

Prepared: 06/13/13 Analyzed: 06/14/13

C10-C28 (DRO) 457 50 mg/kg 501 91.1 73-134

**LCS Dup (3061217-BSD1)**

Prepared: 06/13/13 Analyzed: 06/14/13

C10-C28 (DRO) 461 50 mg/kg 501 92.0 73-134 0.924 11

**Matrix Spike (3061217-MS1)**

Source: R306067-01

Prepared: 06/13/13 Analyzed: 06/14/13

C10-C28 (DRO) 2700 50 mg/kg 479 3580 NR 50-148 QM-4X

**Matrix Spike Dup (3061217-MSD1)**

Source: R306067-01

Prepared: 06/13/13 Analyzed: 06/14/13

C10-C28 (DRO) 2810 50 mg/kg 427 3580 NR 50-148 4.08 13 QM-4X

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 3061216 - EPA 5030 Soil MS**

**Blank (3061216-BLK1)**

Prepared & Analyzed: 06/13/13

Benzene	ND	0.0050	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0397	106	23-173				
Surrogate: Toluene-d8	0.0391		"	0.0400	97.7	20-170				
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400	98.4	21-167				

**LCS (3061216-BS1)**

Prepared & Analyzed: 06/13/13

Benzene	0.152	0.0050	mg/kg	0.150	101	58-130				
Toluene	0.148	0.0050	"	0.150	98.6	61-134				
Ethylbenzene	0.148	0.0050	"	0.150	98.8	74-139				
m,p-Xylene	0.294	0.010	"	0.300	98.1	73-137				
o-Xylene	0.150	0.0050	"	0.150	100	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0447		"	0.0397	113	23-173				
Surrogate: Toluene-d8	0.0398		"	0.0400	99.4	20-170				
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400	101	21-167				

**LCS Dup (3061216-BSD1)**

Prepared & Analyzed: 06/13/13

Benzene	0.149	0.0050	mg/kg	0.150	99.1	58-130	2.24	13		
Toluene	0.146	0.0050	"	0.150	97.3	61-134	1.33	16		
Ethylbenzene	0.144	0.0050	"	0.150	96.1	74-139	2.85	12		
m,p-Xylene	0.291	0.010	"	0.300	97.1	73-137	0.994	14		
o-Xylene	0.147	0.0050	"	0.150	98.0	73-141	2.28	12		
Surrogate: 1,2-Dichloroethane-d4	0.0443		"	0.0397	112	23-173				
Surrogate: Toluene-d8	0.0405		"	0.0400	101	20-170				
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400	101	21-167				

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch 3061216 - EPA 5030 Soil MS**

Matrix Spike (3061216-MS1)		Source: R306086-01			Prepared & Analyzed: 06/13/13					
Benzene	0.109	0.0050	mg/kg	0.143	ND	76.1	30-131			
Toluene	0.108	0.0050	"	0.143	ND	75.6	30-134			
Ethylbenzene	0.103	0.0050	"	0.143	ND	72.1	22-153			
m,p-Xylene	0.205	0.010	"	0.286	ND	71.7	10-159			
o-Xylene	0.104	0.0050	"	0.143	ND	72.8	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0379		108	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0382		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0382		99.7	21-167			

Matrix Spike Dup (3061216-MSD1)		Source: R306086-01			Prepared & Analyzed: 06/13/13					
Benzene	0.117	0.0050	mg/kg	0.144	ND	81.1	30-131	7.12	34	
Toluene	0.115	0.0050	"	0.144	ND	80.0	30-134	6.40	30	
Ethylbenzene	0.115	0.0050	"	0.144	ND	80.0	22-153	11.2	24	
m,p-Xylene	0.230	0.010	"	0.288	ND	79.8	10-159	11.5	68	
o-Xylene	0.117	0.0050	"	0.144	ND	81.1	31-151	11.5	38	
Surrogate: 1,2-Dichloroethane-d4	0.0427		"	0.0382		112	23-173			
Surrogate: Toluene-d8	0.0384		"	0.0385		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0385		105	21-167			

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**Semivolatile Organic Compounds by EPA Method 8270D - Quality Control**  
**Summit Scientific**

