

State of Colorado
Oil and Gas Conservation Commission

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



FOR OGCC USE ONLY

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:

<input type="checkbox"/> Spill	<input type="checkbox"/> Complaint
<input type="checkbox"/> Inspection	<input type="checkbox"/> NOAV

Tracking No:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

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

GENERAL INFORMATION

OGCC Operator Number: 10083		Contact Name and Telephone	
Name of Operator: East Resources, Inc.		Name: Andrew Richmond	
Address: 370 Interlocken Blvd., Suite 550		No: 303-865-5957, ext 209	
City: Broomfield State: CO Zip: 80021		Fax: 303-865-5961	
API/Facility No: 05-081-06935		County: Moffat	
Facility Name:		Facility Number:	
Well Name: WT Durham		Well Number: #4	
Location (QtrQtr, Sec, Twp, Rng, Meridian) SESE, Sec 31, T5N, R90W, 6PM		Latitude: 40.33485 Longitude: -107.52937	

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)? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, attach evaluation. Groundwater < 20 feet bgs.		
Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): cultivated land (hay field)		
Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Fluvaquents and Haplaquolls soils, frequent flooding, loamy soils.		
Potential receptors (water wells within 1/4 mi, surface waters, etc.): Surface water (Tributary to Waddle Creek) located 550' East; Residence located 705' west; Water well located 3,400' North; Depth to groundwater between 2 ft and 4 ft bgs		
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	See attached site map	Field screening and laboratory analysis of soil samples
<input checked="" type="checkbox"/> Vegetation	See attached site map	Visual inspection
<input checked="" type="checkbox"/> Groundwater	See data	Laboratory analysis of groundwater samples
<input type="checkbox"/> Surface water		

REMEDATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document): Form 19 submitted 4/27/10. (Spill # 1949068). Form 27 submitted on 4/29/10.
Describe how source is to be removed: An HDPE pipe ruptured due to a paraffin plug in the flowline from the WT Durham #4 well head. Once the flowline was shut in, impacted soil above the COGCC allowable levels was excavated. Soil samples were collected from the sidewalls of the excavation and from impacted areas where surface soil had been scraped. Based on process knowledge and a source area soil sample collected prior to excavation, the COGCC approved a reduced list of analytes via email from Chris Canfield on 5/13/10. Each of the samples were submitted for analysis of BTEX by EPA Method 8260B and TPH (C6-C36) by EPA modified Method 8015. Laboratory results indicate BTEX and TPH concentrations along the excavation perimeter were in compliance with COGCC Table 910-1 concentration levels. Groundwater samples were collected from the open excavation on 5/11/10 (GW01) and 5/18/10 (GW02) and were submitted for analysis of BTEX by EPA Method 8260B. Laboratory results for GW01 indicate benzene and toluene concentrations exceeded the CDPHE Water Quality Control Commission Regulation 41 (Reg. 41) standards. Before collecting GW02, impacted groundwater was removed from the excavation by a vacuum truck and was transported to a disposal facility. Laboratory results for GW02 indicate the benzene concentration still exceeded the Reg. 41 standard. Activated carbon was applied to the groundwater and exposed smear zone soils before backfilling the excavation. A topographic site location map and site map are provided as Figures 1 and 2. Soil and groundwater analytical results are summarized in Tables 1 and 2.
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.: A total of 2,184 cubic yards of impacted soil above the COGCC allowable levels was excavated and transported to the Twin Enviro Services landfill in Milner, CO for disposal.

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Page 2

REMEDIAL WORKPLAN (CONT.)

OGCC Employee: _____

Tracking Number: _____
Name of Operator: East Resources, Inc.
OGCC Operator No: 10083
Received Date: _____
Well Name & No: WT Durham #4
Facility Name & No.: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

During initial assessment activities, a surface water sample was collected from a tributary to Waddle Creek and submitted for laboratory analysis of BTEX. Analytical results indicate BTEX concentrations in the surface water sample were in compliance with Reg. 41 standards and the CDPHE-WQCC Regulation 31 standards (The Basic Standards and Methodologies for Surface Water). Surface water analytical results are summarized in Table 3.

Monitoring wells MW01 through MW04 were installed on 5/3/10 and 5/4/10, downgradient of the release. Each of the monitoring wells was purged and developed following installation. Groundwater samples were collected from the wells and submitted for laboratory analysis of BTEX. Analytical results indicated BTEX concentrations in groundwater samples collected from all of the monitoring wells were in compliance with Reg. 41 standards. Three additional monitoring wells (MW05 through MW07) will be installed to further define the extent of groundwater impacts. The locations of the additional proposed wells are provided on the attached Figure 2 site map.

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 ground surface was contoured to match the existing grade. The excavation was backfilled with clean topsoil such that the area can be revegetated. The planned seed mix is based on the landowner's request and includes a mixture of equal portions of garrison, timothy, and brohme. Straw will be crimped into the ground following seeding to reduce surface erosion while revegetation takes hold.

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 indicate the benzene concentration in the most recent groundwater sample (GW02) collected from the excavation exceeded the Reg. 41 standard. Four downgradient monitoring wells were installed at the site and analytical results indicated groundwater impacts have not migrated to the tributary to Waddle Creek. Once the additional three proposed wells have been installed, each of the seven monitoring wells will be sampled on a quarterly basis until four consecutive quarters of BTEX concentrations in groundwater are in compliance with Reg. 41 standards.

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

A total of 2,184 cubic yards of impacted soil above the COGCC allowable levels was excavated and transported to the Twin Enviro Services landfill in Milner, CO for disposal.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: <u>4/18/10</u>	Date Site Investigation Completed: <u>5/19/10</u>	Remediation Plan Submitted: <u>6/16/10</u>
Remediation Start Date: <u>4/29/10</u>	Anticipated Completion Date: <u>5/19/11</u>	Actual Completion Date: _____

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

Print Name: Andrew Richmond

Signed: Andrew Richmond Title: Production Manager Date: 6/16/10

OGCC Approved: _____ Title: _____ Date: _____

TABLE 1
SOIL ANALYTICAL DATA
WT DURHAM #4
MOFFAT COUNTY, COLORADO
EAST RESOURCES, INC.

