



State of Colorado

Oil and Gas Conservation Commission

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



#7410

FOR OGCC USE ONLY

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NOV 19 2012

COGCC

SITE INVESTIGATION AND REMEDIATION WORKPLAN

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

OGCC Employee:

☐ Spill ☐ Complaint  
☐ Inspection ☐ NOAV

Tracking No:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☒ Other (describe): Pit Closure

GENERAL INFORMATION

OGCC Operator Number: 7800		Contact Name and Telephone	
Name of Operator: Beren Corporation		Name: Rodney Reynolds	
Address: 2020 North Bramblewood Street		No: (316) 337-8340	
City: Wichita State: KS Zip: 67206		Fax: (316) 681-4740	
API/Facility No: 05-121-09791		County: Washington	
Facility Name: Cook Pit Complex		Facility Number: 109580, 109581, 109582, & 109583	
Well Name: Cook		Well Number: 1-X	
Location (QtrQtr, Sec, Twp, Rng, Meridian): SESE Sec. 12 T48 4S R54W 6th PM		Latitude: 39.710539 Longitude: -103.370212	

TECHNICAL CONDITIONS

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

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

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Open Pasture

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

Potential receptors (water wells within 1/4 mi, surface waters, etc.): An unnamed stream is located 1,200' east of the site.

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	250' x 300' (1 oil skim pit, 3 produced water pits)	Excavation, sampling, and laboratory analysis
<input type="checkbox"/> Vegetation		
<input type="checkbox"/> Groundwater		
<input type="checkbox"/> Surface water		

REMEDIALTION WORKPLAN

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

Not Applicable

Describe how source is to be removed:

See attached report.

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

Approximately 12,000 cubic yards of impacted soil were excavated, stockpiled, and sampled to prepare an effective and efficient remediation plan. A waste management plan will be submitted via Form 27 to lay out a remediation plan for the remaining stockpiled soil onsite.

State of Colorado  
Oil and Gas Conservation Commission

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



Tracking Number:	1761356
Name of Operator:	Beren Corporation
OGCC Operator No:	7800
Received Date:	11/19/12
Well Name & No:	Cook 1-X
Facility Name & No:	Cook Pit Complex

REMEDIAL WORKPLAN (CONT.)

OGCC Employee: John Axelsson

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):  
Groundwater was not encountered during excavation and sampling activities.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

The pit will be backfilled with clean soil. The ground surface will be contoured to match the existing grade. Beren is currently evaluating the use of the pit locations for land treatment of the stockpiled soil. If this is pursued, final reclamation would be conducted after completion of land treatment activities.

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

Is further site investigation required? ☐ Y ☒ N If yes, describe:

Analytical results for the oil skim pit and produced water pit bottoms indicate benzene, toluene, ethylbenzene, and total xylenes (BTEX), total petroleum hydrocarbons (TPH)-gasoline range organics, and TPH-diesel range organics were in compliance with Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 Concentration Levels.

As the oil skim pit and three produced water pits have been remediated to meet cleanup levels specified in COGCC Table 910-1, Beren is requesting authorization to backfill the compliant pits. See attached report for more details.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Approximately 12,000 cubic yards of impacted soil was excavated, stockpiled, and sampled to determine an effective and efficient remediation plan. A waste management plan will be submitted via Form 27 to lay out the plan for remediation of the remaining onsite stockpiled soil.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began:	8/14/2012	Date Site Investigation Completed:	8/14/2012	Remediation Plan Submitted:	11/15/2012
Remediation Start Date:	9/11/2012	Anticipated Completion Date:	NA	Actual Completion Date:	TBD

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

Print Name: Rodney Reynolds

Signed: [Signature] Title: Division Engineer Date: 11/15/2012

OGCC Approved: [Signature] Title: EPS Date: 11/20/12



November 15, 2012

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

**RE: Beren Corporation  
Cook 1-X Pit Closure  
Facility ID: 109580, 109581, 109582, & 109583  
SESE Sec. 12 T4S R54W, 6th Principal Meridian  
Washington County, Colorado**

Dear Mr. Axelson:

LT Environmental, Inc. (LTE), under the direction of Beren Corporation (Beren), conducted environmental remediation and sampling activities following the identification of petroleum hydrocarbon impacted soil during oil skim pit and produced water pit closure activities at the Cook 1-X Pit Complex (Site). The Site is located 0.1 miles west of the intersection of County Road (CR) U and CR 10 in Washington County, Colorado (Figure 1).

On August 14, 2012, LTE personnel were present for an initial investigation of the pit bottoms at the Site. Composite soil samples were collected from the oil skim pit (OS-01) and three produced water pits (PW-01, PW-02, and PW-03) as illustrated in Figure 2. Composite soil samples were submitted to Summit Scientific, Inc. (Summit) of Golden, Colorado, for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) by United States Environmental Protection Agency (EPA) Method 8260B, TPH-diesel range organics (DRO) by EPA Modified Method 8015, pH by EPA Method 9045, specific conductance (EC) by Standard Method 2510B, and sodium adsorption ratio (SAR) by the United States Department of Agriculture Handbook 60 Method. Composite soil samples (SP-01, SP-02, SP-03, and SP-04) were collected from two onsite soil stockpiles, which consisted of soil removed from the oil skim pit. The samples were submitted to Summit for analysis of BTEX, TPH-GRO, and TPH-DRO. Soil from additional excavation was later combined with the two initial stockpiles and the larger stockpile is now characterized by sample OS01SP-01 as depicted in Figure 2.

Soil analytical results from the initial site investigation sampling indicated PW-01 and PW-03 exceeded the Colorado Oil and Gas Conservation Commission (COGCC) Concentration Level for EC at 10.8 millimhos per centimeter (mmhos/cm) and 8.78 mmhos/cm, respectively. Samples PW-01, PW-02, and PW-03 also exceeded the COGCC Concentration Level for SAR at levels of 40.7, 19.8, and 21.0, respectively. However, the samples were collected at a depth well below the vegetative root zone. The exceedances of EC and SAR at these depths will not affect reclamation. Samples OS-01, PW-01, PW-02, PW-03, SP-01, SP-02, SP-03, and SP-04 all





exceeded the COGCC Table 910-1 Concentration Level for TPH ranging from 1,200 milligrams per kilogram (mg/kg) to 22,007.4 mg/kg. Analytical results for the oil skim pit and produced water pits are summarized in Table 1. Analytical results for the soil stockpiles are summarized in Table 2. The laboratory analytical reports are attached.

As a result of the TPH concentrations identified during the initial investigation additional excavation and confirmation sampling was conducted from September 11, 2012 to September 25, 2012. LTE personnel were present to oversee additional excavation activities, field screen soil, document site activities, conduct health and safety monitoring, and collect confirmation samples for laboratory analysis. Composite soil samples were collected from the excavation bottom and were field screened for volatile organic compounds and TPH with a photo-ionization detector and a PetroFLAG TPH screening kit to evaluate if additional excavation was required. Once field screening indicated all the impacted soil had been removed from the oil skim pit and three produced water pits, confirmation samples OS-01, PW-01, PW-02, & PW-03 were collected and submitted to Summit for laboratory analysis of BTEX, TPH-GRO, and/or TPH-DRO. The north produced water pit was sampled to characterize the exposed pit bottom on September 18, 2012. The pit was partially filled with stormwater. The analytical results indicated the excavated and exposed soil was compliant with COGCC Table 910-1 Concentration Levels. However, Beren was able to remove the remaining stormwater and conduct the final excavation of the remaining soil. Following the soil removal, LTE collected another composite sample on September 25, 2012 to confirm the soil was still compliant with COGCC Table 910-1 Concentration Levels.

Soil analytical results from all final pit closure samples indicated samples OS-01, PW-01, PW-02, & PW-03 were in compliance with the COGCC Table 910-1 Concentration Level for BTEX and TPH (Table 1).

Beren operations personnel informed LTE that the berm for the south produced water pit was previously raised by dredging soil from the bottom of the pit. To characterize the berm soil, composite sample BM-01 was collected and submitted to Summit for laboratory analysis of BTEX, TPH-GRO, and TPH-DRO on September 12, 2012. Laboratory analytical results indicated berm characterization sample BM-01 was in compliance with the COGCC Table 910-1 Concentration Levels for BTEX and TPH. Therefore the berm will be used as backfill during pit closure. Analytical results for BM-01 are summarized in Table 2. Sample location BM-01 is depicted on Figure 2.

On October 3, 2012, LTE personnel returned to the Site to collect composite soil samples (PW02SP-01, PW02SP-02, PW02SP-03, PW03SP-01, PW03SP-02, PW03SP-03, PW03SP-04, and OS01SP-01) from the onsite soil stockpiles depicted on Figure 2. The limited soil excavated from the north produced water pit was combined with a previous stockpile west of the oil skim pit. The soil excavated from the north produced water pit is now characterized by sample OS01SP-01. There are approximately 12,000 cubic yards of impacted soil currently stockpiled at the Site. The stockpile samples were collected to characterize the impacted soil removed from the excavation and determine which remediation options best fit the stockpiled soil. Samples



were submitted to Summit for analysis of BTEX, TPH-GRO, and TPH-DRO. Analytical results indicated all stockpiles exceeded the COGCC Table 910-1 Concentration Level for TPH, ranging between 550 and 4,870 mg/kg. Stockpile samples PW02SP-02, PW03SP-01, and OS01SP-01 were also analyzed for EC, pH, and SAR. Only sample PW02SP-02 exceeded the COGCC Table 910-1 Concentration Level for pH at a level of 9.1.

