

1625 Broadway
Suite 2200.
Denver, CO 80202

Tel: 303.228.4000
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www.nobleenergyinc.com



North America Division

September 18, 2012

Mr. Chris Canfield
Department Of Natural Resources
Oil & Gas Conservation Commission
707 Wapiti Ct, Suite 204
Rifle, CO 81650

RE: Form 27, Excavation Report and Request for No Further Action
SGV 7N Pad
Facility #334127
SWSW Sec. 7, T8S, R95W
Garfield County, Colorado

Dear Mr. Canfield:

Please find attached a completed form 27 and excavation report for the SGV 7N Pad. Based on the site remedial activities and attached laboratory analysis Noble Energy Inc. is requesting that the COGCC consider this location closed, requiring no further action.

Noble Energy Inc. would like to claim business confidentiality protection for the information submitted in this letter, the supporting materials attached and all previous and subsequent correspondence related to this matter. Please contact the Noble Energy Environmental Department at (303) 228-4158 if you have any questions or require additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Ryan Bruner', with a long horizontal flourish extending to the right.

Ryan Bruner
Environmental and Regulatory Supervisor

Attachments

State of Colorado
Oil and Gas Conservation Commission

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



#8095

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.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

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

OGCC Employee:

☒ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No: 2230481

OGCC Operator Number: 100322

Name of Operator: Noble Energy, Inc.

Address: 1625 Broadway, Suite 2200

City: Denver State: CO Zip: 80202

Contact Name and Telephone:

Ryan Bruner

No: 303-228-4158

Fax: 303-228-4286

API Number: 05-045-14894

County: Garfield

Facility Name: SGV 7N Pad

Facility Number: 334127

Well Name: M Dutton

Well Number: 7-24C

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SWSW Sec. 7 T8S R95W 6PM Latitude: 39.373135 Longitude: -108.044009

TECHNICAL CONDITIONS

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

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.): Non-irrigated rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Ildefonso stony loam, 25-45% slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Water well 2,655 southwest, unnamed ditch 116' north

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

Impacted Media (check):



Soils



Vegetation



Groundwater



Surface Water

Extent of Impact:

38' x 5' x 5'

How Determined:

Excavation

REMEDIALATION WORKPLAN

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

A leak in the water dump line from the separators to the tanks caused an unknown quantity of produced water to be released to the subsurface. The wellheads and separators were shut in and the leaking dump line was repaired. See Form 19 (Document #2221894).

Describe how source is to be removed:

Impacted soil was removed via excavation until clean sidewalls were obtained, and confirmation soil samples were collected. All soil samples were analyzed for BTEX, TPH, PAHs, and Table 910-1 metals (excluding Boron). All samples were in compliance with COGCC standards except arsenic, which was below background concentrations.

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.:

Impacted soil was removed via excavation and land farmed on site within a lined berm.



REMEDIATION WORKPLAN (Cont.)

Page 2

Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: M Dutton 7-24C
Facility Name & No: SGV 7N Pad 334127

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 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.

Landfarmed soil will be used to backfill the excavation, and the original grade will be restored. The oil and gas production facility remains on site.

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:

See attached report.

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

Approximately 40 cubic yards of impacted soil were land farmed on site in a lined berm.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 5/16/12	Date Site Investigation Completed: 5/29/12	Date Remediation Plan Submitted: 8/7/12
Remediation Start Date: 5/16/12	Anticipated Completion Date: TBD	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: Ryan Bruner Signed: _____
Title: Environmental and Regulatory Supervisor Date: 8/27/12

OGCC Approved: _____ Title: _____ Date: _____



July 26, 2012

Mr. Ryan Bruner
Environmental and Regulatory Supervisor
Noble Energy, Inc.
1625 Broadway, Suite 2200
Denver, Colorado 80202

**RE: Remediation Activity Summary Report/No Further Action
M Dutton 7-24C Tank Battery
Weld County, Colorado
COGCC Tracking #2221894**

Dear Mr. Bruner:

Noble Energy, Inc. (Noble) conducted environmental remediation and soil sampling activities following the identification of petroleum hydrocarbon impacted soil at the M Dutton 7-24C Tank Battery (Site). This correspondence describes the work conducted at the Site.

The legal site description is the southwest quarter of the southwest quarter of section 7, township 8 south, and range 95 west (Figure 1). The Site is located approximately 3.8 miles southeast of the intersection of Colorado Road 300 and Old US Highway 6 in Garfield County, Colorado.

A Noble contractor excavated approximately 40 cubic yards of impacted soil, which was land farmed onsite within a lined berm. The total extent of the excavation, as illustrated on Figure 2, was approximately 5 feet east-west by 38 feet north-south by 5 feet deep. Groundwater was not encountered during excavation activities. Land farmed soil will be used to backfill the excavation.

On May 16, 2012, Noble personnel were on site to oversee 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 impacted interval along the sidewalls and floor of the excavation. Each sample was field screened for volatile organic compounds with a photo-ionization detector to determine if additional excavation was required. Once field screening indicated impacted soil had been excavated, confirmation samples were collected and submitted to an analytical laboratory.

Four composite soil samples were collected from the excavation sidewalls, one soil sample was collected at the base of the excavation, and a composite sample was taken from the existing land farm and submitted to ALS Environmental Laboratory (ALS) of Houston, Texas, for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by method SW8260, total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO) by method SW8015, Table 910-1 metals (except boron) by methods SW6020, SW7471A, and SW7196, and polycyclic aromatic hydrocarbons (PAHs) by method SW8270. Four background

samples were collected at various points from the surrounding vegetated slope and submitted to ALS for analysis of arsenic (Figure 2).

The Colorado Oil and Gas Conservation Commission (COGCC) cleanup standards for BTEX in soil are 0.17 milligrams per kilogram (mg/kg), 85 mg/kg, 100 mg/kg, and 175 mg/kg, respectively. The COGCC standard for TPH in soil is 500 mg/kg.

Soil analytical results indicate that all arsenic concentrations exceed the COGCC soil standard of 0.39 milligrams per kilogram (mg/kg) but are below background concentrations. All other Table 910-1 metals, TPH, BTEX, and PAHs are in compliance with COGCC standards. The soil analytical results are summarized in Table 1 and Table 2. The laboratory analytical report is attached.

Per the excavation activities conducted at the Site, impacted soil exceeding state cleanup standards was removed and land farmed onsite. All soil samples exceeded the COGCC standard for arsenic, but were within the range of naturally occurring levels in the region. The excavation and land farm arsenic concentrations are less than the background concentrations. No Table 910-1 metals other than arsenic were detected in exceedance of COGCC standards in any of the soil samples collected from the excavation or land farm. The soil samples were also in compliance for the remaining Table 910-1 analytes analyzed. The Table 910-1 PAH concentrations are in compliance with the COGCC standards in the composite soil samples analyzed. Groundwater was not encountered, and a clean sample was collected from the base of the excavation. Based on the work described in this report, all impacted material has been remediated, and Noble therefore respectfully requests a No Further Action status for this Site.

LTE appreciates the opportunity to provide environmental services to Noble. Please call LTE at 303-433-9788 if you have any questions or comments regarding this report.

Sincerely,

LT ENVIRONMENTAL, INC.



Rob Rebel, P.E.
Project Engineer



Steve Kahn, P.E.
Principal

Attachments

Figure 1	Site Location Map
Figure 2	Site Map
Table 1	Soil Analytical Results
Table 2	Soil PAH Analytical Results
Attachment	Laboratory Analytical Report

FIGURES

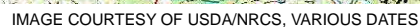




IMAGE COURTESY OF GOOGLE EARTH, 08/08/2011

LEGEND

- SOIL SAMPLE
- ▲ LANDFARM COMPOSITE SAMPLE
- BACKGROUND SAMPLE
- ★ RELEASE LOCATION
- OIL AND GAS WELL
- ↑ GROUNDWATER FLOW DIRECTION
- ▨ EXCAVATION EXTENT
- LANDFARM EXTENT
- BERM
- CURRENT INFRASTRUCTURE

0 80 160
Feet



FIGURE 2
SITE MAP
M. DUTTON 7-24C (7N PAD)
GARFIELD COUNTY, COLORADO

NOBLE ENERGY, INC.