Soil Sample ID	Date	Depth (ft bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVH-GRO (mg/kg)	TVH-DRO (mg/kg)	TVH-ORO (mg/kg)	TPH (mg/kg)
S01-2'	5/4/2010	2	<0.005	<0.005	<0.005	0.0095	<20	<20	<20	<20
S02-2'	5/4/2010	2	0.4	0.45	0.0087	0.09	<20	<20	<20	<20
S03-2'	5/4/2010	2	<0.005	<0.005	<0.005	<0.005	<20	<20	<20	<20
S04-2'	5/5/2010	2	<0.005	<0.005	<0.005	<0.005	<20	<20	<20	<20
S05-2'	5/5/2010	2	0.21	0.21	<0.005	0.024	<20	<20	<20	<20
S06-2'	5/5/2010	2	<0.005	0.0053	<0.005	0.0095	<20	<20	<20	<20
S07-2'	5/5/2010	2	<0.005	<0.005	<0.005	<0.005	<20	<20	<20	<20
S08-2'	5/5/2010	2	<0.005	<0.005	<0.005	<0.005	<20	<20	<20	<20
S09-2'	5/5/2010	2	0.0059	0.066	0.0084	0.096	<20	<20	<20	<20
S010-2'	5/5/2010	2	<0.005	<0.005	<0.005	<0.005	<20	<20	<20	<20
S011-2'	5/5/2010	2	<0.005	<0.005	<0.005	<0.005	<20	<20	<20	<20
S012-2'	5/5/2010	2	<0.005	<0.005	<0.005	<0.005	<20	<20	<20	<20
S13-0.5'	5/11/2010	0.5	0.048	0.481	0.0646	0.865	<50	<50	<200	<50
S14-0.5'	5/11/2010	0.5	<0.004	<0.004	<0.004	<0.004	<50	<50	<200	<50
S15-0.5'	5/11/2010	0.5	<0.004	<0.004	<0.004	0.0103	<50	<50	<200	<50
S16-0.5'	5/11/2010	0.5	<0.004	<0.004	<0.004	<0.004	<50	<50	<200	<50
S17-0.5'	5/11/2010	0.5	<0.004	<0.004	<0.004	<0.004	<50	<50	<200	<50
S18-0.5'	5/11/2010	0.5	<0.004	<0.004	<0.004	<0.004	<50	<50	<200	<50
COGCC Allowable Level			0.17	85	100	175	--	--	--	500

NOTES:

mg/kg - milligrams per kilogram

ft bgs - feet below ground surface

TVH-GRO - Total volatile hydrocarbons - gasoline range organics analyzed by EPA Modified Method 8015

TVH-DRO - Total volatile hydrocarbons - diesel range organics analyzed by EPA Modified Method 8015

TVH-ORO - Total volatile hydrocarbons - oil range organics analyzed by EPA Modified Method 8015

TPH - Total Petroleum Hydrocarbons GRO/DRO/ORO

< - indicates result is less than the stated laboratory method reporting limit

BOLD - indicates result is above the applicable standard

COGCC - Colorado Oil and Gas Conservation Commission

Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8260B

COGCC Allowable Level taken from 2 CCR 404-1, Table 910-1, effective April 2009



TABLE 2
GROUNDWATER ANALYTICAL DATA
WT DURHAM #4
MOFFAT COUNTY, COLORADO
EAST RESOURCES, INC.

Well ID	Date	Depth to Water (ft btoc)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
MW01	5/4/2010	3.52	3.1	<2	<2	<2
MW02	5/4/2010	2.86	<2	<2	<2	<2
MW03	5/4/2010	3.30	<2	2	<2	3.3
MW04	5/4/2010	2.69	<2	2.4	<2	<2
GW01	5/11/2010	-	1,370	1,730	72.3	752
GW02	5/18/2010	-	332	319	12.8	258
CDPHE WQCC Reg 41			5	560	700	1,400

NOTES:

ft btoc - feet below top of casing

ug/L - micrograms per liter

< - indicates result is less than the stated laboratory method reporting limit

BOLD - indicates result is above the applicable standard

Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8260B

CDPHE WQCC Reg 41 - Colorado Department of Public Health and Environmental - Water Quality
Control Commission Regulation 41 covering Basic Standards for Groundwater



TABLE 3
SURFACE WATER ANALYTICAL DATA
WT DURHAM #4
MOFFAT COUNTY, COLORADO
EAST RESOURCES, INC.

Well ID	Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
SW01	5/4/2010	<2*	3.6	<2	7.5
Human Health Based	Water Supply	1	1,000	680	10,000
	Water + Fish	1	1,000	680	-
Aquatic Life Based	Acute	5,300	17,500	32,000	-
	Chronic	-	-	-	-

NOTES:

ug/L - micrograms per liter

< - indicates result is less than the stated laboratory method reporting limit

Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8260B

Human health and aquatic based standards taken from CDPHE WQCC Reg 31- Colorado

Department of Public Health and Environmental - Water Quality Control Commission

Regulation 31 The Basic Standards and Methodologies for Surface Water

* Lowest detection level for instrument used to analyze sample



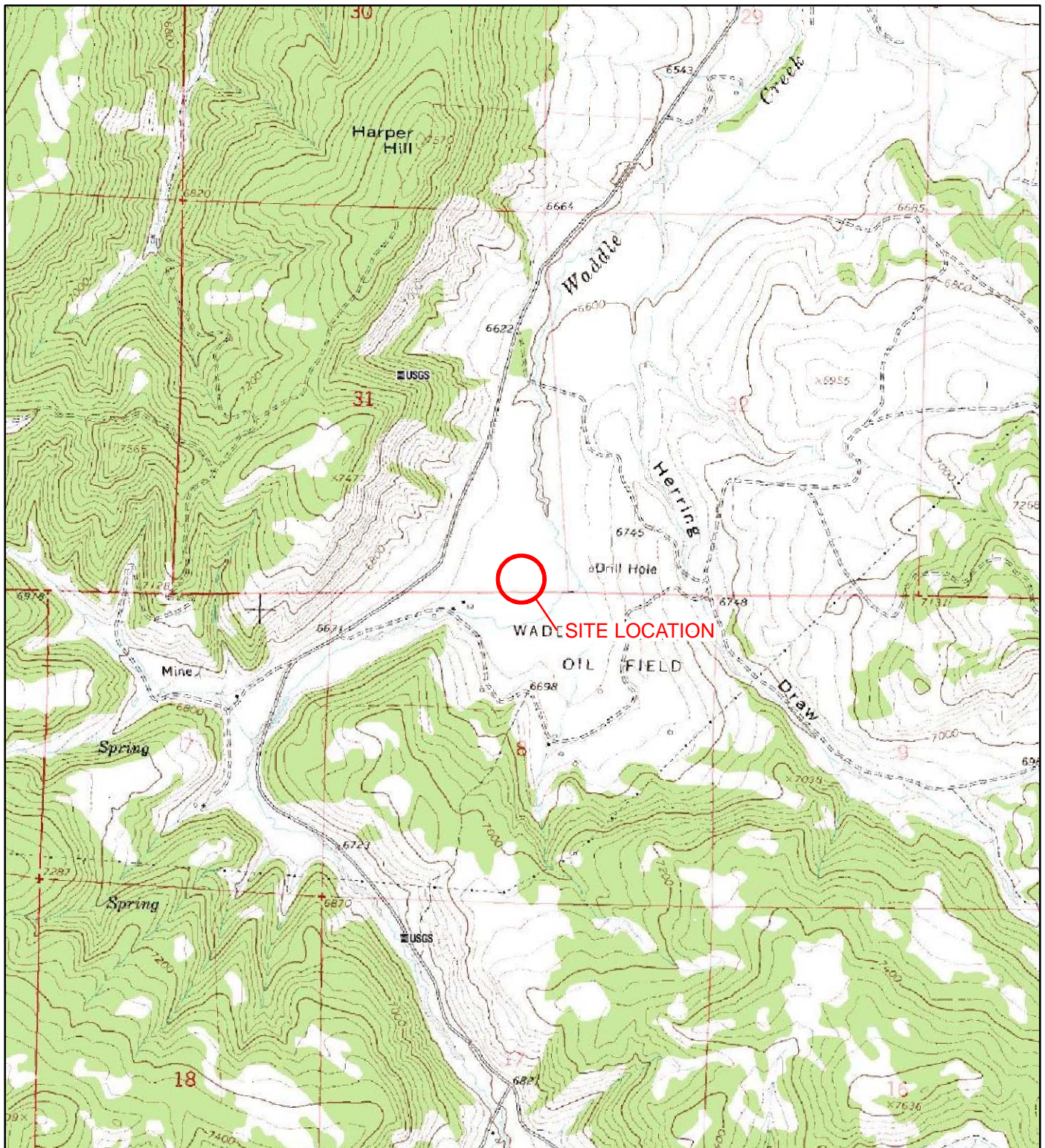


IMAGE COURTESY OF WWW.TERRASERVER.COM/USGS, 1966

LEGEND

○ SITE LOCATION

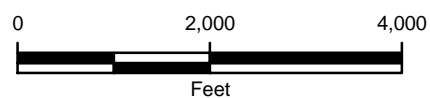
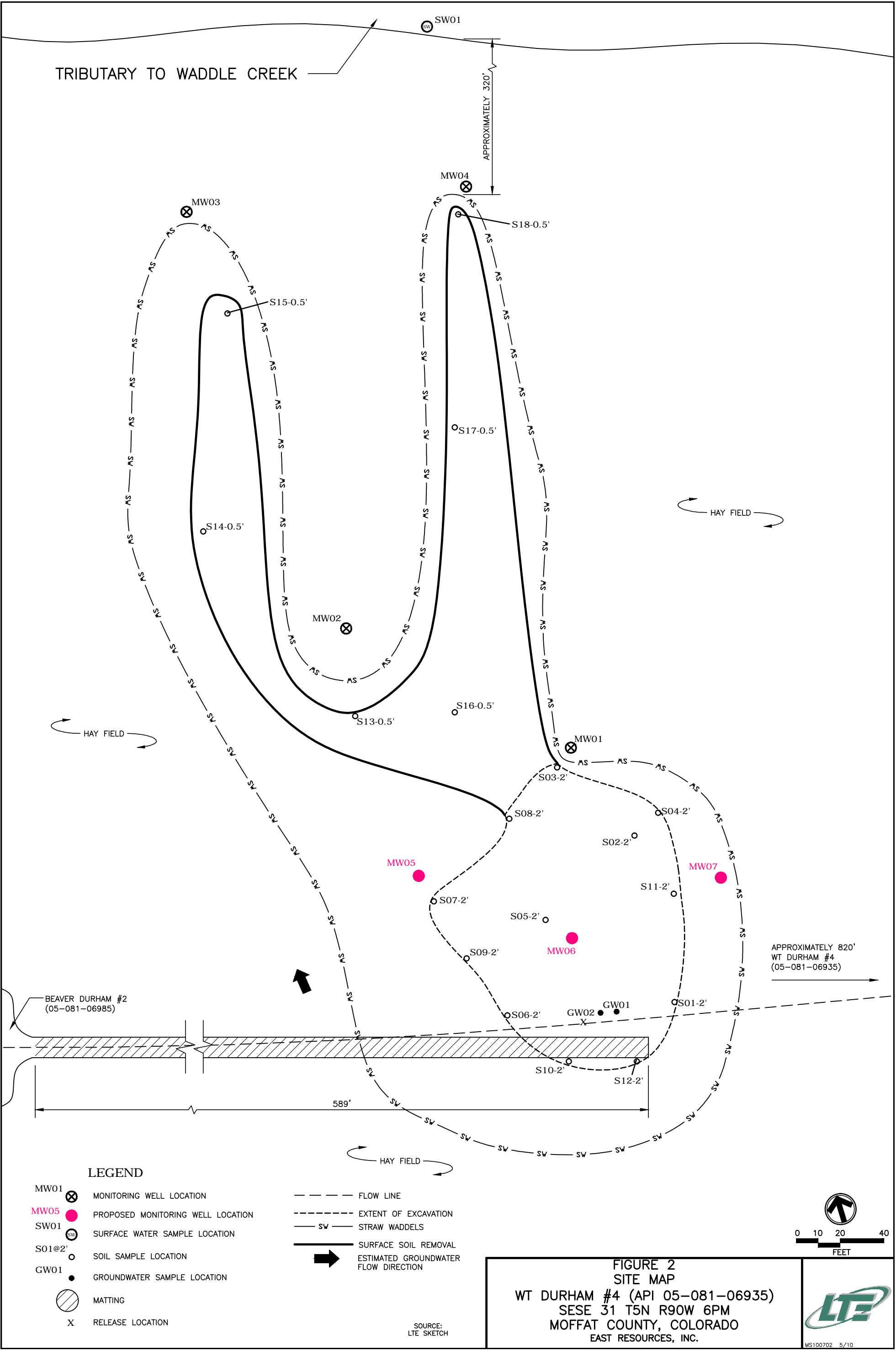


FIGURE 1
SITE LOCATION MAP
WT DURHAM #4 (API 05-081-06935)
SESE SEC 31 T5N R90W 6PM
MOFFAT COUNTY, CO
EAST RESOURCES, INC.





CHEM SOLUTIONS



May 10, 2010

Andrew Richmond
East Resources Inc.
370 Interlocken Blvd., Suite 550
Broomfield, CO 80021

RE: ERI001

Dear Andrew:

Enclosed please find the analytical results for Project #MS1007 WT Durham #4 samples collected on 5/4-5/5/10.