LTE is currently designing the best fit remedial option for the stockpiles. A waste management plan will be prepared and submitted with a Form 27 to layout the stockpile remediation plan and future confirmation data submittals.

As soil in the oil skim pit and three produced water pits have now been remediated to achieve COGCC cleanup goals, Beren is requesting authorization to backfill the compliant 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, appearing to read "Michael Wicker".

Michael Wicker  
Staff Geologist

A handwritten signature in black ink, appearing to read "Brian Dodek".

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

Attachments

Figure 1 - Site Location Map

Figure 2 - Site Map

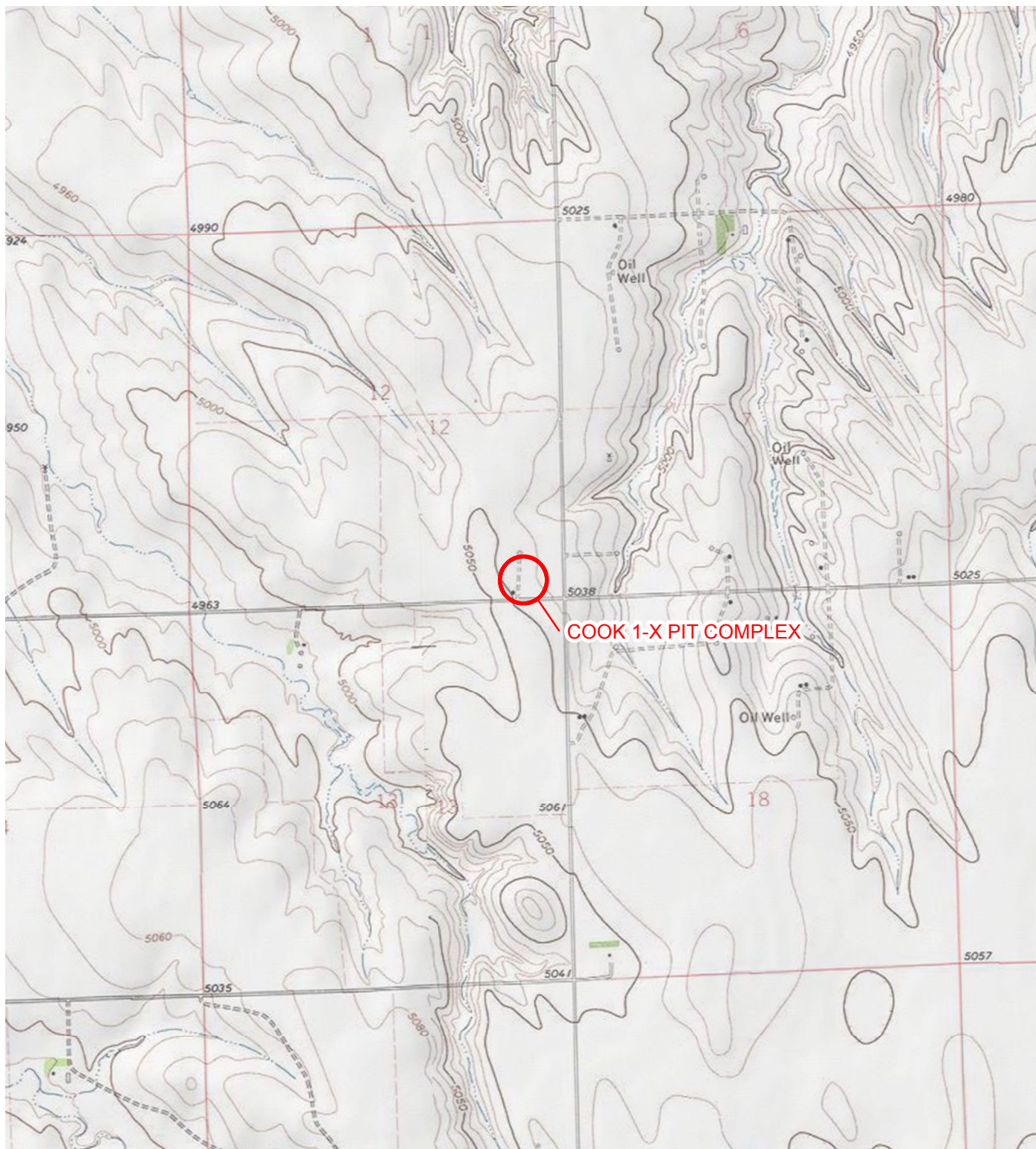
Table 1 - Soil Analytical Results – Oil Skim Pit/Produced Water Pits

Table 2 - Soil Analytical Results – Soil Stockpiles/Berm Characterization

Attachment 1 - Laboratory Analytical Reports

## FIGURES





# LEGEND

○ SITE LOCATION

IMAGE COURTESY OF ESRI/BING MAPS

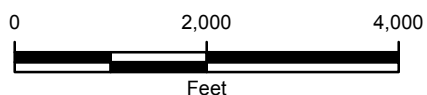


FIGURE 1  
SITE LOCATION MAP  
COOK 1-X PIT CLOSURE  
WASHINGTON COUNTY, COLORADO

BEREN CORPORATION



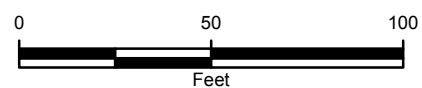




IMAGE COURTESY OF ESRI/BING MAPS

# **LEGEND**

- PIT SAMPLE
- ⊙ STOCKPILE SAMPLE
- ▲ BERM CHARACTERIZATION SAMPLE
- OIL SKIM PIT
- STOCKPILE



**FIGURE 2**  
**SITE MAP**  
**COOK 1-X PIT CLOSURE**  
**WASHINGTON COUNTY, COLORADO**

**BEREN CORPORATION**





## TABLES

TABLE 1  
SOIL ANALYTICAL RESULTS  
COOK 1-X PIT CLOSURE - OIL SKIM PIT / PRODUCED WATER PITS  
WASHINGTON COUNTY, COLORADO  
BEREN CORPORATION

PARAMETER	COGCC Table 910-1 Concentration Level	UNITS	Sample ID: OS-01	Sample ID: OS-01	Sample ID: PW-01	Sample ID: PW-01	Sample ID: PW-01	Sample ID: PW-02	Sample ID: PW-02	Sample ID: PW-03	Sample ID: PW-03
Sample Date			8/14/2012	9/11/2012	8/14/2012	9/18/2012	9/25/2012	8/14/2012	9/17/2012	8/14/2012	9/12/2012
Sample Type			Oil Skim Pit	Oil Skim Pit	Produced Water Pit	Produced Water Pit	Produced Water Pit	Produced Water Pit	Produced Water Pit	Produced Water Pit	Produced Water Pit
Benzene	0.17	mg/kg	<0.0050	--	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	--
Toluene	85	mg/kg	<0.0050	--	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	--
Ethylbenzene	100	mg/kg	<0.0050	--	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	--
Total Xylenes	175	mg/kg	<0.0050	--	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	--
TPH-GRO		mg/kg	<0.50	--	<0.50	<0.50	<0.50	7.4	<0.50	<0.50	--
TPH-DRO		mg/kg	2,200	<50	1,200	420	390	22,000	<50	8,000	<50
Total TPH	500	mg/kg	<b>2,200</b>	--	<b>1,200</b>	420	390	<b>22,007.4</b>	<50.50	<b>8,000</b>	--
EC	<4	mmhos/cm	1.08	--	<b>10.8</b>	--	--	2.48	--	<b>8.78</b>	--
pH	6 - 9	SU	<b>9.0</b>	--	8.1	--	--	7.8	--	7.2	--
SAR	<12	unitless	7.27	--	<b>40.7</b>	--	--	<b>19.8</b>	--	<b>21.0</b>	--

**NOTES:**

< - less than the stated laboratory reporting limit

-- - not analyzed

EC - specific conductance

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter in saturated paste extract

SAR - sodium adsorption ratio

SU - standard unit on saturated paste

TPH-DRO - total petroleum hydrocarbons-diesel range organics

TPH-GRO - total petroleum hydrocarbons-gasoline range organics

Total TPH - sum of TPH-DRO and TPH-GRO

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



TABLE 2  
SOIL ANALYTICAL RESULTS - SOIL STOCKPILES / BERM CHARACTERIZATION  
COOK 1-X PIT CLOSURE  
WASHINGTON COUNTY, COLORADO  
BEREN CORPORATION