TABLES

TABLE 1
SOIL ANALYTICAL RESULTS
M DUTTON 7-24C
GARFIELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Location	Standard	Units	N01	S01	E01	W01	B01	LANDFARM 01	BACKGROUN D 01	BACKGROUN D 02	BACKGROUN D 03	BACKGROUN D 04
Sample Date			5/16/2012	5/16/2012	5/16/2012	5/16/2012	5/16/2012	5/16/2012	5/16/2012	5/16/2012	5/16/2012	5/16/2012
Arsenic	0.39	mg/kg	1.54	1.71	1.88	2.02	2.26	1.70	3.28	4.96	5.25	4.87
Barium	15,000	mg/kg	2,070	569	251	424	353	492	NA	NA	NA	NA
Cadmium	70	mg/kg	<0.0471	<0.442	<0.0456	<0.448	<0.451	<0.462	NA	NA	NA	NA
Chromium (III)	120,000	mg/kg	5.93	7.23	8.45	9.14	7.12	5.97	NA	NA	NA	NA
Chromium (VI)	23	mg/kg	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	NA	NA	NA	NA
Copper	3,100	mg/kg	14.9	17.6	23.2	19.0	17.5	15.0	NA	NA	NA	NA
Lead	400	mg/kg	7.38	7.97	8.85	8.82	11.0	6.47	NA	NA	NA	NA
Mercury	23	mg/kg	0.0297	0.0743	0.0613	0.0571	0.0485	0.0318	NA	NA	NA	NA
Nickel	1,600	mg/kg	9.07	11.1	14.6	16.9	8.49	9.59	NA	NA	NA	NA
Selenium	390	mg/kg	1.18	2.08	1.95	2.22	1.60	1.40	NA	NA	NA	NA
Silver	390	mg/kg	<0.471	<0.442	<0.456	<0.448	<0.451	<0.462	NA	NA	NA	NA
Zinc	23,000	mg/kg	38.4	43.5	54.7	61.7	41.5	37.5	NA	NA	NA	NA
TPH-DRO	--	mg/kg	2.7	5.1	<1.7	2.6	1.7	8.8	NA	NA	NA	NA
TPH-GRO	--	mg/kg	<0.050	0.057	<0.050	0.32	0.17	<0.050	NA	NA	NA	NA
TPH	500	mg/kg	2.7	5.157	<1.75	2.92	1.87	8.8	NA	NA	NA	NA
Benzene	0.17	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
Toluene	85	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
Ethylbenzene	100	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
m,p-Xylene	--	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA	NA	NA	NA
o-Xylene	--	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
Total Xylenes	175	mg/kg	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	NA	NA	NA	NA

NOTES:

mg/kg - milligrams per kilogram

NA- not analyzed

TPH-GRO - total petroleum hydrocarbons - gasoline range organics analyzed by SW8015

TPH-DRO - total petroleum hydrocarbons - diesel range organics analyzed by SW8015

TPH Total - total petroleum hydrocarbons is the sum of TPH-GRO and TPH-DRO

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

BOLD - indicates result exceeds the applicable standard

Benzene, toluene, ethylbenzene, and total xylenes analyzed by SW8260

Metals by Methods SW6020, SW7471A, and SW7196

-- No standard

TABLE 2

SOIL PAH ANALYTICAL RESULTS
M DUTTON 7-24C
GARFIELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Analyte	Standard	Units	N01	S01	E01	W01	B01	LANDFARM 01
Sample Date			5/16/2012	5/16/2012	5/16/2012	5/16/2012	5/16/2012	5/16/2012
Acenaphthene	1,000	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	<0.0066	<0.0066
Anthracene	1,000	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	<0.0066	<0.0066
Benzo (a) anthracene	0.22	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	<0.0066	<0.0066
Benzo (b) fluoranthene	0.22	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	<0.0066	<0.0066
Benzo (k) fluoranthene	2.2	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	0.016	<0.0066
Benzo (a) pyrene	0.022	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	<0.0066	<0.0066
Chrysene	22	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	0.010	<0.0066
Dibenz (a,h) anthracene	0.022	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	<0.0066	<0.0066
Fluoranthene	1,000	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	0.0087	<0.0066
Fluorene	1,000	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	<0.0066	<0.0066
Indeno (1,2,3-cd) pyrene	0.22	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	0.0086	<0.0066
Napthalene	23	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	0.0083	<0.0066
Pyrene	1000	mg/kg	<0.0066	<0.0066	<0.0066	<0.0064	<0.0066	<0.0066

NOTES:

PAH - polycyclic aromatic hydrocarbon

mg/kg - milligrams per kilogram

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

Analyzed by SW8270

ATTACHMENT

LABORATORY ANALYTICAL REPORT



29-May-2012

Asher Weinberg
Noble Energy
505 B East 8th Avenue
Yuma, Colorado 80759

Tel: (970) 625-1494
Fax: (970) 625-1654

Re: 7N

Work Order: **1205797**

Dear Asher,

ALS Environmental received 11 samples on 17-May-2012 09:05 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 32.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink that reads "Patricia L. Lynch".

Electronically approved by: Makenzie L. Henderson

Patricia L. Lynch
Project Manager



Certificate No: T104704231-09A-TX

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Noble Energy
Project: 7N
Work Order: 1205797

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1205797-01	N01	Soil		5/16/2012 12:08	5/17/2012 09:05	<input type="checkbox"/>
1205797-02	S01	Soil		5/16/2012 12:08	5/17/2012 09:05	<input type="checkbox"/>
1205797-03	E01	Soil		5/16/2012 12:08	5/17/2012 09:05	<input type="checkbox"/>
1205797-04	W01	Soil		5/16/2012 12:08	5/17/2012 09:05	<input type="checkbox"/>
1205797-05	Landfarm 01	Soil		5/16/2012 13:16	5/17/2012 09:05	<input type="checkbox"/>
1205797-06	Background 01	Soil		5/16/2012 13:32	5/17/2012 09:05	<input type="checkbox"/>
1205797-07	Background 02	Soil		5/16/2012 13:32	5/17/2012 09:05	<input type="checkbox"/>
1205797-08	Background 03	Soil		5/16/2012 13:32	5/17/2012 09:05	<input type="checkbox"/>
1205797-09	Background 04	Soil		5/16/2012 13:32	5/17/2012 09:05	<input type="checkbox"/>
1205797-10	B01	Soil		5/16/2012 12:08	5/17/2012 09:05	<input type="checkbox"/>
1205797-11	Trip Blank	Water		5/16/2012	5/17/2012 09:05	<input type="checkbox"/>

ALS Environmental

Date: 30-May-12

Client: Noble Energy

Project: 7N

Work Order: 1205797

Case Narrative

Batch 61273, Metals, Sample 1205824-01C: MS/MSD recoveries and RPD are for an unrelated sample.

Batch R128117, BTEX, Sample 1205678-02A: MS/MSD recoveries are for an unrelated sample.