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

**Batch 3060713 - EPA 5030 Soil MS**

**Blank (3060713-BLK1)**

Prepared: 06/12/13 Analyzed: 06/13/13

Acenaphthene	ND	330	ug/kg							
Acenaphthylene	ND	330	"							
Anthracene	ND	330	"							
Benzo (a) anthracene	ND	330	"							
Benzo (b) fluoranthene	ND	330	"							
Benzo (k) fluoranthene	ND	330	"							
Benzo (g,h,i) perylene	ND	330	"							
Benzo (a) pyrene	ND	330	"							
Chrysene	ND	330	"							
Dibenz (a,h) anthracene	ND	330	"							
Fluoranthene	ND	330	"							
Fluorene	ND	330	"							
Indeno (1,2,3-cd) pyrene	ND	330	"							
Naphthalene	ND	330	"							
Phenanthrene	ND	330	"							
Pyrene	ND	330	"							
Surrogate: Nitrobenzene-d5	1660		"	1670	99.9	-13.6-167				
Surrogate: 2-Fluorobiphenyl	1650		"	1670	99.1	-7.09-147				
Surrogate: 2,4,6-Tribromophenol	1300		"	1670	78.2	-42.1-143				
Surrogate: Terphenyl-d14	3150		"	1640	192	-19.4-142				S-GC

**LCS (3060713-BS1)**

Prepared: 06/12/13 Analyzed: 06/13/13

Acenaphthene	3340	330	ug/kg	3330	100	45-139				
Acenaphthylene	1680	330	"	1670	101	68-113				
Anthracene	1580	330	"	1670	94.8	63-119				
Benzo (a) anthracene	2420	330	"	1670	145	18-181				
Benzo (b) fluoranthene	2250	330	"	1670	135	10-169				
Benzo (k) fluoranthene	3190	330	"	1670	191	10-184				QLCS-02
Benzo (g,h,i) perylene	1850	330	"	1670	111	10-176				
Benzo (a) pyrene	2930	330	"	1670	176	14-178				
Chrysene	2570	330	"	1670	154	10-184				
Dibenz (a,h) anthracene	2280	330	"	1670	137	10-171				
Fluoranthene	1660	330	"	1670	99.4	58-127				
Fluorene	1590	330	"	1670	95.5	67-113				
Indeno (1,2,3-cd) pyrene	2090	330	"	1670	125	11-175				
Naphthalene	1570	330	"	1670	94.2	62-118				
Phenanthrene	1580	330	"	1670	94.9	62-120				
Pyrene	5330	330	"	3310	161	22-174				

Summit Scientific

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**Semivolatile Organic Compounds by EPA Method 8270D - Quality Control**  
**Summit Scientific**

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

**Batch 3060713 - EPA 5030 Soil MS**

**LCS (3060713-BS1)**

Prepared: 06/12/13 Analyzed: 06/13/13

Surrogate: Nitrobenzene-d5	1580		ug/kg	1670		94.6	-13.6-167			
Surrogate: 2-Fluorobiphenyl	1670		"	1670		100	-7.09-147			
Surrogate: 2,4,6-Tribromophenol	1200		"	1670		71.8	-42.1-143			
Surrogate: Terphenyl-d14	2710		"	1640		165	-19.4-142			S-GC

**LCS Dup (3060713-BSD1)**

Prepared: 06/12/13 Analyzed: 06/13/13

Acenaphthene	3280	330	ug/kg	3330		98.4	45-139	1.70	15	
Acenaphthylene	1630	330	"	1670		97.8	68-113	2.86	22	
Anthracene	1610	330	"	1670		96.4	63-119	1.63	14	
Benzo (a) anthracene	2410	330	"	1670		144	18-181	0.525	24	
Benzo (b) fluoranthene	2070	330	"	1670		124	10-169	8.38	22	
Benzo (k) fluoranthene	3330	330	"	1670		200	10-184	4.29	24	QLCS-02
Benzo (g,h,i) perylene	1840	330	"	1670		110	10-176	0.632	27	
Benzo (a) pyrene	3040	330	"	1670		183	14-178	3.90	18	QLCS-02
Chrysene	2540	330	"	1670		153	10-184	0.952	23	
Dibenz (a,h) anthracene	2250	330	"	1670		135	10-171	1.66	19	
Fluoranthene	1610	330	"	1670		96.3	58-127	3.09	14	
Fluorene	1540	330	"	1670		92.3	67-113	3.39	16	
Indeno (1,2,3-cd) pyrene	2120	330	"	1670		127	11-175	1.46	23	
Naphthalene	1530	330	"	1670		92.0	62-118	2.30	28	
Phenanthrene	1590	330	"	1670		95.5	62-120	0.630	16	
Pyrene	5080	330	"	3310		153	22-174	4.83	41	
Surrogate: Nitrobenzene-d5	1530		"	1670		91.8	-13.6-167			
Surrogate: 2-Fluorobiphenyl	1620		"	1670		97.1	-7.09-147			
Surrogate: 2,4,6-Tribromophenol	1310		"	1670		78.4	-42.1-143			
Surrogate: Terphenyl-d14	2560		"	1640		156	-19.4-142			S-GC