PARAMETER	COGCC Table 910-1 Concentration Level	UNITS	Sample ID: SP-01	Sample ID: SP-02	Sample ID: SP-03	Sample ID: SP-04	Sample ID: BM-01	Sample ID: OS01SP-01	Sample ID: PW02SP-01	Sample ID: PW02SP-02	Sample ID: PW02SP-03	Sample ID: PW03SP-01	Sample ID: PW03SP-02	Sample ID: PW03SP-03	Sample ID: PW03SP-04
Sample Date			8/14/2012	8/14/2012	8/14/2012	8/14/2012	9/12/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012
Sample Type			Soil Stockpile	Soil Stockpile	Soil Stockpile	Soil Stockpile	Berm Characterization	Soil Stockpile	Soil Stockpile	Soil Stockpile	Soil Stockpile	Soil Stockpile	Soil Stockpile	Soil Stockpile	Soil Stockpile
Benzene	0.17	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Toluene	85	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Ethylbenzene	100	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Xylenes	175	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
TPH-GRO		mg/kg	<0.50	11	6.0	2.2	<0.50	12	580	140	150	45	25	170	130
TPH-DRO		mg/kg	2,200	2,900	4,900	650	<50	1,600	3,900	410	2,500	560	1,000	4,700	3,300
Total TPH	500	mg/kg	<b>2,200</b>	<b>2,911</b>	<b>4,906</b>	<b>652.2</b>	<50.50	<b>1,612</b>	<b>4,480</b>	<b>550</b>	<b>2,650</b>	<b>605</b>	<b>1,025</b>	<b>4,870</b>	<b>3,430</b>
EC	<4	mmhos/cm	--	--	--	--	--	1.43	--	2.04	--	1.48	--	--	--
pH	6 - 9	SU	--	--	--	--	--	8.8	--	<b>9.1</b>	--	8.8	--	--	--
SAR	<12	unitless	--	--	--	--	--	7.75	--	10.7	--	3.86	--	--	--

**NOTES:**  
< - less than the stated laboratory reporting limit  
-- - not analyzed  
EC - specific conductance  
mg/kg - milligrams per kilogram  
mmhos/cm - millimhos per centimeter in saturated paste extract  
SAR - sodium adsorption ratio  
SU - standard unit on saturated paste  
TPH-DRO - total petroleum hydrocarbons-diesel range organics  
TPH-GRO - total petroleum hydrocarbons-gasoline range organics  
Total TPH - sum of TPH-DRO and TPH-GRO  
**BOLD** - indicates result exceeds the applicable Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 Concentration Level





**ATTACHMENT 1**  
**LABORATORY ANALYTICAL REPORTS**



# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 17, 2012

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 08/15/12 10:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Joe Egry" with a stylized flourish at the end.

Joe Egry For Ben Shrewsbury  
President / Laboratory Director



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

Project: BNC - Cook 1-X

Project Number: 0415-12002  
Project Manager: Brian Dodek

**Reported:**  
08/17/12 11:02

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PW-01	R208086-01	Soil	08/14/12 13:05	08/15/12 10:30
PW-02	R208086-02	Soil	08/14/12 13:10	08/15/12 10:30
PW-03	R208086-03	Soil	08/14/12 13:15	08/15/12 10:30
OS-01	R208086-04	Soil	08/14/12 13:20	08/15/12 10:30
SP-01	R208086-05	Soil	08/14/12 13:30	08/15/12 10:30
SP-02	R208086-06	Soil	08/14/12 13:35	08/15/12 10:30
SP-03	R208086-07	Soil	08/14/12 13:40	08/15/12 10:30
SP-04	R208086-08	Soil	08/14/12 13:45	08/15/12 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.*





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

Project: BNC - Cook 1-X

Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
08/17/12 11:02

R20806

Summit Scientific

741 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9310 • 303-277-9531 Fax

Client: LT Environmental, Inc.  
Address: 4600 West 60th Avenue  
City/State/Zip: Arvada, CO 80003  
Phone: (303) 433-9788  
Sample Name: Mike Wicker  
Project Manager: Brian Dodek  
E-Mail: bdodek@env.com  
Project Name: Cook 1-X  
Project Number: 0415-12002

Page 1 of 1

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix	Analyze For:	Special Instructions	Notes
				HCl	HNO <sub>3</sub>	None	Other (Specify)				
PW-01	8-14-12	13:05	2			X		Soil	Table 910.1 metals SAR PH / EC BTX GBTEX DRO Other (Specify)	6516X/180 24hr 74-T	
PW-02	8-14-12	13:10	1								
PW-03	8-14-12	13:15	1								
OS-01	8-14-12	13:20	1							Hold EC, PH, SAR	
SP-01	8-14-12	13:30	1							Residue for results	
SP-02	8-14-12	13:35	1							(SAR-BTEX only)	
SP-03	8-14-12	13:40	1								
SP-04	8-14-12	13:45	1							OS-02, PW-02, PW-04 EC, PH, SAR standard	
										74-T	

Relinquished by: <u>Brian Dodek</u>	Date/Time: <u>8-15-12</u>	Received by: <u>[Signature]</u>	Date/Time: <u>8/16/12</u>
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:

Turn Around Time (Check)	72 Hours	Standard	<input checked="" type="checkbox"/>
Same Day	24 Hours	48 Hours	<input checked="" type="checkbox"/>
Sample Integrity	Instructions		
Temperature Upon Receipt	57		
Intact	Yes	No	

www.s2scientific.com

*[Signature]*



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

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

Reported:  
08/17/12 11:02

**PW-01**  
**R208086-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/14/12 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1200	50	mg/kg	1	2081502	08/15/12	08/16/12	8015 Full Carbon Chain	

Date Sampled: **08/14/12 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		116 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2081501	"	08/15/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		82.1 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		96.0 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.1 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	10.8	0.00100	mmhos/cm	1	2081508	08/15/12	08/15/12	SM 2510B	

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:**  
08/17/12 11:02

**PW-01**  
**R208086-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/14/12 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.1</b>		pH Units	1	2081509	08/15/12	08/15/12	EPA 9045B	

**Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis**

Date Sampled: **08/14/12 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>414</b>	2.50	mg/kg	1	2081510	08/15/12	08/16/12	EPA 6020/Mod. USDA60 6(2, 3A)	
<b>Magnesium</b>	<b>32.7</b>	1.00	"	"	"	"	"	"	
<b>Sodium</b>	<b>3200</b>	5.00	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>40.7</b>		units	"	2081609	08/16/12	08/16/12	"	

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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:  
08/17/12 11:02

**PW-02**  
**R208086-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/14/12 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	22000	50	mg/kg	1	2081502	08/15/12	08/15/12	8015 Full Carbon Chain	

Date Sampled: **08/14/12 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		87.5 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2081501	"	08/15/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	7.4	0.50	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.4 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		88.6 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.48	0.00100	mmhos/cm	1	2081508	08/15/12	08/15/12	SM 2510B	

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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:  
08/17/12 11:02

**PW-02**  
**R208086-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/14/12 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.8</b>		pH Units	1	2081509	08/15/12	08/15/12	EPA 9045B	

**Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis**

Date Sampled: **08/14/12 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>149</b>	2.50	mg/kg	1	2081510	08/15/12	08/16/12	EPA 6020/Mod. USDA60 6(2, 3A)	
<b>Magnesium</b>	<b>5.74</b>	1.00	"	"	"	"	"	"	
<b>Sodium</b>	<b>904</b>	5.00	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>19.8</b>		units	"	2081609	08/16/12	08/16/12	"	

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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:  
08/17/12 11:02

**PW-03**  
**R208086-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/14/12 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	8000	50	mg/kg	1	2081502	08/15/12	08/15/12	8015 Full Carbon Chain	

Date Sampled: **08/14/12 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		140 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2081501	"	08/15/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		81.7 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		94.1 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.9 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	8.78	0.00100	mmhos/cm	1	2081508	08/15/12	08/15/12	SM 2510B	

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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:  
08/17/12 11:02

**PW-03**  
**R208086-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/14/12 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.2		pH Units	1	2081509	08/15/12	08/15/12	EPA 9045B	

**Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis**

Date Sampled: **08/14/12 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1080	2.50	mg/kg	1	2081510	08/15/12	08/16/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	63.9	1.00	"	"	"	"	"	"	
Sodium	2630	5.00	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	21.0		units	"	2081609	08/16/12	08/16/12	"	

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Arvada CO, 80003

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

Reported:  
08/17/12 11:02

**OS-01**  
**R208086-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/14/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	2200	50	mg/kg	1	2081502	08/15/12	08/15/12	8015 Full Carbon Chain	

Date Sampled: **08/14/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		127 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2081501	"	08/15/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		75.5 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		94.9 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		74.8 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.08	0.00100	mmhos/cm	1	2081508	08/15/12	08/15/12	SM 2510B	

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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:  
08/17/12 11:02

**OS-01**  
**R208086-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/14/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.0		pH Units	1	2081509	08/15/12	08/15/12	EPA 9045B	

**Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis**

Date Sampled: **08/14/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	383	2.50	mg/kg	1	2081510	08/15/12	08/16/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	64.6	1.00	"	"	"	"	"	"	
Sodium	584	5.00	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.27		units	"	2081609	08/16/12	08/16/12	"	

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4600 West 60th Avenue  
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Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
08/17/12 11:02

**SP-01**  
**R208086-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/14/12 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	2200	50	mg/kg	1	2081502	08/15/12	08/15/12	8015 Full Carbon Chain	

Date Sampled: **08/14/12 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2081501	"	08/15/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.4 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		96.6 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.6 %	30-150		"	"	"	"	

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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:  
08/17/12 11:02

**SP-02**  
**R208086-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/14/12 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	2900	50	mg/kg	1	2081502	08/15/12	08/15/12	8015 Full Carbon Chain	