ALS Environmental

Date: 29-May-12

Client: Noble Energy

Project: 7N

Sample ID: N01

Collection Date: 5/16/2012 12:08 PM

Work Order: 1205797

Lab ID: 1205797-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
TPH AND MISCELLANEOUS GCFID			SW8015M				Analyst: KMB
DRO (>C10 - C28)	2.7		1.7	mg/Kg	1	5/23/2012	5/23/2012 10:55 AM
Surr: 2-Fluorobiphenyl	78.2		60-135	%REC	1	5/23/2012	5/23/2012 10:55 AM
GASOLINE RANGE ORGANICS - SW8015C			SW8015				Analyst: SMA
Gasoline Range Organics	ND		0.050	mg/Kg	1		5/24/2012 11:59 AM
Surr: 4-Bromofluorobenzene	87.4		70-130	%REC	1		5/24/2012 11:59 AM
TRIVALENT CHROMIUM			CALCULATION				Analyst: SKS
Chromium, Trivalent	5.93		5.00	mg/Kg	1		5/25/2012
MERCURY - SW7471B			SW7471A				Analyst: JCJ
Mercury	0.0297		0.00347	mg/Kg	1	5/23/2012	5/23/2012 06:46 PM
METALS			SW6020				Analyst: ALR
Arsenic	1.54		0.471	mg/Kg	1	5/22/2012	5/23/2012 10:35 PM
Barium	2,070		94.2	mg/Kg	200	5/22/2012	5/24/2012 07:37 PM
Cadmium	ND		0.471	mg/Kg	1	5/22/2012	5/23/2012 10:35 PM
Chromium	5.93		0.471	mg/Kg	1	5/22/2012	5/23/2012 10:35 PM
Copper	14.9		0.471	mg/Kg	1	5/22/2012	5/23/2012 10:35 PM
Lead	7.38		0.471	mg/Kg	1	5/22/2012	5/23/2012 10:35 PM
Nickel	9.07		0.471	mg/Kg	1	5/22/2012	5/23/2012 10:35 PM
Selenium	1.18		0.471	mg/Kg	1	5/22/2012	5/23/2012 10:35 PM
Silver	ND		0.471	mg/Kg	1	5/22/2012	5/23/2012 10:35 PM
Zinc	38.4		0.471	mg/Kg	1	5/22/2012	5/23/2012 10:35 PM
LOW-LEVEL PAHS			SW8270				Analyst: LG
Acenaphthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Anthracene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Benz(a)anthracene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Benzo(a)pyrene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Benzo(b)fluoranthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Benzo(k)fluoranthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Chrysene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Dibenz(a,h)anthracene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Fluoranthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Fluorene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Indeno(1,2,3-cd)pyrene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Naphthalene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Pyrene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:30 PM
Surr: 2-Fluorobiphenyl	73.7		43-125	%REC	1	5/23/2012	5/23/2012 09:30 PM
Surr: 4-Terphenyl-d14	88.6		32-125	%REC	1	5/23/2012	5/23/2012 09:30 PM
Surr: Nitrobenzene-d5	69.6		37-125	%REC	1	5/23/2012	5/23/2012 09:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 29-May-12**Client:** Noble Energy**Project:** 7N**Work Order:** 1205797**Sample ID:** N01**Lab ID:** 1205797-01**Collection Date:** 5/16/2012 12:08 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
VOLATILES			SW8260				Analyst: WLR
Benzene	ND		0.0050	mg/Kg	1		5/21/2012 04:36 PM
Ethylbenzene	ND		0.0050	mg/Kg	1		5/21/2012 04:36 PM
m,p-Xylene	ND		0.010	mg/Kg	1		5/21/2012 04:36 PM
o-Xylene	ND		0.0050	mg/Kg	1		5/21/2012 04:36 PM
Toluene	ND		0.0050	mg/Kg	1		5/21/2012 04:36 PM
Xylenes, Total	ND		0.015	mg/Kg	1		5/21/2012 04:36 PM
Surr: 1,2-Dichloroethane-d4	93.0		70-128	%REC	1		5/21/2012 04:36 PM
Surr: 4-Bromofluorobenzene	99.4		73-126	%REC	1		5/21/2012 04:36 PM
Surr: Dibromofluoromethane	97.7		71-128	%REC	1		5/21/2012 04:36 PM
Surr: Toluene-d8	97.1		73-127	%REC	1		5/21/2012 04:36 PM
HEXAVALENT CHROMIUM			SW7196				Analyst: IAB
Chromium, Hexavalent	ND		2.00	mg/Kg	1	5/25/2012	5/25/2012 03:00 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 29-May-12

Client: Noble Energy

Project: 7N

Sample ID: S01

Collection Date: 5/16/2012 12:08 PM

Work Order: 1205797

Lab ID: 1205797-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
TPH AND MISCELLANEOUS GCFID			SW8015M				Analyst: KMB
DRO (>C10 - C28)	5.1		1.7	mg/Kg	1	5/23/2012	5/23/2012 11:16 AM
Surr: 2-Fluorobiphenyl	86.4		60-135	%REC	1	5/23/2012	5/23/2012 11:16 AM
GASOLINE RANGE ORGANICS - SW8015C			SW8015				Analyst: SMA
Gasoline Range Organics	0.057		0.050	mg/Kg	1		5/24/2012 12:16 PM
Surr: 4-Bromofluorobenzene	74.0		70-130	%REC	1		5/24/2012 12:16 PM
TRIVALENT CHROMIUM			CALCULATION				Analyst: SKS
Chromium, Trivalent	7.23		5.00	mg/Kg	1		5/25/2012
MERCURY - SW7471B			SW7471A				Analyst: JCJ
Mercury	0.0743		0.00353	mg/Kg	1	5/23/2012	5/23/2012 06:32 PM
METALS			SW6020				Analyst: ALR
Arsenic	1.71		0.442	mg/Kg	1	5/22/2012	5/23/2012 10:40 PM
Barium	569		44.2	mg/Kg	100	5/22/2012	5/24/2012 07:42 PM
Cadmium	ND		0.442	mg/Kg	1	5/22/2012	5/23/2012 10:40 PM
Chromium	7.23		0.442	mg/Kg	1	5/22/2012	5/23/2012 10:40 PM
Copper	17.6		0.442	mg/Kg	1	5/22/2012	5/23/2012 10:40 PM
Lead	7.97		0.442	mg/Kg	1	5/22/2012	5/23/2012 10:40 PM
Nickel	11.1		0.442	mg/Kg	1	5/22/2012	5/23/2012 10:40 PM
Selenium	2.08		0.442	mg/Kg	1	5/22/2012	5/23/2012 10:40 PM
Silver	ND		0.442	mg/Kg	1	5/22/2012	5/23/2012 10:40 PM
Zinc	43.5		0.442	mg/Kg	1	5/22/2012	5/23/2012 10:40 PM
LOW-LEVEL PAHS			SW8270				Analyst: LG
Acenaphthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Anthracene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Benz(a)anthracene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Benzo(a)pyrene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Benzo(b)fluoranthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Benzo(k)fluoranthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Chrysene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Dibenz(a,h)anthracene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Fluoranthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Fluorene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Indeno(1,2,3-cd)pyrene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Naphthalene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Pyrene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 09:49 PM
Surr: 2-Fluorobiphenyl	79.1		43-125	%REC	1	5/23/2012	5/23/2012 09:49 PM
Surr: 4-Terphenyl-d14	89.9		32-125	%REC	1	5/23/2012	5/23/2012 09:49 PM
Surr: Nitrobenzene-d5	72.6		37-125	%REC	1	5/23/2012	5/23/2012 09:49 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 29-May-12**Client:** Noble Energy**Project:** 7N**Work Order:** 1205797**Sample ID:** S01**Lab ID:** 1205797-02**Collection Date:** 5/16/2012 12:08 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
VOLATILES			SW8260				Analyst: WLR
Benzene	ND		0.0050	mg/Kg	1		5/21/2012 05:03 PM
Ethylbenzene	ND		0.0050	mg/Kg	1		5/21/2012 05:03 PM
m,p-Xylene	ND		0.010	mg/Kg	1		5/21/2012 05:03 PM
o-Xylene	ND		0.0050	mg/Kg	1		5/21/2012 05:03 PM
Toluene	ND		0.0050	mg/Kg	1		5/21/2012 05:03 PM
Xylenes, Total	ND		0.015	mg/Kg	1		5/21/2012 05:03 PM
Surr: 1,2-Dichloroethane-d4	86.8		70-128	%REC	1		5/21/2012 05:03 PM
Surr: 4-Bromofluorobenzene	98.0		73-126	%REC	1		5/21/2012 05:03 PM
Surr: Dibromofluoromethane	95.5		71-128	%REC	1		5/21/2012 05:03 PM
Surr: Toluene-d8	95.6		73-127	%REC	1		5/21/2012 05:03 PM
HEXAVALENT CHROMIUM			SW7196				Analyst: IAB
Chromium, Hexavalent	ND		2.00	mg/Kg	1	5/25/2012	5/25/2012 03:00 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 29-May-12