The samples were analyzed for BTEX by EPA Method 8260B. The water sample results are reported in Table 1. The soil sample results are reported in Tables 2 and 3. The BTEX quality control results are summarized in Tables 4 and 5.

The soil samples were analyzed for TPH by EPA Method 8015 as set forth in Texas Method TNRCC 1005. Tables 6 and 7 contain the TPH results for the samples. The quality control results for TPH are summarized in Table 8.

Thank you for the opportunity to work on this project. Please call if you have any questions. The invoice will follow shortly.

Sincerely,



John Graves
Laboratory Director

5/10/10

CHEMSOLUTIONS
TABLE 1
WATER BTEX RESULTS
Project ID: ERI006

Client Project ID: MS1007, WT Durham #4
EPA Method: 8260B
Sample Matrix: Water
Units: ug/L (ppb)

Date Sampled: 5/4/10
Date Received: 5/4/10
Date Analyzed: 5/4/10

<u>Sample #</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Xylene</u>	<u>Surrogate % Recovery</u>
MW01	3.1	ND	ND	ND	99.8
MW02	ND	ND	ND	ND	101
MW03	ND	2.0	ND	3.3	101
SW01	ND	3.6	ND	7.5	101
MW04	ND	2.4	ND	ND	101
Blank	ND	ND	ND	ND	99.6
Reporting Limit	2	2	2	2	

ND = Not Detected.

5/10/10

CHEMSOLUTIONS
TABLE 2
SOIL BTEX RESULTS
Project ID: ERI001

Client Project ID: MS1007, WT Durham #4
EPA Method: 8260B
Sample Matrix: Soil
Units: mg/Kg (ppm)
Dry Weight

Date Sampled: 5/4/10
Date Received: 5/4/10
Date Analyzed: 5/4/10

<u>Sample #</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Xylene</u>	<u>Surrogate % Recovery</u>
SO1-2'	ND	ND	ND	0.0095	99.4
SO2-2'	0.40	0.45	0.0087	0.090	98.8
SO3-2'	ND	ND	ND	ND	105
Blank	ND	ND	ND	ND	96.8
Reporting Limit	0.005	0.005	0.005	0.005	

ND = Not Detected.

5/10/10

CHEMSOLUTIONS
TABLE 3
SOIL BTEX RESULTS
 Project ID: ERI001

Client Project ID: MS1007, WT Durham #4
 EPA Method: 8260B
 Sample Matrix: Soil
 Units: mg/Kg (ppm)
 Dry Weight

Date Sampled: 5/5/10
 Date Received: 5/5/10
 Date Analyzed: 5/5/10

<u>Sample #</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Xylene</u>	<u>Surrogate % Recovery</u>
SO4-2'	ND	ND	ND	ND	96.8
SO5-2'	0.21	0.21	ND	0.024	99.0
SO6-2'	ND	0.0053	ND	0.0095	94.2
SO7-2'	ND	ND	ND	ND	99.7
SO8-2'	ND	ND	ND	ND	101
SO9-2'	0.0059	0.066	0.0084	0.096	98.6
SO10-2'	ND	ND	ND	ND	96.0
SO11-2'	ND	ND	ND	ND	98.8
SO12-2'	ND	ND	ND	ND	97.8
Blank	ND	ND	ND	ND	99.9
Reporting Limit	0.005	0.005	0.005	0.005	

ND = Not Detected.

5/10/10

CHEMSOLUTIONS
TABLE 4
WATER BTEX QUALITY CONTROL RESULTS
Project ID: ERI001

Client Project ID: MS1007, WT Durham #4
EPA Method: 8260B
Sample Matrix: Water
Units: ug/L (ppb)

Date Sampled: 5/4/10
Date Received: 5/4/10
Date Analyzed: 5/4/10

<u>Sample #</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Xylene</u>	<u>Surrogate % Recovery</u>
MW02 Matrix Spike	98.9	91.5	96.1	286	NA
% Recovery	98.9	91.5	96.1	95.3	96.4
MW02 Matrix Spike Dupl.	93.2	93.3	94.2	282	NA
% Recovery	93.2	93.3	94.2	94.0	99.6
Relative % Difference	5.93	1.95	2.00	1.41	NA
LCS Spike	98.8	95.4	97.0	290	NA
% Recovery	98.8	95.4	97.0	96.7	103
Reporting Limit	2	2	2	2	

NA = Not Applicable.
ND = Not Detected.

5/10/10

CHEMSOLUTIONS
TABLE 5
SOIL BTEX QUALITY CONTROL RESULTS
Project ID: ERI001

Client Project ID: MS1007, WT Durham #4
EPA Method: 8260B
Sample Matrix: Soil
Units: mg/Kg (ppm)

Date Sampled: 5/4/10
Date Received: 5/4/10
Date Analyzed: 5/4/10

<u>Sample #</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Xylene</u>	<u>Surrogate % Recovery</u>
SO1-2' Matrix Spike	0.0969	0.0919	0.0992	0.293	NA
% Recovery	96.9	91.9	99.2	97.7	95.9
SO1-2' Matrix Spike Dupl.	0.105	0.0922	0.101	0.301	NA
% Recovery	105	92.2	101	100	97.3
Relative % Difference	8.02	0.33	1.80	2.69	NA
LCS Spike	0.0947	0.0948	0.0961	0.287	NA
% Recovery	94.7	94.8	96.1	95.7	101
Reporting Limit	0.005	0.005	0.005	0.005	

NA = Not Applicable.
ND = Not Detected.

5/10/10

CHEMSOLUTIONS

TABLE 6

TPH RESULTS

Project ID: ERI001

Client Project ID: MS1007, WT Durham #4

EPA Method: 8015

Sample Matrix: Soil

Units: mg/Kg (ppm), Dry Weight

Date Sampled: 5/4/10

Date Received: 5/4/10

Date Analyzed: 5/4/10

<u>Sample #</u>	<u>Gasoline Range Organics</u>	<u>Diesel Range Organics</u>	<u>Motor Oil Range Organics</u>	<u>Total Petroleum Hydrocarbons</u>	<u>1-chlorooctane Surrogate % Recovery</u>	<u>1-chlorooctadecane Surrogate % Recovery</u>
SO1-2'	ND	ND	ND	ND	86.2	84.6
SO2-2'	ND	ND	ND	ND	83.3	80.2
SO3-2'	ND	ND	ND	ND	84.4	83.1
Blank	ND	ND	ND	ND	74.4	72.8
Reporting Limit	20	20	20	20		