Date Sampled: **08/14/12 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		127 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0045	mg/kg	1	2081501	"	08/15/12	EPA 8260B	
Toluene	ND	0.0045	"	"	"	"	"	"	
Ethylbenzene	ND	0.0045	"	"	"	"	"	"	
Xylenes (total)	ND	0.0045	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	11	0.45	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		77.2 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		93.2 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		80.6 %	30-150		"	"	"	"	

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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:  
08/17/12 11:02

**SP-03**  
**R208086-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/14/12 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	4900	50	mg/kg	1	2081502	08/15/12	08/15/12	8015 Full Carbon Chain	

Date Sampled: **08/14/12 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2081501	"	08/15/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6.0	0.50	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		80.0 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		94.5 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %	30-150		"	"	"	"	

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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:  
08/17/12 11:02

**SP-04**  
**R208086-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/14/12 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	650	50	mg/kg	1	2081502	08/15/12	08/16/12	8015 Full Carbon Chain	

Date Sampled: **08/14/12 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.8 %	30-150		"	"	"	"	

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

Date Sampled: **08/14/12 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2081501	"	08/15/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.2	0.50	"	"	"	"	"	"	

Date Sampled: **08/14/12 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		76.7 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		95.4 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		121 %	30-150		"	"	"	"	

Summit Scientific

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

Reported:  
08/17/12 11:02

**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 2081502 - EPA 3550A**

**Blank (2081502-BLK1)**

Prepared: 08/15/12 Analyzed: 08/16/12

C10-C28 (DRO) ND 50 mg/kg

**LCS (2081502-BS1)**

Prepared: 08/15/12 Analyzed: 08/16/12

C10-C28 (DRO) 423 50 mg/kg 501 84.4 79.3-126

**LCS Dup (2081502-BSD1)**

Prepared: 08/15/12 Analyzed: 08/16/12

C10-C28 (DRO) 423 50 mg/kg 501 84.4 79.3-126 0.0402 11

**Matrix Spike (2081502-MS1)**

Source: R208083-01

Prepared: 08/15/12 Analyzed: 08/16/12

C10-C28 (DRO) 451 50 mg/kg 501 ND 89.9 45.1-150

**Matrix Spike Dup (2081502-MSD1)**

Source: R208083-01

Prepared: 08/15/12 Analyzed: 08/16/12

C10-C28 (DRO) 445 50 mg/kg 501 ND 88.7 45.1-150 1.32 25

Summit Scientific

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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:  
08/17/12 11:02

**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 2081501 - EPA 5030 Soil MS**

**Blank (2081501-BLK1)**

Prepared & Analyzed: 08/15/12

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	0.0392		"	0.0397		98.8	30-150			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	30-150			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	30-150			

**LCS (2081501-BS1)**

Prepared & Analyzed: 08/15/12

Benzene	0.153	0.0050	mg/kg	0.150		102	58.1-115			
Toluene	0.154	0.0050	"	0.150		103	56.7-123			
Ethylbenzene	0.160	0.0050	"	0.150		106	61.4-138			
m,p-Xylene	0.314	0.010	"	0.300		105	63.6-128			
o-Xylene	0.154	0.0050	"	0.150		102	62.6-134			
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0397		99.0	30-150			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	30-150			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	30-150			

**Matrix Spike (2081501-MS1)**

Source: R208083-01

Prepared & Analyzed: 08/15/12

Benzene	0.136	0.0050	mg/kg	0.150	ND	90.5	47.2-120			
Toluene	0.127	0.0050	"	0.150	ND	85.0	47.7-125			
Ethylbenzene	0.121	0.0050	"	0.150	ND	80.8	34.5-150			
m,p-Xylene	0.234	0.010	"	0.300	0.00347	76.9	30-150			
o-Xylene	0.113	0.0050	"	0.150	ND	75.6	30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0423		"	0.0397		106	30-150			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	30-150			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	30-150			

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:  
08/17/12 11:02

**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 2081501 - EPA 5030 Soil MS**

Matrix Spike Dup (2081501-MSD1)		Source: R208083-01			Prepared & Analyzed: 08/15/12					
Benzene	0.134	0.0050	mg/kg	0.149	ND	89.9	47.2-120	1.20	15.1	
Toluene	0.128	0.0050	"	0.149	ND	86.0	47.7-125	0.572	16.8	
Ethylbenzene	0.123	0.0050	"	0.149	ND	82.2	34.5-150	1.07	10.1	
m,p-Xylene	0.237	0.010	"	0.298	0.00347	78.5	30-150	1.35	17.2	
o-Xylene	0.115	0.0050	"	0.149	ND	77.0	30-150	1.13	15.2	
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0395		104	30-150			
Surrogate: Toluene-d8	0.0400		"	0.0398		101	30-150			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0398		103	30-150			

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:**  
08/17/12 11:02

**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 2081508 - General Preparation**

<b>Duplicate (2081508-DUP1)</b>	<b>Source: R208086-04</b>			Prepared & Analyzed: 08/15/12							
Specific Conductance (EC)	1.01	0.00100	mmhos/cm		1.08			6.45		15.5	

**Batch 2081509 - General Preparation**

<b>Duplicate (2081509-DUP1)</b>	<b>Source: R208086-04</b>			Prepared & Analyzed: 08/15/12							
pH	8.9		pH Units		9.0			0.112		4.95	

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:  
08/17/12 11:02

**Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis - Quality Control**  
**Summit Scientific**

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

**Batch 2081510 - General Preparation**

**Blank (2081510-BLK1)**

Prepared: 08/15/12 Analyzed: 08/16/12

Calcium	ND	2.50	mg/kg
Magnesium	ND	1.00	"
Sodium	ND	5.00	"

**LCS (2081510-BS1)**

Prepared: 08/15/12 Analyzed: 08/16/12

Calcium	378	2.50	mg/kg	400	94.5	70-130
Magnesium	187	1.00	"	200	93.5	70-130
Sodium	765	5.00	"	800	95.6	70-130

**LCS Dup (2081510-BSD1)**

Prepared: 08/15/12 Analyzed: 08/16/12

Calcium	388	2.50	mg/kg	400	96.9	70-130	2.57	25
Magnesium	203	1.00	"	200	101	70-130	8.00	25
Sodium	807	5.00	"	800	101	70-130	5.40	25

**Matrix Spike (2081510-MS1)**

Source: R208085-03

Prepared: 08/15/12 Analyzed: 08/16/12

Calcium	775	2.50	mg/kg	382	371	106	70-130
Magnesium	276	1.00	"	191	70.2	108	70-130
Sodium	1020	5.00	"	764	301	94.7	70-130

**Matrix Spike Dup (2081510-MSD1)**

Source: R208085-03

Prepared: 08/15/12 Analyzed: 08/16/12

Calcium	729	2.50	mg/kg	381	371	93.9	70-130	6.19	25
Magnesium	253	1.00	"	190	70.2	96.1	70-130	8.57	25
Sodium	947	5.00	"	761	301	84.9	70-130	7.81	25

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:**  
08/17/12 11:02

### 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

A handwritten signature in black ink, appearing to read 'Daniel A. [unclear]'.

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 23, 2012

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 09/13/12 17:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph J. Egry IV".

Joseph J Egry IV For Ben Shrewsbury  
President / Laboratory Manager



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

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

**Reported:**  
10/23/12 14:09

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
OS-01	R209080-01	Soil	09/11/12 13:55	09/13/12 17:05
PW-03	R209080-02	Soil	09/12/12 15:45	09/13/12 17:05
BM-01	R209080-03	Soil	09/12/12 14:30	09/13/12 17:05

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:**

10/23/12 14:09

Summit Scientific

52

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303-277-9310 • 303-277-9531 Fax

Page | of |

Client: LT Environmental, Inc.

Address: 4600 West 60th Avenue

City/State/Zip: Arvada, CO 80003

City/State/Zip: Arvada, CO 80003  
Phone: (303) 427-0788

Phone: (303) 433-9788

Sampler Name: White's Wood

**Project Manager:**  
Brian Dodek

E-Mail: [bdodek@ltenv.com](mailto:bdodek@ltenv.com)

Product Name: \_\_\_\_\_

Project Name: \_\_\_\_\_  
 Project Number: \_\_\_\_\_

Project Number: 04-1512006

Sample Description		Date Sampled	Time Sampled	Containers	HCl	HNO <sub>3</sub>	Zone	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Matrix	Preservative	Analyze For:	Special Instructions
05-01	9/11/02	1355	1			X	X			X				Table 910.1 metals SAR PH / EC BTX GBTEX DRO	
011-03	9/12/02	1545	1			X	X			X					
54-01	9/12/02	1430	3			X	X			X				X	
Relinquished by:	Date Time:	9/13/02 1700		Received by:	Date Time:	9/13/02 17:30		Turn Around Time (Check)		Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>		Notes:			
Relinquished by:	Date Time:			Received by:	Date Time:			Sample Integrity:		Temperature Log Receipt: <input checked="" type="checkbox"/>		Initials: <input checked="" type="checkbox"/>			
Relinquished by:	Date Time:			Received in Lab by:	Date Time:										

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*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.*

*Legal Eagle 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:**  
10/23/12 14:09

**OS-01**  
**R209080-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/11/12 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091503	09/15/12	09/15/12	8015 Full Carbon Chain	

Date Sampled: **09/11/12 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		76.3 %	30-150		"	"	"	"	

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:**  
10/23/12 14:09

**PW-03**  
**R209080-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/12/12 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091503	09/15/12	09/15/12	8015 Full Carbon Chain	