Client: Noble Energy

Project: 7N

Sample ID: E01

Collection Date: 5/16/2012 12:08 PM

Work Order: 1205797

Lab ID: 1205797-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
TPH AND MISCELLANEOUS GCFID			SW8015M				Analyst: KMB
DRO (>C10 - C28)	ND		1.7 mg/Kg		1	5/23/2012	5/23/2012 11:37 AM
Surr: 2-Fluorobiphenyl	74.8		60-135 %REC		1	5/23/2012	5/23/2012 11:37 AM
GASOLINE RANGE ORGANICS - SW8015C			SW8015				Analyst: SMA
Gasoline Range Organics	ND		0.050 mg/Kg		1		5/24/2012 12:34 PM
Surr: 4-Bromofluorobenzene	102		70-130 %REC		1		5/24/2012 12:34 PM
TRIVALENT CHROMIUM			CALCULATION				Analyst: SKS
Chromium, Trivalent	8.45		5.00 mg/Kg		1		5/25/2012
MERCURY - SW7471B			SW7471A				Analyst: JCJ
Mercury	0.0613		0.00362 mg/Kg		1	5/23/2012	5/23/2012 06:48 PM
METALS			SW6020				Analyst: ALR
Arsenic	1.88		0.456 mg/Kg		1	5/22/2012	5/23/2012 11:06 PM
Barium	251		22.8 mg/Kg		50	5/22/2012	5/24/2012 07:46 PM
Cadmium	ND		0.456 mg/Kg		1	5/22/2012	5/23/2012 11:06 PM
Chromium	8.45		0.456 mg/Kg		1	5/22/2012	5/23/2012 11:06 PM
Copper	23.2		0.456 mg/Kg		1	5/22/2012	5/23/2012 11:06 PM
Lead	8.85		0.456 mg/Kg		1	5/22/2012	5/23/2012 11:06 PM
Nickel	14.6		0.456 mg/Kg		1	5/22/2012	5/23/2012 11:06 PM
Selenium	1.95		0.456 mg/Kg		1	5/22/2012	5/23/2012 11:06 PM
Silver	ND		0.456 mg/Kg		1	5/22/2012	5/23/2012 11:06 PM
Zinc	54.7		0.456 mg/Kg		1	5/22/2012	5/23/2012 11:06 PM
LOW-LEVEL PAHS			SW8270				Analyst: LG
Acenaphthene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Anthracene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Benz(a)anthracene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Benzo(a)pyrene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Benzo(b)fluoranthene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Benzo(k)fluoranthene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Chrysene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Dibenz(a,h)anthracene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Fluoranthene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Fluorene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Indeno(1,2,3-cd)pyrene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Naphthalene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Pyrene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:41 PM
Surr: 2-Fluorobiphenyl	77.2		43-125 %REC		1	5/23/2012	5/23/2012 11:41 PM
Surr: 4-Terphenyl-d14	86.8		32-125 %REC		1	5/23/2012	5/23/2012 11:41 PM
Surr: Nitrobenzene-d5	68.4		37-125 %REC		1	5/23/2012	5/23/2012 11:41 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 29-May-12**Client:** Noble Energy**Project:** 7N**Work Order:** 1205797**Sample ID:** E01**Lab ID:** 1205797-03**Collection Date:** 5/16/2012 12:08 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
VOLATILES			SW8260				Analyst: WLR
Benzene	ND		0.0050	mg/Kg	1		5/21/2012 05:31 PM
Ethylbenzene	ND		0.0050	mg/Kg	1		5/21/2012 05:31 PM
m,p-Xylene	ND		0.010	mg/Kg	1		5/21/2012 05:31 PM
o-Xylene	ND		0.0050	mg/Kg	1		5/21/2012 05:31 PM
Toluene	ND		0.0050	mg/Kg	1		5/21/2012 05:31 PM
Xylenes, Total	ND		0.015	mg/Kg	1		5/21/2012 05:31 PM
Surr: 1,2-Dichloroethane-d4	88.0		70-128	%REC	1		5/21/2012 05:31 PM
Surr: 4-Bromofluorobenzene	97.5		73-126	%REC	1		5/21/2012 05:31 PM
Surr: Dibromofluoromethane	92.9		71-128	%REC	1		5/21/2012 05:31 PM
Surr: Toluene-d8	96.2		73-127	%REC	1		5/21/2012 05:31 PM
HEXAVALENT CHROMIUM			SW7196				Analyst: IAB
Chromium, Hexavalent	ND		2.00	mg/Kg	1	5/25/2012	5/25/2012 03:00 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 29-May-12

Client: Noble Energy

Project: 7N

Sample ID: W01

Collection Date: 5/16/2012 12:08 PM

Work Order: 1205797

Lab ID: 1205797-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
TPH AND MISCELLANEOUS GCFID			SW8015M				Analyst: KMB
DRO (>C10 - C28)	2.6		1.7	mg/Kg	1	5/23/2012	5/23/2012 10:13 AM
Surr: 2-Fluorobiphenyl	76.0		60-135	%REC	1	5/23/2012	5/23/2012 10:13 AM
GASOLINE RANGE ORGANICS - SW8015C			SW8015				Analyst: SMA
Gasoline Range Organics	0.32		0.050	mg/Kg	1		5/24/2012 12:52 PM
Surr: 4-Bromofluorobenzene	103		70-130	%REC	1		5/24/2012 12:52 PM
TRIVALENT CHROMIUM			CALCULATION				Analyst: SKS
Chromium, Trivalent	9.14		5.00	mg/Kg	1		5/25/2012
MERCURY - SW7471B			SW7471A				Analyst: JCJ
Mercury	0.0571		0.00361	mg/Kg	1	5/23/2012	5/23/2012 06:50 PM
METALS			SW6020				Analyst: ALR
Arsenic	2.02		0.448	mg/Kg	1	5/22/2012	5/23/2012 11:11 PM
Barium	424		44.8	mg/Kg	100	5/22/2012	5/24/2012 07:51 PM
Cadmium	ND		0.448	mg/Kg	1	5/22/2012	5/23/2012 11:11 PM
Chromium	9.14		0.448	mg/Kg	1	5/22/2012	5/23/2012 11:11 PM
Copper	19.0		0.448	mg/Kg	1	5/22/2012	5/23/2012 11:11 PM
Lead	8.82		0.448	mg/Kg	1	5/22/2012	5/23/2012 11:11 PM
Nickel	16.9		0.448	mg/Kg	1	5/22/2012	5/23/2012 11:11 PM
Selenium	2.22		0.448	mg/Kg	1	5/22/2012	5/23/2012 11:11 PM
Silver	ND		0.448	mg/Kg	1	5/22/2012	5/23/2012 11:11 PM
Zinc	61.7		0.448	mg/Kg	1	5/22/2012	5/23/2012 11:11 PM
LOW-LEVEL PAHS			SW8270				Analyst: LG
Acenaphthene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Anthracene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Benz(a)anthracene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Benzo(a)pyrene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Benzo(b)fluoranthene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Benzo(k)fluoranthene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Chrysene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Dibenz(a,h)anthracene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Fluoranthene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Fluorene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Indeno(1,2,3-cd)pyrene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Naphthalene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Pyrene	ND		0.0064	mg/Kg	1	5/23/2012	5/23/2012 10:26 PM
Surr: 2-Fluorobiphenyl	64.6		43-125	%REC	1	5/23/2012	5/23/2012 10:26 PM
Surr: 4-Terphenyl-d14	85.0		32-125	%REC	1	5/23/2012	5/23/2012 10:26 PM
Surr: Nitrobenzene-d5	55.8		37-125	%REC	1	5/23/2012	5/23/2012 10:26 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 29-May-12**Client:** Noble Energy**Project:** 7N**Work Order:** 1205797**Sample ID:** W01**Lab ID:** 1205797-04**Collection Date:** 5/16/2012 12:08 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
VOLATILES			SW8260				Analyst: WLR
Benzene	ND		0.0050	mg/Kg	1		5/21/2012 05:59 PM
Ethylbenzene	ND		0.0050	mg/Kg	1		5/21/2012 05:59 PM
m,p-Xylene	ND		0.010	mg/Kg	1		5/21/2012 05:59 PM
o-Xylene	ND		0.0050	mg/Kg	1		5/21/2012 05:59 PM
Toluene	ND		0.0050	mg/Kg	1		5/21/2012 05:59 PM
Xylenes, Total	ND		0.015	mg/Kg	1		5/21/2012 05:59 PM
Surr: 1,2-Dichloroethane-d4	92.3		70-128	%REC	1		5/21/2012 05:59 PM
Surr: 4-Bromofluorobenzene	97.7		73-126	%REC	1		5/21/2012 05:59 PM
Surr: Dibromofluoromethane	98.2		71-128	%REC	1		5/21/2012 05:59 PM
Surr: Toluene-d8	95.3		73-127	%REC	1		5/21/2012 05:59 PM
HEXAVALENT CHROMIUM			SW7196				Analyst: IAB
Chromium, Hexavalent	ND		2.00	mg/Kg	1	5/25/2012	5/25/2012 03:00 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 29-May-12