**Matrix Spike (3060713-MS1)**

Source: R306020-01

Prepared: 06/12/13 Analyzed: 06/14/13

Acenaphthene	2880	330	ug/kg	3330	ND	86.3	32-136			
Acenaphthylene	1510	330	"	1670	ND	90.4	45-114			
Anthracene	1430	330	"	1670	ND	86.1	38-121			
Benzo (a) anthracene	2210	330	"	1670	ND	133	28-135			
Benzo (b) fluoranthene	1950	330	"	1670	176	106	10-161			
Benzo (k) fluoranthene	2640	330	"	1670	ND	158	10-172			
Benzo (g,h,i) perylene	1660	330	"	1670	13.7	98.9	10-149			
Benzo (a) pyrene	2440	330	"	1670	ND	146	11-148			
Chrysene	2320	330	"	1670	ND	139	10-142			
Dibenz (a,h) anthracene	1900	330	"	1670	ND	114	10-129			
Fluoranthene	1480	330	"	1670	ND	88.9	40-141			

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**Semivolatile Organic Compounds by EPA Method 8270D - Quality Control**  
**Summit Scientific**

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

**Batch 3060713 - EPA 5030 Soil MS**

Matrix Spike (3060713-MS1)		Source: R306020-01			Prepared: 06/12/13	Analyzed: 06/14/13			
Fluorene	1410	330	ug/kg	1670	ND	84.8	45-118		
Indeno (1,2,3-cd) pyrene	1870	330	"	1670	ND	112	10-150		
Naphthalene	1420	330	"	1670	ND	85.1	51-111		
Phenanthrene	1440	330	"	1670	ND	86.7	39-135		
Pyrene	4710	330	"	3310	8.67	142	10-150		
Surrogate: Nitrobenzene-d5	1420		"	1670		85.2	-13.6-167		
Surrogate: 2-Fluorobiphenyl	1460		"	1670		87.8	-7.09-147		
Surrogate: 2,4,6-Tribromophenol	712		"	1670		42.7	-42.1-143		
Surrogate: Terphenyl-d14	2390		"	1640		146	-19.4-142		

S-GC

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control**  
**Summit Scientific**

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

**Batch 3061401 - EPA 3050B**

**Blank (3061401-BLK1)**

Prepared & Analyzed: 06/14/13

Arsenic	ND	0.100	mg/kg wet
Barium	ND	0.100	"
Cadmium	ND	0.100	"
Chromium	ND	0.100	"
Copper	ND	0.500	"
Lead	ND	0.100	"
Nickel	ND	0.100	"
Selenium	ND	0.100	"
Silver	ND	0.100	"
Zinc	ND	10.0	"

**LCS (3061401-BS1)**

Prepared & Analyzed: 06/14/13

Arsenic	2.43	0.100	mg/kg wet	2.50	97.2	80-120
Barium	243	0.100	"	225	108	80-120
Cadmium	1.03	0.100	"	1.00	103	80-120
Chromium	10.8	0.100	"	10.0	108	80-120
Copper	20.8	0.500	"	20.0	104	80-120
Lead	7.57	0.100	"	7.52	101	80-120
Nickel	16.2	0.100	"	15.0	107	80-120
Selenium	1.17	0.100	"	1.25	93.3	80-120
Silver	0.255	0.100	"	0.250	102	80-120
Zinc	12.2	10.0	"	7.52	162	80-120

QLCS-02

**LCS Dup (3061401-BSD1)**

Prepared & Analyzed: 06/14/13

Arsenic	2.36	0.100	mg/kg wet	2.51	94.2	80-120	2.88	20
Barium	236	0.100	"	226	104	80-120	3.15	20
Cadmium	0.909	0.100	"	1.01	90.4	80-120	12.4	20
Chromium	10.4	0.100	"	10.1	103	80-120	3.99	20
Copper	20.4	0.500	"	20.1	101	80-120	2.18	20
Lead	6.74	0.100	"	7.55	89.3	80-120	11.6	20
Nickel	15.6	0.100	"	15.1	103	80-120	3.75	20
Selenium	1.13	0.100	"	1.26	90.2	80-120	3.04	20
Silver	0.233	0.100	"	0.251	92.7	80-120	9.15	20
Zinc	11.9	10.0	"	7.55	157	80-120	2.42	20

QLCS-02

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control**  
**Summit Scientific**

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

**Batch 3061401 - EPA 3050B**

Matrix Spike (3061401-MS1)		Source: R306067-01			Prepared & Analyzed: 06/14/13					
Arsenic	3.34	0.101	mg/kg dry	2.53	1.39	77.4	75-125			
Barium	379	0.101	"	228	122	113	75-125			
Cadmium	1.02	0.101	"	1.01	0.110	90.0	75-125			
Chromium	16.8	0.101	"	10.1	7.28	94.3	75-125			
Copper	22.4	0.505	"	20.2	8.54	68.3	75-125			QM-07
Lead	23.7	0.101	"	7.60	14.6	119	75-125			
Nickel	32.2	0.101	"	15.2	17.5	96.4	75-125			
Selenium	0.866	0.101	"	1.27	0.0558	64.0	75-125			QM-07
Silver	0.245	0.101	"	0.253	0.0321	84.4	75-125			
Zinc	69.8	10.1	"	7.60	56.6	173	75-125			QLCS-02