Date Sampled: **09/12/12 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		76.5 %	30-150		"	"	"	"	

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:  
10/23/12 14:09

**BM-01**  
**R209080-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/12/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (TEPH-DRO)	ND	50	mg/kg	1	2091503	09/15/12	09/15/12	8015 Full Carbon Chain	

Date Sampled: **09/12/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		74.6 %	30-150		"	"	"	"	

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

Date Sampled: **09/12/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2091502	09/15/12	09/15/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/12/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	30-150		"	"	"	"	

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:  
10/23/12 14:09

**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 2091503 - EPA 3550A**

**Blank (2091503-BLK1)**

Prepared & Analyzed: 09/15/12

C10-C28 (DRO)	ND	50	mg/kg
C10-C28 (TEPH-DRO)	ND	50	"

**LCS (2091503-BS1)**

Prepared & Analyzed: 09/15/12

C10-C28 (TEPH-DRO)	438	50	mg/kg	501	87.4	73-134
C10-C28 (DRO)	438	50	"	501	87.4	73-134

**LCS Dup (2091503-BSD1)**

Prepared & Analyzed: 09/15/12

C10-C28 (TEPH-DRO)	454	50	mg/kg	501	90.5	73-134	3.48	11
C10-C28 (DRO)	454	50	"	501	90.5	73-134	3.48	11

**Matrix Spike (2091503-MS1)**

Source: R209092-01

Prepared & Analyzed: 09/15/12

C10-C28 (TEPH-DRO)	423	50	mg/kg	484	7.54	86.0	50-148
C10-C28 (DRO)	423	50	"	484	7.54	86.0	50-148

**Matrix Spike Dup (2091503-MSD1)**

Source: R209092-01

Prepared & Analyzed: 09/15/12

C10-C28 (DRO)	432	50	mg/kg	497	7.54	85.5	50-148	2.08	13
C10-C28 (TEPH-DRO)	432	50	"	497	7.54	85.5	50-148	2.08	13

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:  
10/23/12 14:09

**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 2091502 - EPA 5030 Soil MS**

**Blank (2091502-BLK1)**

Prepared & Analyzed: 09/15/12

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	0.0400		"	0.0397	101	30-150				
Surrogate: Toluene-d8	0.0379		"	0.0400	94.7	30-150				
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400	96.1	30-150				

**LCS (2091502-BS1)**

Prepared & Analyzed: 09/15/12

Benzene	0.0907	0.0050	mg/kg	0.100	90.7	58-130				
Toluene	0.0990	0.0050	"	0.100	99.0	61-134				
Ethylbenzene	0.111	0.0050	"	0.100	111	74-139				
m,p-Xylene	0.223	0.010	"	0.200	111	73-137				
o-Xylene	0.115	0.0050	"	0.100	115	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0387		"	0.0397	97.6	30-150				
Surrogate: Toluene-d8	0.0388		"	0.0400	97.0	30-150				
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400	93.4	30-150				

**LCS Dup (2091502-BSD1)**

Prepared & Analyzed: 09/15/12

Benzene	0.0922	0.0050	mg/kg	0.100	92.2	58-130	1.61	13		
Toluene	0.0941	0.0050	"	0.100	94.1	61-134	5.03	16		
Ethylbenzene	0.113	0.0050	"	0.100	113	74-139	1.91	12		
m,p-Xylene	0.225	0.010	"	0.200	113	73-137	1.17	14		
o-Xylene	0.115	0.0050	"	0.100	115	73-141	0.183	12		
Surrogate: 1,2-Dichloroethane-d4	0.0378		"	0.0397	95.1	30-150				
Surrogate: Toluene-d8	0.0367		"	0.0400	91.6	30-150				
Surrogate: 4-Bromofluorobenzene	0.0361		"	0.0400	90.2	30-150				

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:  
10/23/12 14:09

**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 2091502 - EPA 5030 Soil MS**

Matrix Spike (2091502-MS1)		Source: R209092-01			Prepared & Analyzed: 09/15/12					
Benzene	0.0919	0.0050	mg/kg	0.100	ND	91.9	30-131			
Toluene	0.0978	0.0050	"	0.100	ND	97.8	30-134			
Ethylbenzene	0.114	0.0050	"	0.100	ND	114	22-153			
m,p-Xylene	0.224	0.010	"	0.200	ND	112	10-159			
o-Xylene	0.114	0.0050	"	0.100	ND	114	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0397		99.8	30-150			
Surrogate: Toluene-d8	0.0373		"	0.0400		93.2	30-150			
Surrogate: 4-Bromofluorobenzene	0.0371		"	0.0400		92.7	30-150			
Matrix Spike Dup (2091502-MSD1)		Source: R209092-01			Prepared & Analyzed: 09/15/12					
Benzene	0.0907	0.0050	mg/kg	0.100	ND	90.7	30-131	1.25	34	
Toluene	0.0943	0.0050	"	0.100	ND	94.3	30-134	3.69	30	
Ethylbenzene	0.109	0.0050	"	0.100	ND	109	22-153	4.77	24	
m,p-Xylene	0.219	0.010	"	0.200	ND	110	10-159	2.07	68	
o-Xylene	0.113	0.0050	"	0.100	ND	113	31-151	0.975	38	
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0397		101	30-150			
Surrogate: Toluene-d8	0.0384		"	0.0400		96.1	30-150			
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400		93.5	30-150			

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:**  
10/23/12 14:09

### 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

A handwritten signature in black ink, appearing to read 'Daniel A. [unclear]'.

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

September 19, 2012

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 09/18/12 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph J. Egry IV".

Joseph J Egry IV For Ben Shrewsbury  
President / Laboratory Director



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

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

**Reported:**  
09/19/12 16:29

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PW-02	R209123-01	Soil	09/17/12 14:45	09/18/12 17:00
PW-01	R209123-02	Soil	09/18/12 11:05	09/18/12 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:**

09/19/12 16:29

Summit Scientific 2209123

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303-277-9310 • 303-374-5933 Fax

Page	of
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Client: LFE

Address: 4600 W. 60th Ave  
Project Manager: Brian Dodek

City/State/Zip: Alameda, CA 94603

Phone: (303) 433-9788 Fax:

Sampler Name: V. de la Torre

Sampler Name: Miguel Wuker  
Project Number: 0415/2002 (BNC) 3

[illegible]

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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:  
09/19/12 16:29

**PW-02**  
**R209123-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/17/12 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2091817	09/18/12	09/18/12	8015 Full Carbon Chain	

Date Sampled: **09/17/12 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		110 %	30-150		"	"	"	"	

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

Date Sampled: **09/17/12 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2091815	09/18/12	09/18/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/17/12 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.7 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.0 %	30-150		"	"	"	"	

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:  
09/19/12 16:29

**PW-01**  
**R209123-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/18/12 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	420	50	mg/kg	1	2091817	09/18/12	09/18/12	8015 Full Carbon Chain	

Date Sampled: **09/18/12 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		118 %	30-150		"	"	"	"	

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

Date Sampled: **09/18/12 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2091815	09/18/12	09/18/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/18/12 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		77.8 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		96.0 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.9 %	30-150		"	"	"	"	

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:**  
09/19/12 16:29

**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 2091817 - EPA 3550A**

**Blank (2091817-BLK1)**

Prepared & Analyzed: 09/18/12

C10-C28 (DRO) ND 50 mg/kg

**LCS (2091817-BS1)**

Prepared: 09/18/12 Analyzed: 09/19/12

C10-C28 (DRO) 410 50 mg/kg 501 81.7 73-134

**LCS Dup (2091817-BSD1)**

Prepared: 09/18/12 Analyzed: 09/19/12

C10-C28 (DRO) 435 50 mg/kg 501 86.7 73-134 5.93 11

**Matrix Spike (2091817-MS1)**

**Source: R209123-01**

Prepared: 09/18/12 Analyzed: 09/19/12

C10-C28 (DRO) 446 50 mg/kg 501 ND 89.1 50-148

**Matrix Spike Dup (2091817-MSD1)**

**Source: R209123-01**

Prepared: 09/18/12 Analyzed: 09/19/12

C10-C28 (DRO) 437 50 mg/kg 501 ND 87.2 50-148 2.15 13

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:  
09/19/12 16:29

**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 2091815 - EPA 5030 Soil MS**

**Blank (2091815-BLK1)**

Prepared: 09/18/12 Analyzed: 09/19/12

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	0.0358		"	0.0397	90.2	30-150
Surrogate: Toluene-d8	0.0393		"	0.0400	98.2	30-150
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400	94.3	30-150

**LCS (2091815-BS1)**

Prepared: 09/18/12 Analyzed: 09/19/12

Benzene	0.104	0.0050	mg/kg	0.100	104	58-130
Toluene	0.108	0.0050	"	0.100	108	61-134
Ethylbenzene	0.111	0.0050	"	0.100	111	74-139
m,p-Xylene	0.221	0.010	"	0.200	111	73-137
o-Xylene	0.109	0.0050	"	0.100	109	73-141
Surrogate: 1,2-Dichloroethane-d4	0.0360		"	0.0397	90.7	30-150
Surrogate: Toluene-d8	0.0402		"	0.0400	100	30-150
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400	96.5	30-150