Client: Noble Energy

Project: 7N

Sample ID: Landfarm 01

Collection Date: 5/16/2012 01:16 PM

Work Order: 1205797

Lab ID: 1205797-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
TPH AND MISCELLANEOUS GCFID			SW8015M				Analyst: KMB
DRO (>C10 - C28)	8.8		1.7	mg/Kg	1	5/23/2012	5/23/2012 10:34 AM
Surr: 2-Fluorobiphenyl	74.8		60-135	%REC	1	5/23/2012	5/23/2012 10:34 AM
GASOLINE RANGE ORGANICS - SW8015C			SW8015				Analyst: SMA
Gasoline Range Organics	ND		0.050	mg/Kg	1		5/24/2012 01:10 PM
Surr: 4-Bromofluorobenzene	76.5		70-130	%REC	1		5/24/2012 01:10 PM
TRIVALENT CHROMIUM			CALCULATION				Analyst: SKS
Chromium, Trivalent	5.97		5.00	mg/Kg	1		5/25/2012
MERCURY - SW7471B			SW7471A				Analyst: JCJ
Mercury	0.0318		0.00342	mg/Kg	1	5/23/2012	5/23/2012 06:52 PM
METALS			SW6020				Analyst: ALR
Arsenic	1.70		0.462	mg/Kg	1	5/22/2012	5/23/2012 11:15 PM
Barium	492		46.2	mg/Kg	100	5/22/2012	5/24/2012 07:55 PM
Cadmium	ND		0.462	mg/Kg	1	5/22/2012	5/23/2012 11:15 PM
Chromium	5.97		0.462	mg/Kg	1	5/22/2012	5/23/2012 11:15 PM
Copper	15.0		0.462	mg/Kg	1	5/22/2012	5/23/2012 11:15 PM
Lead	6.47		0.462	mg/Kg	1	5/22/2012	5/23/2012 11:15 PM
Nickel	9.59		0.462	mg/Kg	1	5/22/2012	5/23/2012 11:15 PM
Selenium	1.40		0.462	mg/Kg	1	5/22/2012	5/23/2012 11:15 PM
Silver	ND		0.462	mg/Kg	1	5/22/2012	5/23/2012 11:15 PM
Zinc	37.5		0.462	mg/Kg	1	5/22/2012	5/23/2012 11:15 PM
LOW-LEVEL PAHS			SW8270				Analyst: LG
Acenaphthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Anthracene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Benz(a)anthracene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Benzo(a)pyrene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Benzo(b)fluoranthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Benzo(k)fluoranthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Chrysene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Dibenz(a,h)anthracene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Fluoranthene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Fluorene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Indeno(1,2,3-cd)pyrene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Naphthalene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Pyrene	ND		0.0066	mg/Kg	1	5/23/2012	5/23/2012 10:45 PM
Surr: 2-Fluorobiphenyl	75.4		43-125	%REC	1	5/23/2012	5/23/2012 10:45 PM
Surr: 4-Terphenyl-d14	84.6		32-125	%REC	1	5/23/2012	5/23/2012 10:45 PM
Surr: Nitrobenzene-d5	68.5		37-125	%REC	1	5/23/2012	5/23/2012 10:45 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 29-May-12**Client:** Noble Energy**Project:** 7N**Work Order:** 1205797**Sample ID:** Landfarm 01**Lab ID:** 1205797-05**Collection Date:** 5/16/2012 01:16 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
VOLATILES			SW8260				Analyst: WLR
Benzene	ND		0.0050	mg/Kg	1		5/21/2012 06:27 PM
Ethylbenzene	ND		0.0050	mg/Kg	1		5/21/2012 06:27 PM
m,p-Xylene	ND		0.010	mg/Kg	1		5/21/2012 06:27 PM
o-Xylene	ND		0.0050	mg/Kg	1		5/21/2012 06:27 PM
Toluene	ND		0.0050	mg/Kg	1		5/21/2012 06:27 PM
Xylenes, Total	ND		0.015	mg/Kg	1		5/21/2012 06:27 PM
Surr: 1,2-Dichloroethane-d4	91.5		70-128	%REC	1		5/21/2012 06:27 PM
Surr: 4-Bromofluorobenzene	98.0		73-126	%REC	1		5/21/2012 06:27 PM
Surr: Dibromofluoromethane	97.2		71-128	%REC	1		5/21/2012 06:27 PM
Surr: Toluene-d8	96.6		73-127	%REC	1		5/21/2012 06:27 PM
HEXAVALENT CHROMIUM			SW7196				Analyst: IAB
Chromium, Hexavalent	ND		2.00	mg/Kg	1	5/25/2012	5/25/2012 03:00 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 29-May-12

Client: Noble Energy

Project: 7N

Sample ID: Background 01

Collection Date: 5/16/2012 01:32 PM

Work Order: 1205797

Lab ID: 1205797-06

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
METALS			SW6020				Analyst: ALR
Arsenic	3.28		0.449 mg/Kg		1	5/22/2012	5/23/2012 11:19 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 29-May-12

Client: Noble Energy

Project: 7N

Sample ID: Background 02

Collection Date: 5/16/2012 01:32 PM

Work Order: 1205797

Lab ID: 1205797-07

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
METALS			SW6020				Analyst: ALR
Arsenic	4.96		0.442 mg/Kg		1	5/22/2012	5/23/2012 11:24 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 29-May-12

Client: Noble Energy

Project: 7N

Sample ID: Background 03

Collection Date: 5/16/2012 01:32 PM

Work Order: 1205797

Lab ID: 1205797-08

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
METALS			SW6020				Analyst: ALR
Arsenic	5.25		0.967	mg/Kg	2	5/22/2012	5/24/2012 08:33 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 29-May-12

Client: Noble Energy

Project: 7N

Sample ID: Background 04

Collection Date: 5/16/2012 01:32 PM

Work Order: 1205797

Lab ID: 1205797-09

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
METALS			SW6020				Analyst: ALR
Arsenic	4.87		0.900	mg/Kg	2	5/22/2012	5/24/2012 08:37 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 29-May-12

Client: Noble Energy

Project: 7N

Sample ID: B01

Collection Date: 5/16/2012 12:08 PM

Work Order: 1205797

Lab ID: 1205797-10

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
TPH AND MISCELLANEOUS GCFID			SW8015M				Analyst: KMB
DRO (>C10 - C28)	1.7		1.7 mg/Kg		1	5/23/2012	5/23/2012 02:55 PM
Surr: 2-Fluorobiphenyl	63.5		60-135 %REC		1	5/23/2012	5/23/2012 02:55 PM
GASOLINE RANGE ORGANICS - SW8015C			SW8015				Analyst: SMA
Gasoline Range Organics	0.17		0.050 mg/Kg		1		5/24/2012 01:28 PM
Surr: 4-Bromofluorobenzene	90.0		70-130 %REC		1		5/24/2012 01:28 PM
TRIVALENT CHROMIUM			CALCULATION				Analyst: SKS
Chromium, Trivalent	7.12		5.00 mg/Kg		1		5/25/2012
MERCURY - SW7471B			SW7471A				Analyst: JCJ
Mercury	0.0485		0.00356 mg/Kg		1	5/23/2012	5/23/2012 06:58 PM
METALS			SW6020				Analyst: ALR
Arsenic	2.26		0.451 mg/Kg		1	5/22/2012	5/24/2012 08:42 PM
Barium	353		22.5 mg/Kg		50	5/22/2012	5/24/2012 08:00 PM
Cadmium	ND		0.451 mg/Kg		1	5/22/2012	5/24/2012 08:42 PM
Chromium	7.12		0.451 mg/Kg		1	5/22/2012	5/24/2012 08:42 PM
Copper	17.5		0.451 mg/Kg		1	5/22/2012	5/24/2012 08:42 PM
Lead	11.0		0.451 mg/Kg		1	5/22/2012	5/24/2012 08:42 PM
Nickel	8.49		0.451 mg/Kg		1	5/22/2012	5/24/2012 08:42 PM
Selenium	1.60		0.451 mg/Kg		1	5/22/2012	5/24/2012 08:42 PM
Silver	ND		0.451 mg/Kg		1	5/22/2012	5/24/2012 08:42 PM
Zinc	41.5		0.451 mg/Kg		1	5/22/2012	5/24/2012 08:42 PM
LOW-LEVEL PAHS			SW8270				Analyst: LG
Acenaphthene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Anthracene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Benz(a)anthracene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Benzo(a)pyrene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Benzo(b)fluoranthene	0.016		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Benzo(k)fluoranthene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Chrysene	0.010		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Dibenz(a,h)anthracene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Fluoranthene	0.0087		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Fluorene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Indeno(1,2,3-cd)pyrene	0.0086		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Naphthalene	0.0083		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Pyrene	ND		0.0066 mg/Kg		1	5/23/2012	5/23/2012 11:04 PM
Surr: 2-Fluorobiphenyl	78.4		43-125 %REC		1	5/23/2012	5/23/2012 11:04 PM
Surr: 4-Terphenyl-d14	88.2		32-125 %REC		1	5/23/2012	5/23/2012 11:04 PM
Surr: Nitrobenzene-d5	70.4		37-125 %REC		1	5/23/2012	5/23/2012 11:04 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental**Date:** 29-May-12**Client:** Noble Energy**Project:** 7N**Sample ID:** B01**Collection Date:** 5/16/2012 12:08 PM**Work Order:** 1205797**Lab ID:** 1205797-10**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
VOLATILES			SW8260				Analyst: WLR
Benzene	ND		0.0050	mg/Kg	1		5/21/2012 06:55 PM
Ethylbenzene	ND		0.0050	mg/Kg	1		5/21/2012 06:55 PM
m,p-Xylene	ND		0.010	mg/Kg	1		5/21/2012 06:55 PM
o-Xylene	ND		0.0050	mg/Kg	1		5/21/2012 06:55 PM
Toluene	ND		0.0050	mg/Kg	1		5/21/2012 06:55 PM
Xylenes, Total	ND		0.015	mg/Kg	1		5/21/2012 06:55 PM
Surr: 1,2-Dichloroethane-d4	97.4		70-128	%REC	1		5/21/2012 06:55 PM
Surr: 4-Bromofluorobenzene	101		73-126	%REC	1		5/21/2012 06:55 PM
Surr: Dibromofluoromethane	100		71-128	%REC	1		5/21/2012 06:55 PM
Surr: Toluene-d8	95.0		73-127	%REC	1		5/21/2012 06:55 PM
HEXAVALENT CHROMIUM			SW7196				Analyst: IAB
Chromium, Hexavalent	ND		2.00	mg/Kg	1	5/25/2012	5/25/2012 03:00 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 29-May-12