Matrix Spike Dup (3061401-MSD1)		Source: R306067-01			Prepared & Analyzed: 06/14/13					
Arsenic	3.31	0.101	mg/kg dry	2.52	1.39	76.2	75-125	1.08	25	
Barium	352	0.101	"	227	122	101	75-125	7.42	25	
Cadmium	1.01	0.101	"	1.01	0.110	89.3	75-125	0.855	25	
Chromium	16.1	0.101	"	10.1	7.28	87.3	75-125	4.45	25	
Copper	22.4	0.504	"	20.2	8.54	68.5	75-125	0.0343	25	QM-07
Lead	23.9	0.101	"	7.58	14.6	122	75-125	0.936	25	
Nickel	30.5	0.101	"	15.2	17.5	85.6	75-125	5.35	25	
Selenium	0.915	0.101	"	1.26	0.0558	68.0	75-125	5.51	25	QM-07
Silver	0.236	0.101	"	0.252	0.0321	80.7	75-125	4.14	25	
Zinc	63.1	10.1	"	7.58	56.6	84.9	75-125	10.1	25	

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

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**Total Mercury by EPA Method 7471/7470/245.1 - Quality Control**  
**Summit Scientific**

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

**Batch 3061402 - EPA 7471A**

<b>Blank (3061402-BLK1)</b>				Prepared & Analyzed: 06/14/13						
Mercury	ND	0.0500	mg/kg wet							
<b>LCS (3061402-BS1)</b>				Prepared & Analyzed: 06/14/13						
Mercury	0.377	0.0500	mg/kg wet	0.400		94.3	80-120			
<b>LCS Dup (3061402-BSD1)</b>				Prepared & Analyzed: 06/14/13						
Mercury	0.415	0.0500	mg/kg wet	0.400		104	80-120	9.51	20	
<b>Matrix Spike (3061402-MS1)</b>				<b>Source: R306067-01</b>		Prepared & Analyzed: 06/14/13				
Mercury	0.410	0.0481	mg/kg dry	0.385	0.0617	90.6	80-120			
<b>Matrix Spike Dup (3061402-MSD1)</b>				<b>Source: R306067-01</b>		Prepared & Analyzed: 06/14/13				
Mercury	0.376	0.0484	mg/kg dry	0.387	0.0617	81.2	80-120	8.84	20	

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LT Environmental, Inc.  
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Arvada CO, 80003

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
06/19/13 09:15

**Hexavalent Chromium by EPA 7199 - Quality Control**  
**Summit Scientific**

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

**Batch 3061403 - General Preparation**

<b>Blank (3061403-BLK1)</b>			Prepared: 06/14/13 Analyzed: 06/17/13							
Chromium, Hexavalent	ND	1.00	mg/kg wet							
<b>LCS (3061403-BS1)</b>			Prepared: 06/14/13 Analyzed: 06/17/13							
Chromium, Hexavalent	91.6	1.25	mg/kg wet	100		91.4	85-115			
<b>LCS Dup (3061403-BSD1)</b>			Prepared: 06/14/13 Analyzed: 06/17/13							
Chromium, Hexavalent	86.2	1.25	mg/kg wet	101		85.8	85-115	5.96	20	
<b>Duplicate (3061403-DUP1)</b>			<b>Source: R306067-01</b>		Prepared: 06/14/13 Analyzed: 06/17/13					
Chromium, Hexavalent	ND	1.19	mg/kg dry		ND				20	
<b>Matrix Spike (3061403-MS1)</b>			<b>Source: R306067-01</b>		Prepared: 06/14/13 Analyzed: 06/17/13					
Chromium, Hexavalent	ND	1.19	mg/kg dry	47.7	ND		85-115			QM-05

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

Project: BNC - Cook 1-X

Project Number: 0415-12002  
Project Manager: Brian Dodek

**Reported:**  
06/19/13 09:15

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**  
**Summit Scientific**

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

**Batch 3061711 - General Preparation**

**Duplicate (3061711-DUP1)**

**Source: R306067-01**

Prepared: 06/17/13 Analyzed: 06/18/13

% Solids	82.8	%		83.8		1.20	20
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LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO, 80003

Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

**Reported:**  
06/19/13 09:15

### Notes and Definitions

- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- QLCS-02 The spike recovery was outside acceptance limits for this analyte indicating a potential high bias.
- 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