**LCS Dup (2091815-BSD1)**

Prepared: 09/18/12 Analyzed: 09/19/12

Benzene	0.109	0.0050	mg/kg	0.100	109	58-130	5.21	13
Toluene	0.115	0.0050	"	0.100	115	61-134	7.05	16
Ethylbenzene	0.118	0.0050	"	0.100	118	74-139	6.92	12
m,p-Xylene	0.236	0.010	"	0.200	118	73-137	6.53	14
o-Xylene	0.119	0.0050	"	0.100	119	73-141	8.63	12
Surrogate: 1,2-Dichloroethane-d4	0.0363		"	0.0397	91.4	30-150		
Surrogate: Toluene-d8	0.0398		"	0.0400	99.4	30-150		
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400	93.8	30-150		

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:  
09/19/12 16:29

**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 2091815 - EPA 5030 Soil MS**

Matrix Spike (2091815-MS1)		Source: R209123-01			Prepared: 09/18/12		Analyzed: 09/19/12			
Benzene	0.0881	0.0050	mg/kg	0.100	ND	88.1	30-131			
Toluene	0.0920	0.0050	"	0.100	ND	92.0	30-134			
Ethylbenzene	0.0952	0.0050	"	0.100	ND	95.2	22-153			
m,p-Xylene	0.191	0.010	"	0.200	ND	95.4	10-159			
o-Xylene	0.0939	0.0050	"	0.100	ND	93.9	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0392		"	0.0397		98.8	30-150			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.7	30-150			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	30-150			
Matrix Spike Dup (2091815-MSD1)		Source: R209123-01			Prepared: 09/18/12		Analyzed: 09/19/12			
Benzene	0.0891	0.0050	mg/kg	0.100	ND	89.1	30-131	1.08	34	
Toluene	0.0931	0.0050	"	0.100	ND	93.1	30-134	1.10	30	
Ethylbenzene	0.0946	0.0050	"	0.100	ND	94.6	22-153	0.664	24	
m,p-Xylene	0.190	0.010	"	0.200	ND	95.0	10-159	0.362	68	
o-Xylene	0.0940	0.0050	"	0.100	ND	94.0	31-151	0.0958	38	
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0397		100	30-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	30-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	30-150			

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:**  
09/19/12 16:29

### 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

A handwritten signature in black ink, appearing to read 'Daniel A. [unclear]'.

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 01, 2012

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 09/25/12 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph J. Egry IV". The signature is fluid and cursive, with a distinct "IV" at the end.

Joseph J Egry IV For Ben Shrewsbury  
President / Laboratory Manager

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

Project: BNC - Cook 1-X

Project Number: 0415-12002

Project Manager: Brian Dodek

**Reported:**

10/01/12 11:00

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PW-01	R209190-01	Soil	09/25/12 09:10	09/25/12 17:00

Summit Scientific  
R209190

5

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

Page 1 of 1

Client: LFE

Address: 4600 W. 60<sup>th</sup> Ave

City/State/Zip: Arvada, CO 80003

Phone: (303) 433-9786 Fax:

Sampler Name: Michael Wicker

Project Manager: Brian Dadek

E-Mail: [Bdalek@LTEnv.com](mailto:Bdalek@LTEnv.com)Project Name: Cook

Project Number: 641512002

[illegible]

[www.s2scientific.com](http://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.*

Regd. Agent 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:  
10/01/12 11:00

**PW-01**  
**R209190-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/25/12 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (TEPH-DRO)</b>	<b>390</b>	50	mg/kg	1	2092710	09/27/12	09/28/12	8015 Full Carbon Chain	

Date Sampled: **09/25/12 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		68.1 %	30-150		"	"	"	"	

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

Date Sampled: **09/25/12 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Gasoline Range Hydrocarbons	ND	0.500	mg/kg	1	2092713	09/27/12	09/28/12	EPA 8260B	

Date Sampled: **09/25/12 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	30-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		95.8 %	30-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		94.0 %	30-150		"	"	"	"	

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:**  
10/01/12 11:00

**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 2092710 - EPA 3550A**

**Blank (2092710-BLK1)**

Prepared & Analyzed: 09/27/12

C10-C28 (TEPH-DRO) ND 50 mg/kg

**LCS (2092710-BS1)**

Prepared & Analyzed: 09/27/12

C10-C28 (TEPH-DRO) 530 50 mg/kg 501 106 73-134

**LCS Dup (2092710-BSD1)**

Prepared & Analyzed: 09/27/12

C10-C28 (TEPH-DRO) 539 50 mg/kg 501 108 73-134 1.58 11

**Matrix Spike (2092710-MS1)**

**Source: R209188-01**

Prepared & Analyzed: 09/27/12

C10-C28 (TEPH-DRO) 537 50 mg/kg 500 ND 107 50-148

**Matrix Spike Dup (2092710-MSD1)**

**Source: R209188-01**

Prepared & Analyzed: 09/27/12

C10-C28 (TEPH-DRO) 535 50 mg/kg 498 ND 107 50-148 0.331 13

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:  
10/01/12 11:00

**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 2092713 - EPA 5030 Soil MS**

**Blank (2092713-BLK1)**

Prepared & Analyzed: 09/27/12

Gasoline Range Hydrocarbons	ND	0.500	mg/kg							
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0397	90.3	30-150				
Surrogate: Toluene-d8	0.0391		"	0.0400	97.8	30-150				
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400	93.6	30-150				

**LCS (2092713-BS1)**

Prepared & Analyzed: 09/27/12

Gasoline Range Hydrocarbons	1.96	0.500	mg/kg			30-150				
Surrogate: 1,2-Dichloroethane-d4	0.0352		"	0.0397	88.8	30-150				
Surrogate: Toluene-d8	0.0388		"	0.0400	97.0	30-150				
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0400	95.2	30-150				

**LCS Dup (2092713-BSD1)**

Prepared & Analyzed: 09/27/12

Gasoline Range Hydrocarbons	1.94	0.500	mg/kg			30-150	1.04	20		
Surrogate: 1,2-Dichloroethane-d4	0.0355		"	0.0397	89.5	30-150				
Surrogate: Toluene-d8	0.0392		"	0.0400	98.0	30-150				
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400	92.6	30-150				

**Matrix Spike (2092713-MS1)**

Source: R209201-01

Prepared & Analyzed: 09/27/12

Gasoline Range Hydrocarbons	1.85	0.500	mg/kg		ND	0-0				
Surrogate: 1,2-Dichloroethane-d4	0.0371		"	0.0394	94.2	30-150				
Surrogate: Toluene-d8	0.0390		"	0.0397	98.3	30-150				
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0397	95.6	30-150				

**Matrix Spike Dup (2092713-MSD1)**

Source: R209201-01

Prepared & Analyzed: 09/27/12

Gasoline Range Hydrocarbons	1.80	0.500	mg/kg		ND	0-0	2.59	0		
Surrogate: 1,2-Dichloroethane-d4	0.0372		"	0.0395	94.1	30-150				
Surrogate: Toluene-d8	0.0388		"	0.0398	97.5	30-150				
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0398	94.6	30-150				

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:**  
10/01/12 11:00

### 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

A handwritten signature in black ink, appearing to read 'Daniel A. [unclear]'.

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 09, 2012

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 10/04/12 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph J. Egry IV".

Joseph J Egry IV For Ben Shrewsbury  
President / Laboratory Manager



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

Project: BNC - Cook 1-X

Project Number: 0415-12002  
Project Manager: Brian Dodek

**Reported:**  
10/09/12 10:27

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PW02SP-01	R210042-01	Soil	10/03/12 09:30	10/04/12 17:00
PW02SP-02	R210042-02	Soil	10/03/12 09:40	10/04/12 17:00
PW02SP-03	R210042-03	Soil	10/03/12 09:50	10/04/12 17:00
PW03SP-01	R210042-04	Soil	10/03/12 10:00	10/04/12 17:00
PW03SP-02	R210042-05	Soil	10/03/12 10:10	10/04/12 17:00
PW03SP-03	R210042-06	Soil	10/03/12 10:20	10/04/12 17:00
PW03SP-04	R210042-07	Soil	10/03/12 10:30	10/04/12 17:00
OS01SP-01	R210042-08	Soil	10/03/12 10:40	10/04/12 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:  
10/09/12 10:27

**Summit Scientific**  
S<sub>2</sub> 8210042

741 Corporate Circle Suite 1 • Golden, Colorado 80401  
303-277-9310 • 303-374-9333 Fax

Client: LTE Project Manager: Brian Dodek  
Address: 4600 W. 60th Ave E-Mail: BDodek@LTEnv.com  
City/State/Zip: Arvada, CO 80003 Project Name: Cook 1-X  
Phone: (303) 453-9788 Fax: Project Number: 041512002  
Sampler Name: M. Walker