ND=Not Detected

5/10/10

CHEMSOLUTIONS

TABLE 7

TPH RESULTS

Project ID: ERI001

Client Project ID: MS1007, WT Durham #4

EPA Method: 8015

Sample Matrix: Soil

Units: mg/Kg (ppm), Dry Weight

Date Sampled: 5/5/10

Date Received: 5/5/10

Date Analyzed: 5/5/10

<u>Sample #</u>	<u>Gasoline Range Organics</u>	<u>Diesel Range Organics</u>	<u>Motor Oil Range Organics</u>	<u>Total Petroleum Hydrocarbons</u>	<u>1-chlorooctane Surrogate % Recovery</u>	<u>1-chlorooctadecane Surrogate % Recovery</u>
SO4-2'	ND	ND	ND	ND	84.1	81.2
SO5-2'	ND	ND	ND	ND	75.0	74.5
SO6-2'	ND	ND	ND	ND	86.3	86.4
SO7-2'	ND	ND	ND	ND	71.4	74.2
SO8-2'	ND	ND	ND	ND	84.3	83.9
SO9-2'	ND	ND	ND	ND	73.3	76.2
SO10-2'	ND	ND	ND	ND	79.5	76.1
SO11-2'	ND	ND	ND	ND	77.1	74.8
SO12-2'	ND	ND	ND	ND	88.9	90.9
Blank	ND	ND	ND	ND	74.4	72.8
Reporting Limit	20	20	20	20		

ND=Not Detected

5/10/10

CHEMSOLUTIONS
TABLE 8
TPH QUALITY CONTROL RESULTS
 Project ID: ERI001

Client Project ID: MS1007, WT Durham #4
 EPA Method: 8015
 Sample Matrix: Soil
 Units: mg/Kg (ppm), Dry Weight

Date Sampled: 5/4/10
 Date Received: 5/4/10
 Date Analyzed: 5/4/10

<u>Sample #</u>	<u>Gasoline Range Organics</u>	<u>Diesel Range Organics</u>	<u>Motor Oil Range Organics</u>	<u>Total Petroleum Hydrocarbons</u>	<u>1-chlorooctane Surrogate % Recovery</u>	<u>1-chlorooctadecane Surrogate % Recovery</u>
SO3-2' MS (250PPM)	251	285	NA	NA	NA	NA
% Recovery	100	114	NA	NA	92.6	78.1
SO3-2' MSD (250PPM)	242	283	NA	NA	NA	NA
% Recovery	96.8	113	NA	NA	98.1	86.1
% Relative Standard Deviation	3.65	0.70	NA	NA	NA	NA
LCS Spike (250PPM)	241	279	NA	NA	NA	NA
% Recovery	96.4	112	NA	NA	94.3	80.2
LCS Spike Dupl. (250PPM)	243	276	NA	NA	NA	NA
% Recovery	97.2	110	NA	NA	96.4	82.2
% Relative Standard Deviation	0.83	1.08	NA	NA	NA	NA
Reporting Limit	20	20	20	20	NA	NA

MS = Matrix Spike, MSD = Matrix Spike Duplicate, NA = Not Applicable.

March 1, 2010

CHEMSOLUTIONS
QUALITY CONTROL RECOVERY LIMITS

VOC EPA METHOD 8260B

SOIL MATRIX

<u>Analyte</u>	<u>LCS % Recovery Range</u>	<u>MS/MSD % Recovery Range</u>	<u>RPD</u>
Vinyl Chloride	61-136	61-136	20
1 Dichloroethene	69-135	75-135	15
Methyl t-Butyl Ether	60-135	59-144	15
Trans 1,2 Dichloroethene	70-132	84-132	10
Cis 1,2 Dichloroethene	69-132	80-140	10
1,1,1 Trichloroethane	64-139	78-130	10
Benzene	76-117	68-125	10
1,2 Dichloroethane	72-122	72-122	20
Trichloroethene	80-115	70-121	15
Toluene	82-112	56-125	15
1,1,2 Trichloroethane	67-126	58-134	10
Tetrachloroethene	55-129	46-143	20
Chlorobenzene	81-115	83-109	10
Ethyl Benzene	83-108	57-124	15
Xylene	81-115	63-120	10
1,4 Dioxane	74-123	74-123	15

<u>Surrogate Standard</u>	<u>% Recovery Range</u>
Dibromofluoromethane	60-142
Dichloroethane-D4	73-136
Toluene-D8	59-130
Bromofluorobenzene	62-129

March 1, 2010

CHEMSOLUTIONS
QUALITY CONTROL RECOVERY LIMITS

VOC EPA METHOD 8260B

WATER MATRIX

<u>Analyte</u>	<u>LCS % Recovery Range</u>	<u>MS/MSD % Recovery Range</u>	<u>RPD</u>
Vinyl Chloride	63-145	65-139	20
1 Dichloroethene	65-132	67-130	15
Methylene Chloride	75-128	75-128	15
Methyl t-Butyl Ether	65-136	75-132	15
Trans 1,2 Dichloroethene	79-124	81-122	10
1,1 Dichloroethane	72-140	72-140	10
Cis 1,2 Dichloroethene	82-120	82-121	10
1,1,1 Trichloroethane	79-124	79-124	10
Benzene	75-123	71-129	10
1,2 Dichloroethane	71-130	64-146	20
Trichloroethene	76-117	79-112	10
Toluene	76-115	74-120	10
1,1,2 Trichloroethane	69-127	79-124	10
Tetrachloroethene	68-124	69-123	15
Chlorobenzene	79-111	82-107	10
Ethyl Benzene	78-116	74-118	15
Xylene	77-115	69-124	10
1,4 Dioxane	74-123	74-123	15

<u>Surrogate Standard</u>	<u>% Recovery Range</u>
Dibromofluoromethane	69-131
Dichloroethane-D4	66-141
Toluene-D8	85-115
Bromofluorobenzene	69-130

March 4, 2010

CHEMSOLUTIONS

QUALITY CONTROL RECOVERY LIMITS

EPA METHOD 8015

TEXAS TPH METHOD TNRCC-1005

<u>Water Matrix</u>	<u>% Recovery Range</u>	<u>RPD</u>
Gasoline LCS/LCSD	36-117	20
Gasoline MS/MSD	36-117	20
Diesel LCS/LCSD	64-123	15
Diesel MS/MSD	57-126	20
1-Chlorooctane (Surrogate)	5-128	
1-Chlorooctadecane (Surrogate)	0-140	

<u>Soil Matrix</u>	<u>% Recovery Range</u>	<u>RPD</u>
Gasoline LCS/LCSD	64-120	15
Gasoline MS/MSD	67-124	15
Diesel LCS/LCSD	73-134	15
Diesel MS/MSD	47-160	15
1-Chlorooctane (Surrogate)	40-125	
1-Chlorooctadecane (Surrogate)	43-139	