Client: Noble Energy
Work Order: 1205797
Project: 7N

QC BATCH REPORT

Batch ID: **61295** Instrument ID **FID-7** Method: **SW8015M**

MBLK	Sample ID: FBLKS1-120523-61295				Units: mg/Kg		Analysis Date: 5/23/2012 10:13 AM			
Client ID:	Run ID: FID-7_120523A				SeqNo: 2791860		Prep Date: 5/23/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	ND	1.7								
<i>Surr: 2-Fluorobiphenyl</i>	3.465	0	3.3	0	105	60-135	0			

LCS	Sample ID: FLCSS1-120523-61295				Units: mg/Kg		Analysis Date: 5/23/2012 10:34 AM			
Client ID:	Run ID: FID-7_120523A				SeqNo: 2791861		Prep Date: 5/23/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	36.27	1.7	33.3	0	109	70-130	0			
<i>Surr: 2-Fluorobiphenyl</i>	3.864	0	3.3	0	117	60-135	0			

MS	Sample ID: 1205809-02AMS				Units: mg/Kg		Analysis Date: 5/23/2012 12:26 PM			
Client ID:	Run ID: FID-7_120523A				SeqNo: 2791866		Prep Date: 5/23/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	40.46	1.7	33.28	0.5535	120	70-130	0			
<i>Surr: 2-Fluorobiphenyl</i>	3.455	0	3.298	0	105	60-135	0			

MSD	Sample ID: 1205809-02AMSD				Units: mg/Kg		Analysis Date: 5/23/2012 12:47 PM			
Client ID:	Run ID: FID-7_120523A				SeqNo: 2791867		Prep Date: 5/23/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	36.02	1.7	33.29	0.5535	107	70-130	40.46	11.6	30	
<i>Surr: 2-Fluorobiphenyl</i>	3.139	0	3.299	0	95.1	60-135	3.455	9.6	30	

The following samples were analyzed in this batch:

1205797-01D	1205797-02D	1205797-03D
1205797-04D	1205797-05D	1205797-10D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 10

Client: Noble Energy
 Work Order: 1205797
 Project: 7N

QC BATCH REPORT

Batch ID: **R128507** Instrument ID **FID-9** Method: **SW8015**

MBLK	Sample ID: GBLKS1-120524-R128507				Units: mg/Kg		Analysis Date: 5/24/2012 10:30 AM			
Client ID:	Run ID: FID-9_120524A				SeqNo: 2796486		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	ND	0.050								
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.08434</i>	<i>0.0050</i>	<i>0.1</i>	<i>0</i>	<i>84.3</i>	<i>70-130</i>	<i>0</i>			

LCS	Sample ID: GLCSS1-120524-R128507				Units: mg/Kg		Analysis Date: 5/24/2012 09:54 AM			
Client ID:	Run ID: FID-9_120524A				SeqNo: 2796484		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9204	0.050	1	0	92	70-130	0			
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.075</i>	<i>0.0050</i>	<i>0.1</i>	<i>0</i>	<i>75</i>	<i>70-130</i>	<i>0</i>			

LCSD	Sample ID: GLCSDS1-120524-R128507				Units: mg/Kg		Analysis Date: 5/24/2012 10:12 AM			
Client ID:	Run ID: FID-9_120524A				SeqNo: 2796485		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9644	0.050	1	0	96.4	70-130	0.9204	4.67	30	
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.07687</i>	<i>0.0050</i>	<i>0.1</i>	<i>0</i>	<i>76.9</i>	<i>70-130</i>	<i>0.075</i>	<i>2.47</i>	<i>30</i>	

MS	Sample ID: 1205797-03BMS				Units: mg/Kg		Analysis Date: 5/24/2012 02:28 PM			
Client ID: E01	Run ID: FID-9_120524A				SeqNo: 2796494		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9279	0.050	1	0	92.8	70-130	0			
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.07788</i>	<i>0.0050</i>	<i>0.1</i>	<i>0</i>	<i>77.9</i>	<i>70-130</i>	<i>0</i>			

MSD	Sample ID: 1205797-03BMSD				Units: mg/Kg		Analysis Date: 5/24/2012 02:46 PM			
Client ID: E01	Run ID: FID-9_120524A				SeqNo: 2796495		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.049	0.050	1	0	105	70-130	0.9279	12.2	30	
<i>Surr: 4-Bromofluorobenzene</i>	<i>0.08655</i>	<i>0.0050</i>	<i>0.1</i>	<i>0</i>	<i>86.6</i>	<i>70-130</i>	<i>0.07788</i>	<i>10.5</i>	<i>30</i>	

The following samples were analyzed in this batch:

1205797-01B	1205797-02B	1205797-03B
1205797-04B	1205797-05B	1205797-10B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Noble Energy
 Work Order: 1205797
 Project: 7N

QC BATCH REPORT

Batch ID: **61273** Instrument ID **ICPMS03** Method: **SW6020**

MBLK	Sample ID: MBLKS3-052212-61273				Units: mg/Kg		Analysis Date: 5/23/2012 03:36 PM			
Client ID:	Run ID: ICPMS03_120523A				SeqNo: 2791919		Prep Date: 5/22/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.50								
Barium	0.2197	0.50								J
Cadmium	ND	0.50								
Chromium	ND	0.50								
Copper	ND	0.50								
Lead	ND	0.50								
Nickel	ND	0.50								
Selenium	ND	0.50								
Silver	ND	0.50								
Zinc	ND	0.50								

LCS	Sample ID: MLCSS3-052212-61273				Units: mg/Kg		Analysis Date: 5/23/2012 03:05 PM			
Client ID:	Run ID: ICPMS03_120523A				SeqNo: 2791909		Prep Date: 5/22/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	9.277	0.50	10	0	92.8	80-120	0			
Barium	9.657	0.50	10	0	96.6	80-120	0			
Cadmium	9.583	0.50	10	0	95.8	80-120	0			
Chromium	9.556	0.50	10	0	95.6	80-120	0			
Copper	9.505	0.50	10	0	95	80-120	0			
Lead	9.715	0.50	10	0	97.2	80-120	0			
Nickel	9.4	0.50	10	0	94	80-120	0			
Selenium	9.458	0.50	10	0	94.6	80-120	0			
Silver	9.513	0.50	10	0	95.1	80-120	0			
Zinc	9.353	0.50	10	0	93.5	80-120	0			

MS	Sample ID: 1205824-01CMS				Units: mg/Kg		Analysis Date: 5/23/2012 07:55 PM			
Client ID:	Run ID: ICPMS03_120523A				SeqNo: 2792850		Prep Date: 5/22/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.34	0.46	9.162	3.326	87.5	75-125	0			
Barium	977.6	0.46	9.162	271.6	7710	75-125	0			SEO
Cadmium	8.553	0.46	9.162	0.2206	91	75-125	0			
Chromium	20.22	0.46	9.162	10.99	101	75-125	0			
Copper	18.71	0.46	9.162	10.13	93.7	75-125	0			
Lead	17.47	0.46	9.162	8.967	92.8	75-125	0			
Nickel	20.16	0.46	9.162	11.72	92.1	75-125	0			
Selenium	9.14	0.46	9.162	1.22	86.4	75-125	0			
Silver	7.729	0.46	9.162	0.005842	84.3	75-125	0			
Zinc	49.02	0.46	9.162	38.23	118	75-125	0			O

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Noble Energy
 Work Order: 1205797
 Project: 7N