Page 1 of 1

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:	Special Instructions	
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)			
P007SP-01	10/03/12	0930	6			X								
P007SP-02	10/03/12	0940	6			X								
P007SP-03	10/03/12	0950	6			X								
P007SP-04	10/03/12	1000	6			X								
P007SP-05	10/03/12	1010	6			X								
P007SP-06	10/03/12	1020	6			X								
P007SP-07	10/03/12	1030	6			X								
P007SP-08	10/03/12	1040	6			X								
P007SP-09	10/03/12	1050	6			X								
P007SP-10	10/03/12	1100	6			X								
P007SP-11	10/03/12	1110	6			X								
P007SP-12	10/03/12	1120	6			X								
P007SP-13	10/03/12	1130	6			X								
P007SP-14	10/03/12	1140	6			X								
P007SP-15	10/03/12	1150	6			X								
P007SP-16	10/03/12	1200	6			X								
P007SP-17	10/03/12	1210	6			X								
P007SP-18	10/03/12	1220	6			X								
P007SP-19	10/03/12	1230	6			X								
P007SP-20	10/03/12	1240	6			X								
P007SP-21	10/03/12	1250	6			X								
P007SP-22	10/03/12	1300	6			X								
P007SP-23	10/03/12	1310	6			X								
P007SP-24	10/03/12	1320	6			X								
P007SP-25	10/03/12	1330	6			X								
P007SP-26	10/03/12	1340	6			X								
P007SP-27	10/03/12	1350	6			X								
P007SP-28	10/03/12	1400	6			X								
P007SP-29	10/03/12	1410	6			X								
P007SP-30	10/03/12	1420	6			X								
P007SP-31	10/03/12	1430	6			X								
P007SP-32	10/03/12	1440	6			X								
P007SP-33	10/03/12	1450	6			X								
P007SP-34	10/03/12	1500	6			X								
P007SP-35	10/03/12	1510	6			X								
P007SP-36	10/03/12	1520	6			X								
P007SP-37	10/03/12	1530	6			X								
P007SP-38	10/03/12	1540	6			X								
P007SP-39	10/03/12	1550	6			X								
P007SP-40	10/03/12	1600	6			X								
P007SP-41	10/03/12	1610	6			X								
P007SP-42	10/03/12	1620	6			X								
P007SP-43	10/03/12	1630	6			X								
P007SP-44	10/03/12	1640	6			X								
P007SP-45	10/03/12	1650	6			X								
P007SP-46	10/03/12	1700	6			X								
P007SP-47	10/03/12	1710	6			X								
P007SP-48	10/03/12	1720	6			X								
P007SP-49	10/03/12	1730	6			X								
P007SP-50	10/03/12	1740	6			X								
P007SP-51	10/03/12	1750	6			X								
P007SP-52	10/03/12	1800	6			X								
P007SP-53	10/03/12	1810	6			X								
P007SP-54	10/03/12	1820	6			X								
P007SP-55	10/03/12	1830	6			X								
P007SP-56	10/03/12	1840	6			X								
P007SP-57	10/03/12	1850	6			X								
P007SP-58	10/03/12	1900	6			X								
P007SP-59	10/03/12	1910	6			X								
P007SP-60	10/03/12	1920	6			X								
P007SP-61	10/03/12	1930	6			X								
P007SP-62	10/03/12	1940	6			X								
P007SP-63	10/03/12	1950	6			X								
P007SP-64	10/03/12	2000	6			X								
P007SP-65	10/03/12	2010	6			X								
P007SP-66	10/03/12	2020	6			X								
P007SP-67	10/03/12	2030	6			X								
P007SP-68	10/03/12	2040	6			X								
P007SP-69	10/03/12	2050	6			X								
P007SP-70	10/03/12	2100	6			X								
P007SP-71	10/03/12	2110	6			X								
P007SP-72	10/03/12	2120	6			X								
P007SP-73	10/03/12	2130	6			X								
P007SP-74	10/03/12	2140	6			X								
P007SP-75	10/03/12	2150	6			X								
P007SP-76	10/03/12	2200	6			X								
P007SP-77	10/03/12	2210	6			X								
P007SP-78	10/03/12	2220	6			X								
P007SP-79	10/03/12	2230	6			X								
P007SP-80	10/03/12	2240	6			X								
P007SP-81	10/03/12	2250	6			X								
P007SP-82	10/03/12	2300	6			X								
P007SP-83	10/03/12	2310	6			X								
P007SP-84	10/03/12	2320	6			X								
P007SP-85	10/03/12	2330	6			X								
P007SP-86	10/03/12	2340	6			X								
P007SP-87	10/03/12	2350	6			X								
P007SP-88	10/03/12	2400	6			X								
P007SP-89	10/03/12	2410	6			X								
P007SP-90	10/03/12	2420	6			X								
P007SP-91	10/03/12	2430	6			X								
P007SP-92	10/03/12	2440	6			X								
P007SP-93	10/03/12	2450	6			X								
P007SP-94	10/03/12	2500	6			X								
P007SP-95	10/03/12	2510	6			X								
P007SP-96	10/03/12	2520	6			X								
P007SP-97	10/03/12	2530	6			X								
P007SP-98	10/03/12	2540	6			X								
P007SP-99	10/03/12	2550	6			X								
P007SP-100	10/03/12	2600	6			X								

Notes:

Turn Around Time (Check)

Date/Time:

Received by:

Date/Time:

Relinquished by:

Date/Time:

Received by:

Date/Time:

Relinquished by:

Date/Time:

Received in Lab by:

Date/Time:

Relinquished by:

Date/Time:

Sample Integrity:

Temperature Upon Receipt:

Impact: Yes No

Signature: [Signature]

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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:**  
10/09/12 10:27

**PW02SP-01**  
**R210042-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/03/12 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>3900</b>	50	mg/kg	1	2100604	10/06/12	10/06/12	8015 Full Carbon Chain	

Date Sampled: **10/03/12 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		88.3 %	30-150		"	"	"	"	

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

Date Sampled: **10/03/12 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2100603	10/06/12	10/07/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>580</b>	5.0	"	10	"	"	"	"	

Date Sampled: **10/03/12 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		86.8 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		611 %	30-150		"	"	"	"	S-02

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:  
10/09/12 10:27

**PW02SP-02**  
**R210042-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/03/12 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	410	50	mg/kg	1	2100604	10/06/12	10/08/12	8015 Full Carbon Chain	

Date Sampled: 10/03/12 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		73.9 %	30-150		"	"	"	"	

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

Date Sampled: 10/03/12 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2100603	10/06/12	10/07/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	140	5.0	"	10	"	"	"	"	

Date Sampled: 10/03/12 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.8 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		91.5 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		303 %	30-150		"	"	"	"	S-02

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

Date Sampled: 10/03/12 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.04	0.00100	mmhos/cm	1	2100803	10/08/12	10/08/12	SM 2510B	

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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:  
10/09/12 10:27

**PW02SP-02**  
**R210042-02 (Soil)**

**Summit Scientific**

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

Date Sampled: 10/03/12 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.1		pH Units	1	2100804	10/08/12	10/08/12	EPA 9045B	

**Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis**

Date Sampled: 10/03/12 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	931	2.50	mg/kg	1	2100505	10/06/12	10/06/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	141	1.00	"	"	"	"	"	"	
Sodium	1330	5.00	"	"	"	"	"	"	

Date Sampled: 10/03/12 09:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.7		units	"	2100701	10/07/12	10/07/12	"	

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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:  
10/09/12 10:27

**PW02SP-03**  
**R210042-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/03/12 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	2500	50	mg/kg	1	2100604	10/06/12	10/06/12	8015 Full Carbon Chain	

Date Sampled: 10/03/12 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.8 %	30-150		"	"	"	"	

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

Date Sampled: 10/03/12 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2100603	10/06/12	10/07/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	150	5.0	"	10	"	"	"	"	

Date Sampled: 10/03/12 09:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		86.2 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		386 %	30-150		"	"	"	"	S-02

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:  
10/09/12 10:27

**PW03SP-01**  
**R210042-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/03/12 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	560	50	mg/kg	1	2100604	10/06/12	10/08/12	8015 Full Carbon Chain	

Date Sampled: 10/03/12 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		75.6 %	30-150		"	"	"	"	

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

Date Sampled: 10/03/12 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2100603	10/06/12	10/07/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	45	0.50	"	"	"	"	"	"	

Date Sampled: 10/03/12 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.2 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		86.0 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		190 %	30-150		"	"	"	"	S-02

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

Date Sampled: 10/03/12 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.48	0.00100	mmhos/cm	1	2100803	10/08/12	10/08/12	SM 2510B	

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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:**  
10/09/12 10:27

**PW03SP-01**  
**R210042-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/12 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.8</b>		pH Units	1	2100804	10/08/12	10/08/12	EPA 9045B	

**Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis**

Date Sampled: **10/03/12 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>986</b>	2.50	mg/kg	1	2100505	10/06/12	10/06/12	EPA 6020/Mod. USDA60 6(2, 3A)	
<b>Magnesium</b>	<b>704</b>	1.00	"	"	"	"	"	"	
<b>Sodium</b>	<b>650</b>	5.00	"	"	"	"	"	"	

Date Sampled: **10/03/12 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>3.86</b>		units	"	2100701	10/07/12	10/07/12	"	

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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:  
10/09/12 10:27

**PW03SP-02**  
**R210042-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/03/12 10:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1000	50	mg/kg	1	2100604	10/06/12	10/08/12	8015 Full Carbon Chain	

Date Sampled: 10/03/12 10:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.1 %	30-150		"	"	"	"	

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

Date Sampled: 10/03/12 10:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2100603	10/06/12	10/07/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	25	0.50	"	"	"	"	"	"	

Date Sampled: 10/03/12 10:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.8 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		89.3 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		72.2 %	30-150		"	"	"	"	

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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:**  
10/09/12 10:27