CHEMSOLUTIONS

Chain of Custody

9606 S. Spruce Mountain Rd. Phone: 303-771-5570
 Larkspur, CO 80118 Fax: 303-771-5574
 E-mail: john@chemmobile.com

Client Name & Address: East Resources Inc. 370 Interlocken Blvd Ste 550 Broomfield, CO 80021 Contact Person: Andrew Richmond Phone #: FAX #: E-mail:		Client Project Name & Location: WT Durham #4 Client Project Number: MS1007 Invoice to:		ChemSolutions Project #: ERI001 Location Received: on-site Custody Seals: n/a Date/Time Refrigerated: Upon Receipt Temp: Requested Analysis							
Sample ID	Date Sampled	Time Sampled	Matrix	# of Containers	BTEX	GRD	DRO				Remarks
MW01	5-4-10	8:45	W	4	X						
MW02		8:30		4	X						
MW03		8:20		4	X						
SW01		8:15		4	X						
MW04		12:30	↓	4	X						
S01-2'		1409	S	1	X	X					
S02-2'		1400		1	X	X					
S03-2'	↓	1419	↓	1	X	X					
Sampled and Relinquished by:		Date:	Time:	Received by:				Date:	Time:		
ash up		5/24/10	15:00	John A. Graves				5/4/10	1500		
Relinquished by:		Date:	Time:	Received by:				Date:	Time:		
Relinquished by:		Date:	Time:	Received by:				Date:	Time:		

CHEMSOLUTIONS

Chain of Custody

9606 S. Spruce Mountain Rd. Phone: 303-771-5570
 Larkspur, CO 80118 Fax: 303-771-5574
 E-mail: john@chemmobile.com

Client Name & Address: East Resources Inc.		Client Project Name & Location: WT Durham #4			ChemSolutions Project #: ERI001					
Contact Person: Andrew Richmond					Location Received: on-site					
Phone #:					Custody Seals: n/a					
FAX #:		Client Project Number: MS1007			Date/Time Refrigerated:					
E-mail:		Invoice to:			Upon Receipt Temp:					
Sample ID	Date Sampled	Time Sampled	Matrix	# of Containers	Requested Analysis					Remarks
					BTEX	TPH - Grav/Dec/loc				
S04-2'	5/5/10	905	S	1	X	X				
S05-2'	↓	11:18		1	X	X				
S06-2'		11:50		1	X	X				
S07-2'		14:52		1	X	X				
S08-2'		15:00		1	X	X				
S09-2'		15:50 1505		1	X	X				
S10-2'		15:13		1	X	X				
S11-2'		15:46		1	X	X				
S12-2'		15:54	↓	1	X	X				
Sampled and Relinquished by:		Date:	Time:	Received by:			Date:	Time:		
[Signature]		5/5/10	17:37	John Leaves			5/5/10	1737		
Relinquished by:		Date:	Time:	Received by:			Date:	Time:		
Relinquished by:		Date:	Time:	Received by:			Date:	Time:		



5/12/2010

LT Environmental, Inc.

Asher Weinberg

4600 West 60th Avenue

Arvada

CO

80003

Project Name- WT Durham #4

Project Number- MS1007

Attached are your analytical results for WT Durham #4 received by Origins Laboratory, Inc. May 12, 2010 12:20 pm. This project is associated with Origins project number X005060-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods specified in SW-846. The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.

303.433.1322

o-squad@oelabinc.com



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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
S13-0.5'	X005060-01	Soil	5/11/2010 4:23:00PM	05/12/2010 12:20
S14-0.5'	X005060-02	Soil	5/11/2010 4:40:00PM	05/12/2010 12:20
S15-0.5'	X005060-03	Soil	5/11/2010 4:40:00PM	05/12/2010 12:20
S16-0.5'	X005060-04	Soil	5/11/2010 4:49:00PM	05/12/2010 12:20
S17-0.5'	X005060-05	Soil	5/11/2010 4:58:00PM	05/12/2010 12:20
S18-0.5'	X005060-06	Soil	5/11/2010 5:07:00PM	05/12/2010 12:20
GW01	X005060-07	Water	5/11/2010 4:00:00PM	05/12/2010 12:20

Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Nauleen

Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

S13-0.5'

5/11/2010 4:23:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X005060-01 (Soil)

BTEX by EPA 8260B

Benzene	0.0480	0.00400	mg/kg	1	OE12005	05/12/2010	05/12/2010	
Toluene	0.481	0.00400	"	"	"	"	"	
Ethylbenzene	0.0646	0.00400	"	"	"	"	"	
Xylenes, total	0.865	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	107 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	102 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	74.7-123			"	"	"	

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OE12004	05/12/2010	05/12/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	
TPH - Carbon Chain Total	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	95.0 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

S14-0.5'

5/11/2010 4:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X005060-02 (Soil)

BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OE12005	05/12/2010	05/12/2010	
Toluene	ND	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
Xylenes, total	ND	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	108 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	98.8 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	74.7-123			"	"	"	

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OE12004	05/12/2010	05/12/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	
TPH - Carbon Chain Total	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	93.6 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

S15-0.5'

5/11/2010 4:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X005060-03 (Soil)

BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OE12005	05/12/2010	05/12/2010	
Toluene	ND	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
Xylenes, total	0.0103	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	106 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	96.6 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	74.7-123			"	"	"	

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OE12004	05/12/2010	05/12/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	
TPH - Carbon Chain Total	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	94.1 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

S16-0.5'

5/11/2010 4:49:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X005060-04 (Soil)

BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OE12005	05/12/2010	05/12/2010
Toluene	ND	0.00400	"	"	"	"	"
Ethylbenzene	ND	0.00400	"	"	"	"	"
Xylenes, total	ND	0.00400	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	105 %	77.6-134			"	"	"
Surrogate: Toluene-d8	98.6 %	81.4-121			"	"	"
Surrogate: 4-Bromofluorobenzene	106 %	74.7-123			"	"	"

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OE12004	05/12/2010	05/12/2010
Diesel (C10-C28)	ND	50.0	"	"	"	"	"
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"
TPH - Carbon Chain Total	ND	50.0	"	"	"	"	"

Surrogate: o-Terphenyl	95.5 %	65-140			"	"	"
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Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

S17-0.5'

5/11/2010 4:58:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X005060-05 (Soil)

BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OE12005	05/12/2010	05/12/2010	
Toluene	ND	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
Xylenes, total	ND	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	106 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	98.2 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	74.7-123			"	"	"	

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OE12004	05/12/2010	05/12/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	
TPH - Carbon Chain Total	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	95.0 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

S18-0.5'

5/11/2010 5:07:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X005060-06 (Soil)

BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OE12005	05/12/2010	05/12/2010	
Toluene	ND	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
Xylenes, total	ND	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	108 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	93.1 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	74.7-123			"	"	"	

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	50.0	mg/kg	1	OE12004	05/12/2010	05/12/2010	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	
TPH - Carbon Chain Total	ND	50.0	"	"	"	"	"	

Surrogate: o-Terphenyl	95.6 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

GW01

5/11/2010 4:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X005060-07 (Water)

BTEX by EPA 8260B

Benzene	1.37	0.0100	mg/L	10	OE12001	05/12/2010	05/12/2010	
Toluene	1.73	0.0100	"	"	"	"	"	
Ethylbenzene	0.0723	0.0100	"	"	"	"	"	
Xylenes, total	0.752	0.0100	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	99.4 %	73.5-130	"	"	"	"	"	
Surrogate: Toluene-d8	99.3 %	79.3-113	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.5 %	81.5-117	"	"	"	"	"	

Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

Extractable Petroleum Hydrocarbons by 8015M - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch OE12004 - Default Prep GC-Semi										
Blank (OE12004-BLK1)					Prepared: 05/12/2010 Analyzed: 05/12/2010					
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
Residual Range Organics (C28-C36)	ND	200	"							
TPH - Carbon Chain Total	ND	50.0	"							
<i>Surrogate: o-Terphenyl</i>	<i>47.7</i>		<i>g</i>	<i>50.0</i>		<i>95.3</i>	<i>65-140</i>			
LCS (OE12004-BSI)					Prepared: 05/12/2010 Analyzed: 05/12/2010					
Gasoline (C6-C10)	123	50.0	mg/kg				65-140			
Diesel (C10-C28)	460	50.0	"	500		91.9	60-140			
<i>Surrogate: o-Terphenyl</i>	<i>49.0</i>		<i>g</i>	<i>50.0</i>		<i>98.1</i>	<i>65-140</i>			
Matrix Spike (OE12004-MSI)					Source: X005037-01	Prepared: 05/12/2010 Analyzed: 05/12/2010				
Gasoline (C6-C10)	119	50.0	mg/kg		25.1		65-130			
Diesel (C10-C28)	441	50.0	"	500	ND	88.2	60-140			
<i>Surrogate: o-Terphenyl</i>	<i>47.8</i>		<i>g</i>	<i>50.0</i>		<i>95.6</i>	<i>65-140</i>			
Matrix Spike Dup (OE12004-MSD1)					Source: X005037-01	Prepared: 05/12/2010 Analyzed: 05/12/2010				
Gasoline (C6-C10)	121	50.0	mg/kg		25.1		65-130	2.05	20	
Diesel (C10-C28)	450	50.0	"	500	ND	89.9	60-140	1.98	25	
<i>Surrogate: o-Terphenyl</i>	<i>48.3</i>		<i>g</i>	<i>50.0</i>		<i>96.5</i>	<i>65-140</i>			

Origins Laboratory, Inc.



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.

Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

Volatile Organic Compounds by EPA Method 8260B - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch OE12001 - EPA 5030B

Blank (OE12001-BLK1)

Prepared: 05/12/2010 Analyzed: 05/12/2010

Benzene	ND	0.001	mg/L
Toluene	ND	0.001	"
Ethylbenzene	ND	0.001	"
o-Xylene	ND	0.001	"
m,p-Xylene	ND	0.002	"

Surrogate: 1,2-Dichloroethane-d4	63.0	ug/L	62.5	101	73.5-130
Surrogate: Toluene-d8	61.2	"	62.5	97.9	79.3-113
Surrogate: 4-Bromofluorobenzene	62.2	"	62.5	99.5	81.5-117

Blank (OE12001-BLK2)

Prepared: 05/12/2010 Analyzed: 05/12/2010

Benzene	ND	0.001	mg/L
Toluene	ND	0.001	"
Ethylbenzene	ND	0.001	"
o-Xylene	ND	0.001	"
m,p-Xylene	ND	0.002	"

Surrogate: 1,2-Dichloroethane-d4	63.2	ug/L	62.5	101	73.5-130
Surrogate: Toluene-d8	60.8	"	62.5	97.3	79.3-113
Surrogate: 4-Bromofluorobenzene	62.4	"	62.5	99.9	81.5-117

LCS (OE12001-BS2)

Prepared: 05/12/2010 Analyzed: 05/12/2010

Benzene	0.04	0.001	mg/L	77.3-128
Toluene	0.05	0.001	"	81.7-118

Surrogate: 1,2-Dichloroethane-d4	62.0	ug/L	62.5	99.2	73.5-130
Surrogate: Toluene-d8	61.9	"	62.5	99.0	79.3-113
Surrogate: 4-Bromofluorobenzene	61.8	"	62.5	98.8	81.5-117

Matrix Spike (OE12001-MS1)

Source: X005053-04

Prepared: 05/12/2010 Analyzed: 05/12/2010

Benzene	0.04	0.001	mg/L	74.5-132
Toluene	0.05	0.001	"	74.2-116

Origins Laboratory, Inc.

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.

Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

Volatile Organic Compounds by EPA Method 8260B - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch OE12001 - EPA 5030B

Matrix Spike (OE12001-MS1)		Source: X005053-04		Prepared: 05/12/2010 Analyzed: 05/12/2010						
Surrogate: 1,2-Dichloroethane-d4	62.2		ug/L	62.5		99.5	73.5-130			
Surrogate: Toluene-d8	61.0		"	62.5		97.6	79.3-113			
Surrogate: 4-Bromofluorobenzene	61.3		"	62.5		98.0	81.5-117			
Matrix Spike (OE12001-MS2)		Source: X005053-05		Prepared: 05/12/2010 Analyzed: 05/12/2010						
Benzene	0.05	0.001	mg/L				74.5-132			
Toluene	0.05	0.001	"				74.2-116			
Surrogate: 1,2-Dichloroethane-d4	62.0		ug/L	62.5		99.3	73.5-130			
Surrogate: Toluene-d8	61.0		"	62.5		97.5	79.3-113			
Surrogate: 4-Bromofluorobenzene	61.5		"	62.5		98.4	81.5-117			
Matrix Spike Dup (OE12001-MSD1)		Source: X005053-04		Prepared: 05/12/2010 Analyzed: 05/12/2010						
Benzene	0.04	0.001	mg/L				74.5-132	3.37	13.1	
Toluene	0.05	0.001	"				74.2-116	7.18	21.2	
Surrogate: 1,2-Dichloroethane-d4	63.1		ug/L	62.5		101	73.5-130			
Surrogate: Toluene-d8	60.0		"	62.5		95.9	79.3-113			
Surrogate: 4-Bromofluorobenzene	61.6		"	62.5		98.6	81.5-117			
Matrix Spike Dup (OE12001-MSD2)		Source: X005053-05		Prepared: 05/12/2010 Analyzed: 05/12/2010						
Benzene	0.05	0.001	mg/L				74.5-132	1.68	13.1	
Toluene	0.05	0.001	"				74.2-116	2.27	21.2	
Surrogate: 1,2-Dichloroethane-d4	61.6		ug/L	62.5		98.5	73.5-130			
Surrogate: Toluene-d8	60.3		"	62.5		96.5	79.3-113			
Surrogate: 4-Bromofluorobenzene	62.7		"	62.5		100	81.5-117			