QC BATCH REPORT

Batch ID: **61273** Instrument ID **ICPMS03** Method: **SW6020**

MSD		Sample ID: 1205824-01CMSD				Units: mg/Kg		Analysis Date: 5/23/2012 08:00 PM		
Client ID:		Run ID: ICPMS03_120523A				SeqNo: 2792851		Prep Date: 5/22/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	10.95	0.45	9.042	3.326	84.3	75-125	11.34	3.52	25	
Barium	269.2	0.45	9.042	271.6	-26.4	75-125	977.6	114	25	SREO
Cadmium	8.08	0.45	9.042	0.2206	86.9	75-125	8.553	5.69	25	
Chromium	23.5	0.45	9.042	10.99	138	75-125	20.22	15	25	S
Copper	18.07	0.45	9.042	10.13	87.8	75-125	18.71	3.49	25	
Lead	17.18	0.45	9.042	8.967	90.8	75-125	17.47	1.68	25	
Nickel	20.04	0.45	9.042	11.72	92	75-125	20.16	0.631	25	
Selenium	9	0.45	9.042	1.22	86	75-125	9.14	1.54	25	
Silver	7.617	0.45	9.042	0.005842	84.2	75-125	7.729	1.45	25	
Zinc	46.53	0.45	9.042	38.23	91.8	75-125	49.02	5.22	25	O

DUP		Sample ID: 1205824-01CDUP				Units: mg/Kg		Analysis Date: 5/23/2012 07:46 PM		
Client ID:		Run ID: ICPMS03_120523A				SeqNo: 2792848		Prep Date: 5/22/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	3.358	0.46	0	0	0	0-0	3.326	0.978	25	
Cadmium	0.242	0.46	0	0	0	0-0	0.2206	0	25	J
Chromium	11.43	0.46	0	0	0	0-0	10.99	3.92	25	
Copper	10.72	0.46	0	0	0	0-0	10.13	5.67	25	
Lead	9.257	0.46	0	0	0	0-0	8.967	3.19	25	
Nickel	12.21	0.46	0	0	0	0-0	11.72	4.1	25	
Selenium	1.294	0.46	0	0	0	0-0	1.22	5.95	25	
Silver	ND	0.46	0	0	0	0-0	0.005842	0	25	
Zinc	39.14	0.46	0	0	0	0-0	38.23	2.36	25	

DUP		Sample ID: 1205824-01CDUP				Units: mg/Kg		Analysis Date: 5/24/2012 01:56 PM		
Client ID:		Run ID: ICPMS03_120524A				SeqNo: 2793707		Prep Date: 5/22/2012		DF: 50
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	294.6	23	0	0	0	0-0	252	15.6	25	

The following samples were analyzed in this batch:

1205797-01C	1205797-02C	1205797-03C
1205797-04C	1205797-05C	1205797-06A
1205797-07A	1205797-08A	1205797-09A
1205797-10C		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Noble Energy
 Work Order: 1205797
 Project: 7N

QC BATCH REPORT

Batch ID: **61304** Instrument ID **HG02** Method: **SW7471A**

MBLK	Sample ID: GBLKS3-052312-61304				Units: µg/Kg		Analysis Date: 5/23/2012 06:25 PM			
Client ID:	Run ID: HG02_120523A				SeqNo: 2792636		Prep Date: 5/23/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	3.3								

LCS	Sample ID: GLCSS3-052312-61304				Units: µg/Kg		Analysis Date: 5/23/2012 06:27 PM			
Client ID:	Run ID: HG02_120523A				SeqNo: 2792637		Prep Date: 5/23/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	332.7	3.3	333.3	0	99.8	85-115	0			

MS	Sample ID: 1205797-02CMS				Units: µg/Kg		Analysis Date: 5/23/2012 06:36 PM			
Client ID: S01	Run ID: HG02_120523A				SeqNo: 2792640		Prep Date: 5/23/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	386.3	3.6	361.7	74.34	86.2	85-115	0			

MSD	Sample ID: 1205797-02CMSD				Units: µg/Kg		Analysis Date: 5/23/2012 06:38 PM			
Client ID: S01	Run ID: HG02_120523A				SeqNo: 2792641		Prep Date: 5/23/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	389.9	3.6	362.3	74.34	87.1	85-115	386.3	0.927	20	

DUP	Sample ID: 1205797-02CDUP				Units: µg/Kg		Analysis Date: 5/23/2012 06:34 PM			
Client ID: S01	Run ID: HG02_120523A				SeqNo: 2792639		Prep Date: 5/23/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	74.15	3.6	0	0	0		74.34	0.246	20	

The following samples were analyzed in this batch:

1205797-01C	1205797-02C	1205797-03C
1205797-04C	1205797-05C	1205797-10C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Noble Energy
 Work Order: 1205797
 Project: 7N

QC BATCH REPORT

Batch ID: **61306** Instrument ID **SV-6** Method: **SW8270**

MBLK		Sample ID: SBLKS1-120523-61306				Units: µg/Kg		Analysis Date: 5/23/2012 05:07 PM		
Client ID:		Run ID: SV-6_120523A				SeqNo: 2792742		Prep Date: 5/23/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.6								
Anthracene	ND	6.6								
Benz(a)anthracene	ND	6.6								
Benzo(a)pyrene	ND	6.6								
Benzo(b)fluoranthene	ND	6.6								
Benzo(k)fluoranthene	ND	6.6								
Chrysene	ND	6.6								
Dibenz(a,h)anthracene	ND	6.6								
Fluoranthene	ND	6.6								
Fluorene	ND	6.6								
Indeno(1,2,3-cd)pyrene	ND	6.6								
Naphthalene	ND	6.6								
Pyrene	ND	6.6								
Surr: 2-Fluorobiphenyl	146.4	6.6	166.7	0	87.9	43-125	0			
Surr: 4-Terphenyl-d14	159.2	6.6	166.7	0	95.5	32-125	0			
Surr: Nitrobenzene-d5	136.7	6.6	166.7	0	82	37-125	0			

LCS		Sample ID: SLCSS1-120523-61306				Units: µg/Kg		Analysis Date: 5/23/2012 05:26 PM		
Client ID:		Run ID: SV-6_120523A				SeqNo: 2792743		Prep Date: 5/23/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	127	6.6	166.7	0	76.2	50-120	0			
Anthracene	148.1	6.6	166.7	0	88.9	50-123	0			
Benz(a)anthracene	157.2	6.6	166.7	0	94.3	50-131	0			
Benzo(a)pyrene	153.1	6.6	166.7	0	91.9	50-130	0			
Benzo(b)fluoranthene	183.1	6.6	166.7	0	110	50-137	0			
Benzo(k)fluoranthene	156.6	6.6	166.7	0	94	50-143	0			
Chrysene	146.7	6.6	166.7	0	88	50-130	0			
Dibenz(a,h)anthracene	157.1	6.6	166.7	0	94.3	50-130	0			
Fluoranthene	151.2	6.6	166.7	0	90.7	50-131	0			
Fluorene	143	6.6	166.7	0	85.8	50-125	0			
Indeno(1,2,3-cd)pyrene	175.2	6.6	166.7	0	105	45-139	0			
Naphthalene	135.1	6.6	166.7	0	81.1	50-125	0			
Pyrene	145.6	6.6	166.7	0	87.4	45-130	0			
Surr: 2-Fluorobiphenyl	146.5	6.6	166.7	0	87.9	43-125	0			
Surr: 4-Terphenyl-d14	159.8	6.6	166.7	0	95.9	32-125	0			
Surr: Nitrobenzene-d5	135.8	6.6	166.7	0	81.5	37-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Noble Energy
 Work Order: 1205797
 Project: 7N

QC BATCH REPORT

Batch ID: **61306** Instrument ID **SV-6** Method: **SW8270**

MS		Sample ID: 1205824-01BMS				Units: µg/Kg		Analysis Date: 5/23/2012 06:03 PM		
Client ID:		Run ID: SV-6_120523A				SeqNo: 2792745		Prep Date: 5/23/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	158.7	6.6	166.1	21.66	82.5	50-120	0			
Anthracene	154.6	6.6	166.1	13.76	84.8	50-123	0			
Benz(a)anthracene	155.8	6.6	166.1	0	93.8	50-131	0			
Benzo(a)pyrene	148.8	6.6	166.1	6.41	85.7	50-130	0			
Benzo(b)fluoranthene	160.1	6.6	166.1	3.912	94	50-137	0			
Benzo(k)fluoranthene	144.2	6.6	166.1	3.477	84.7	50-143	0			
Chrysene	169.6	6.6	166.1	28.9	84.7	50-130	0			
Dibenz(a,h)anthracene	160.1	6.6	166.1	0	96.4	50-130	0			
Fluoranthene	168.7	6.6	166.1	14.73	92.7	50-131	0			
Fluorene	196.7	6.6	166.1	51.37	87.5	50-125	0			
Indeno(1,2,3-cd)pyrene	165.2	6.6	166.1	0	99.4	45-139	0			
Naphthalene	160.5	6.6	166.1	50.43	66.3	50-125	0			
Pyrene	147.7	6.6	166.1	16.96	78.7	45-130	0			
Surr: 2-Fluorobiphenyl	157.4	6.6	166.1	0	94.8	43-125	0			
Surr: 4-Terphenyl-d14	151.2	6.6	166.1	0	91	32-125	0			
Surr: Nitrobenzene-d5	131.1	6.6	166.1	0	78.9	37-125	0			