**PW03SP-03**  
**R210042-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/03/12 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>4700</b>	50	mg/kg	1	2100604	10/06/12	10/07/12	8015 Full Carbon Chain	

Date Sampled: **10/03/12 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		93.9 %	30-150		"	"	"	"	

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

Date Sampled: **10/03/12 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2100603	10/06/12	10/07/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>170</b>	5.0	"	10	"	"	"	"	

Date Sampled: **10/03/12 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.9 %	30-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		91.2 %	30-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		276 %	30-150		"	"	"	"	S-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:  
10/09/12 10:27

**PW03SP-04**  
**R210042-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/03/12 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	3300	50	mg/kg	1	2100604	10/06/12	10/07/12	8015 Full Carbon Chain	

Date Sampled: 10/03/12 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.7 %	30-150		"	"	"	"	

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

Date Sampled: 10/03/12 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2100603	10/06/12	10/07/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	130	5.0	"	10	"	"	"	"	

Date Sampled: 10/03/12 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.0 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		86.0 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		120 %	30-150		"	"	"	"	

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:  
10/09/12 10:27

**OS01SP-01**  
**R210042-08 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 10/03/12 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1600	50	mg/kg	1	2100604	10/06/12	10/07/12	8015 Full Carbon Chain	

Date Sampled: 10/03/12 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		84.4 %	30-150		"	"	"	"	

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

Date Sampled: 10/03/12 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2100603	10/06/12	10/07/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	12	0.50	"	"	"	"	"	"	

Date Sampled: 10/03/12 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		94.7 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		41.8 %	30-150		"	"	"	"	

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

Date Sampled: 10/03/12 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.43	0.00100	mmhos/cm	1	2100803	10/08/12	10/08/12	SM 2510B	

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:  
10/09/12 10:27

**OS01SP-01**  
**R210042-08 (Soil)**

**Summit Scientific**

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

Date Sampled: 10/03/12 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.8		pH Units	1	2100804	10/08/12	10/08/12	EPA 9045B	

**Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis**

Date Sampled: 10/03/12 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	765	2.50	mg/kg	1	2100505	10/06/12	10/06/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	155	1.00	"	"	"	"	"	"	
Sodium	899	5.00	"	"	"	"	"	"	

Date Sampled: 10/03/12 10:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.75		units	"	2100701	10/07/12	10/07/12	"	

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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:  
10/09/12 10:27

**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 2100604 - EPA 3550A**

**Blank (2100604-BLK1)**

Prepared & Analyzed: 10/06/12

C10-C28 (DRO) ND 50 mg/kg

**LCS (2100604-BS1)**

Prepared & Analyzed: 10/06/12

C10-C28 (DRO) 631 50 mg/kg 501 126 73-134

**LCS Dup (2100604-BSD1)**

Prepared & Analyzed: 10/06/12

C10-C28 (DRO) 616 50 mg/kg 501 123 73-134 2.42 11

**Matrix Spike (2100604-MS1)**

Source: R210045-02

Prepared & Analyzed: 10/06/12

C10-C28 (DRO) 605 50 mg/kg 499 15.0 118 50-148

**Matrix Spike Dup (2100604-MSD1)**

Source: R210045-02

Prepared & Analyzed: 10/06/12

C10-C28 (DRO) 631 50 mg/kg 498 15.0 124 50-148 4.25 13

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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:  
10/09/12 10:27

**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 2100603 - EPA 5030 Soil MS**

**Blank (2100603-BLK1)**

Prepared & Analyzed: 10/06/12

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	0.0344		"	0.0397	86.7	30-150				
Surrogate: Toluene-d8	0.0382		"	0.0400	95.6	30-150				
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400	93.0	30-150				

**LCS (2100603-BS1)**

Prepared & Analyzed: 10/06/12

Benzene	0.106	0.0050	mg/kg	0.100	106	58-130				
Toluene	0.115	0.0050	"	0.100	115	61-134				
Ethylbenzene	0.122	0.0050	"	0.100	122	74-139				
m,p-Xylene	0.251	0.010	"	0.200	125	73-137				
o-Xylene	0.119	0.0050	"	0.100	119	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0269		"	0.0397	67.7	30-150				
Surrogate: Toluene-d8	0.0389		"	0.0400	97.2	30-150				
Surrogate: 4-Bromofluorobenzene	0.0357		"	0.0400	89.2	30-150				

**LCS Dup (2100603-BSD1)**

Prepared & Analyzed: 10/06/12

Benzene	0.101	0.0050	mg/kg	0.100	101	58-130	5.37	13		
Toluene	0.108	0.0050	"	0.100	108	61-134	6.20	16		
Ethylbenzene	0.113	0.0050	"	0.100	113	74-139	7.85	12		
m,p-Xylene	0.232	0.010	"	0.200	116	73-137	8.01	14		
o-Xylene	0.113	0.0050	"	0.100	113	73-141	5.04	12		
Surrogate: 1,2-Dichloroethane-d4	0.0349		"	0.0397	87.8	30-150				
Surrogate: Toluene-d8	0.0388		"	0.0400	97.1	30-150				
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400	94.0	30-150				

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Arvada CO, 80003

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

Reported:  
10/09/12 10:27

**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 2100603 - EPA 5030 Soil MS**

Matrix Spike (2100603-MS1)		Source: R210043-01			Prepared & Analyzed: 10/06/12					
Benzene	0.101	0.0050	mg/kg	0.0996	ND	101	30-131			
Toluene	0.109	0.0050	"	0.0996	ND	109	30-134			
Ethylbenzene	0.112	0.0050	"	0.0996	ND	113	22-153			
m,p-Xylene	0.229	0.010	"	0.199	ND	115	10-159			
o-Xylene	0.112	0.0050	"	0.0996	ND	113	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0373		"	0.0395		94.3	30-150			
Surrogate: Toluene-d8	0.0380		"	0.0398		95.4	30-150			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0398		95.5	30-150			
Matrix Spike Dup (2100603-MSD1)		Source: R210043-01			Prepared & Analyzed: 10/06/12					
Benzene	0.0931	0.0050	mg/kg	0.0969	ND	96.1	30-131	8.12	34	
Toluene	0.101	0.0050	"	0.0969	ND	104	30-134	7.22	30	
Ethylbenzene	0.103	0.0050	"	0.0969	ND	106	22-153	8.53	24	
m,p-Xylene	0.210	0.010	"	0.194	ND	108	10-159	8.84	68	
o-Xylene	0.103	0.0050	"	0.0969	ND	107	31-151	8.27	38	
Surrogate: 1,2-Dichloroethane-d4	0.0366		"	0.0385		95.2	30-150			
Surrogate: Toluene-d8	0.0377		"	0.0388		97.4	30-150			
Surrogate: 4-Bromofluorobenzene	0.0359		"	0.0388		92.6	30-150			

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Project: BNC - Cook 1-X

Project Number: 0415-12002  
Project Manager: Brian Dodek

**Reported:**  
10/09/12 10:27

**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 2100803 - General Preparation**

<b>Duplicate (2100803-DUP1)</b>	<b>Source: R210041-01</b>			Prepared & Analyzed: 10/08/12							
Specific Conductance (EC)	0.628	0.00100	mmhos/cm		0.605			3.65		15.5	

**Batch 2100804 - General Preparation**

<b>Duplicate (2100804-DUP1)</b>	<b>Source: R210041-01</b>			Prepared & Analyzed: 10/08/12							
pH	8.7		pH Units		8.7			0.459		4.95	

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4600 West 60th Avenue  
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Project: BNC - Cook 1-X  
Project Number: 0415-12002  
Project Manager: Brian Dodek

Reported:  
10/09/12 10:27

**Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis - Quality Control**  
**Summit Scientific**

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

**Batch 2100505 - General Preparation**

**Blank (2100505-BLK1)**

Prepared & Analyzed: 10/06/12

Calcium	ND	2.50	mg/kg
Magnesium	ND	1.00	"
Sodium	ND	5.00	"

**LCS (2100505-BS1)**

Prepared & Analyzed: 10/06/12

Calcium	382	2.50	mg/kg	400	95.5	77-118
Magnesium	194	1.00	"	200	97.2	77-117
Sodium	650	5.00	"	700	92.8	80-119

**LCS Dup (2100505-BSD1)**

Prepared & Analyzed: 10/06/12

Calcium	381	2.50	mg/kg	400	95.3	77-118	0.269	14
Magnesium	193	1.00	"	200	96.7	77-117	0.498	12
Sodium	648	5.00	"	700	92.6	80-119	0.243	14

**Matrix Spike (2100505-MS1)**

Source: R210030-01

Prepared & Analyzed: 10/06/12

Calcium	1170	2.50	mg/kg	253	763	160	13-170
Magnesium	379	1.00	"	126	250	102	34-152
Sodium	400	5.00	"	442	35.8	82.4	43-155

**Matrix Spike Dup (2100505-MSD1)**

Source: R210030-01

Prepared & Analyzed: 10/06/12

Calcium	1410	2.50	mg/kg	282	763	229	13-170	18.8	37	QM-07
Magnesium	451	1.00	"	141	250	142	34-152	17.3	33	
Sodium	469	5.00	"	494	35.8	87.7	43-155	15.8	25	

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

**Reported:**  
10/09/12 10:27

### Notes and Definitions

S-02      The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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.

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