Batch OE12005 - EPA 5030B

Blank (OE12005-BLK1)		Prepared: 05/12/2010 Analyzed: 05/12/2010								
Benzene	ND	0.004	mg/kg							
Toluene	ND	0.004	"							

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

Volatile Organic Compounds by EPA Method 8260B - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch OE12005 - EPA 5030B										
Blank (OE12005-BLK1)					Prepared: 05/12/2010 Analyzed: 05/12/2010					
Ethylbenzene	ND	0.004	mg/kg							
o-Xylene	ND	0.004	"							
m,p-Xylene	ND	0.008	"							
Surrogate: 1,2-Dichloroethane-d4	63.6		ug/L	62.5		102	77.6-134			
Surrogate: Toluene-d8	59.4		"	62.5		95.1	81.4-121			
Surrogate: 4-Bromofluorobenzene	68.3		"	62.5		109	74.7-123			
LCS (OE12005-BSI)					Prepared: 05/12/2010 Analyzed: 05/12/2010					
Benzene	0.20	0.004	mg/kg	0.200		101	75.2-128			
Toluene	0.20	0.004	"	0.200		97.6	76.3-130			
Surrogate: 1,2-Dichloroethane-d4	61.3		ug/L	62.5		98.1	77.6-134			
Surrogate: Toluene-d8	61.8		"	62.5		98.9	81.4-121			
Surrogate: 4-Bromofluorobenzene	69.7		"	62.5		111	74.7-123			
LCS Dup (OE12005-BSDI)					Prepared: 05/12/2010 Analyzed: 05/12/2010					
Benzene	0.21	0.004	mg/kg	0.200		105	75.2-128	3.41	200	
Toluene	0.20	0.004	"	0.200		99.6	76.3-130	2.07	200	
Surrogate: 1,2-Dichloroethane-d4	63.4		ug/L	62.5		101	77.6-134			
Surrogate: Toluene-d8	61.4		"	62.5		98.2	81.4-121			
Surrogate: 4-Bromofluorobenzene	69.4		"	62.5		111	74.7-123			

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Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager



5/19/2010

LT Environmental, Inc.

Asher Weinberg

4600 West 60th Avenue

Arvada

CO

80003

Project Name- WT Durham #4

Project Number- MS1007

Attached are your analytical results for WT Durham #4 received by Origins Laboratory, Inc. May 18, 2010 4:09 pm. This project is associated with Origins project number X005105-01 .

The analytical results in the following report were analyzed under the guidelines of EPA Methods specified in SW-846. The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all,

Origins Laboratory, Inc.

303.433.1322

o-squad@oelabinc.com



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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
GW02	X005105-01	Water	5/18/2010 12:10:00PM	05/18/2010 16:09

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

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LABORATORY, INC

www.originslaboratory.com

page ☐ of ☐

10051015

Client: LT Environmental
Address: 820 Megan Avenue Rifle CO 81650
Telephone Number: 970 285 4985
Email Address: ashwinberg@ltenv.com

Project Manager: Asher Weinberg
Project Name: WT Durham #4
Project Number: MS1007
Samples Collected By: AW

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #	Other			
64003	5/18/10	12:10	3	X				X						1
														2
														3
														4
														5
														6
														7
														8
														9
														10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
Asher Weinberg	5/18/10	12:09	Asher Weinberg	5/18/10	6:09	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Origins Laboratory, Inc.

Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

GW02

5/18/2010 12:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X005105-01 (Water)

BTEX by EPA 8260B

Benzene	0.332	0.0500	mg/L	50	OE19001	05/18/2010	05/19/2010	
Toluene	0.319	0.0500	"	"	"	"	"	
Ethylbenzene	0.0128	0.00100	"	1	"	"	05/19/2010	
Xylenes, total	0.258	0.0500	"	50	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	100 %	73.5-130			"	"	05/19/2010	
Surrogate: Toluene-d8	97.2 %	79.3-113			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.6 %	81.5-117			"	"	"	

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

Volatile Organic Compounds by EPA Method 8260B - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch OE19001 - EPA 5030B										
Blank (OE19001-BLK1)					Prepared: 05/18/2010 Analyzed: 05/19/2010					
Benzene	ND	0.001	mg/L							
Toluene	ND	0.001	"							
Ethylbenzene	ND	0.001	"							
o-Xylene	ND	0.001	"							
m,p-Xylene	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	65.8		ug/L	62.5		105	73.5-130			
Surrogate: Toluene-d8	57.4		"	62.5		91.8	79.3-113			
Surrogate: 4-Bromofluorobenzene	60.8		"	62.5		97.2	81.5-117			
LCS (OE19001-BS1)					Prepared: 05/18/2010 Analyzed: 05/19/2010					
Benzene	0.05	0.001	mg/L	0.0500		106	77.3-128			
Toluene	0.05	0.001	"	0.0500		90.3	81.7-118			
Surrogate: 1,2-Dichloroethane-d4	62.5		ug/L	62.5		100	73.5-130			
Surrogate: Toluene-d8	60.0		"	62.5		96.0	79.3-113			
Surrogate: 4-Bromofluorobenzene	62.5		"	62.5		100	81.5-117			
LCS Dup (OE19001-BSD1)					Prepared: 05/18/2010 Analyzed: 05/19/2010					
Benzene	0.05	0.001	mg/L	0.0500		107	77.3-128	1.13	200	
Toluene	0.05	0.001	"	0.0500		91.0	81.7-118	0.728	200	
Surrogate: 1,2-Dichloroethane-d4	61.3		ug/L	62.5		98.0	73.5-130			
Surrogate: Toluene-d8	59.9		"	62.5		95.8	79.3-113			
Surrogate: 4-Bromofluorobenzene	61.2		"	62.5		97.8	81.5-117			

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

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

Asher Weinberg
Project Number: MS1007
Project: WT Durham #4

Notes and Definitions

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RPD Relative Percent Difference

Origins Laboratory, Inc.



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