MSD		Sample ID: 1205824-01BMSD				Units: µg/Kg		Analysis Date: 5/23/2012 06:22 PM		
Client ID:		Run ID: SV-6_120523A				SeqNo: 2792746		Prep Date: 5/23/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	136.9	6.6	166.1	21.66	69.4	50-120	158.7	14.8	30	
Anthracene	153.8	6.6	166.1	13.76	84.3	50-123	154.6	0.521	30	
Benz(a)anthracene	156.3	6.6	166.1	0	94.1	50-131	155.8	0.289	30	
Benzo(a)pyrene	142	6.6	166.1	6.41	81.6	50-130	148.8	4.7	30	
Benzo(b)fluoranthene	159.6	6.6	166.1	3.912	93.8	50-137	160.1	0.285	30	
Benzo(k)fluoranthene	132.2	6.6	166.1	3.477	77.5	50-143	144.2	8.66	30	
Chrysene	166.6	6.6	166.1	28.9	82.9	50-130	169.6	1.81	30	
Dibenz(a,h)anthracene	153	6.6	166.1	0	92.1	50-130	160.1	4.59	30	
Fluoranthene	157.4	6.6	166.1	14.73	85.9	50-131	168.7	6.91	30	
Fluorene	174.6	6.6	166.1	51.37	74.2	50-125	196.7	11.9	30	
Indeno(1,2,3-cd)pyrene	163.2	6.6	166.1	0	98.3	45-139	165.2	1.22	30	
Naphthalene	136.9	6.6	166.1	50.43	52	50-125	160.5	15.9	30	
Pyrene	141.1	6.6	166.1	16.96	74.7	45-130	147.7	4.63	30	
Surr: 2-Fluorobiphenyl	133.3	6.6	166.1	0	80.3	43-125	157.4	16.6	30	
Surr: 4-Terphenyl-d14	160	6.6	166.1	0	96.3	32-125	151.2	5.64	30	
Surr: Nitrobenzene-d5	117.6	6.6	166.1	0	70.8	37-125	131.1	10.9	30	

The following samples were analyzed in this batch:

1205797-01D	1205797-02D	1205797-03D
1205797-04D	1205797-05D	1205797-10D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Noble Energy
 Work Order: 1205797
 Project: 7N

QC BATCH REPORT

Batch ID: R128117 Instrument ID VOA3 Method: SW8260

MBLK	Sample ID: VBLKS1-05212-R128117				Units: µg/Kg		Analysis Date: 5/21/2012 10:09 AM			
Client ID:	Run ID: VOA3_120521A				SeqNo: 2787680		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	5.0								
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10								
o-Xylene	ND	5.0								
Toluene	ND	5.0								
Xylenes, Total	ND	15								
Surr: 1,2-Dichloroethane-d4	41.43	0	50	0	82.9	70-128	0			
Surr: 4-Bromofluorobenzene	48.69	0	50	0	97.4	73-126	0			
Surr: Dibromofluoromethane	46.84	0	50	0	93.7	71-128	0			
Surr: Toluene-d8	47.6	0	50	0	95.2	73-127	0			

LCS	Sample ID: VLCSS1-052112-R128117				Units: µg/Kg		Analysis Date: 5/21/2012 08:16 AM			
Client ID:	Run ID: VOA3_120521A				SeqNo: 2787678		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	55.36	5.0	50	0	111	79-120	0			
Ethylbenzene	55.89	5.0	50	0	112	80-122	0			
m,p-Xylene	116.2	10	100	0	116	79-122	0			
o-Xylene	57.38	5.0	50	0	115	80-123	0			
Toluene	53.75	5.0	50	0	108	79-120	0			
Xylenes, Total	173.5	15	150	0	116	80-120	0			
Surr: 1,2-Dichloroethane-d4	44.31	0	50	0	88.6	70-128	0			
Surr: 4-Bromofluorobenzene	49.46	0	50	0	98.9	73-126	0			
Surr: Dibromofluoromethane	47.93	0	50	0	95.9	71-128	0			
Surr: Toluene-d8	49.74	0	50	0	99.5	73-127	0			

LCSD	Sample ID: VLCSDS1-052112-R128117				Units: µg/Kg		Analysis Date: 5/21/2012 08:44 AM			
Client ID:	Run ID: VOA3_120521A				SeqNo: 2787679		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	50.6	5.0	50	0	101	79-120	55.36	9	30	
Ethylbenzene	51.58	5.0	50	0	103	80-122	55.89	8.04	30	
m,p-Xylene	106.2	10	100	0	106	79-122	116.2	8.99	30	
o-Xylene	52.33	5.0	50	0	105	80-123	57.38	9.2	30	
Toluene	50.53	5.0	50	0	101	79-120	53.75	6.19	30	
Xylenes, Total	158.5	15	150	0	106	80-120	173.5	9.06	30	
Surr: 1,2-Dichloroethane-d4	42.66	0	50	0	85.3	70-128	44.31	3.8	30	
Surr: 4-Bromofluorobenzene	49.79	0	50	0	99.6	73-126	49.46	0.665	30	
Surr: Dibromofluoromethane	47.37	0	50	0	94.7	71-128	47.93	1.18	30	
Surr: Toluene-d8	49.14	0	50	0	98.3	73-127	49.74	1.22	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Noble Energy
 Work Order: 1205797
 Project: 7N

QC BATCH REPORT

Batch ID: **R128117** Instrument ID **VOA3** Method: **SW8260**

MS				Sample ID: 1205678-02AMS			Units: µg/Kg		Analysis Date: 5/21/2012 11:32 AM		
Client ID:		Run ID: VOA3_120521A			SeqNo: 2787683		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	38.09	5.0	50	0	76.2	79-120	0			S	
Ethylbenzene	37.28	5.0	50	0	74.6	80-122	0			S	
m,p-Xylene	77.55	10	100	0	77.5	79-122	0			S	
o-Xylene	36.18	5.0	50	0	72.4	80-123	0			S	
Toluene	38.47	5.0	50	0	76.9	79-120	0			S	
Xylenes, Total	113.7	15	150	0	75.8	80-120	0			S	
Surr: 1,2-Dichloroethane-d4	47.7	0	50	0	95.4	70-128	0				
Surr: 4-Bromofluorobenzene	49.68	0	50	0	99.4	73-126	0				
Surr: Dibromofluoromethane	46.31	0	50	0	92.6	71-128	0				
Surr: Toluene-d8	50.26	0	50	0	101	73-127	0				

MSD				Sample ID: 1205678-02AMSD			Units: µg/Kg		Analysis Date: 5/21/2012 12:00 PM		
Client ID:		Run ID: VOA3_120521A			SeqNo:2787684		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	41.24	5.0	50	0	82.5	79-120	38.09	7.95	30		
Ethylbenzene	38.85	5.0	50	0	77.7	80-122	37.28	4.12	30	S	
m,p-Xylene	81.71	10	100	0	81.7	79-122	77.55	5.23	30		
o-Xylene	38.67	5.0	50	0	77.3	80-123	36.18	6.65	30	S	
Toluene	40.26	5.0	50	0	80.5	79-120	38.47	4.54	30		
Xylenes, Total	120.4	15	150	0	80.3	80-120	113.7	5.68	30		
Surr: 1,2-Dichloroethane-d4	47.38	0	50	0	94.8	70-128	47.7	0.672	30		
Surr: 4-Bromofluorobenzene	49.5	0	50	0	99	73-126	49.68	0.346	30		
Surr: Dibromofluoromethane	45.92	0	50	0	91.8	71-128	46.31	0.849	30		
Surr: Toluene-d8	49.85	0	50	0	99.7	73-127	50.26	0.811	30		

The following samples were analyzed in this batch:

1205797-01A	1205797-02A	1205797-03A
1205797-04A	1205797-05A	1205797-10A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Noble Energy
 Work Order: 1205797
 Project: 7N

QC BATCH REPORT

Batch ID: **61390** Instrument ID **UV-2450** Method: **SW7196** **(Dissolve)**

MBLK	Sample ID: WBLKS-052512-61390				Units: mg/kg		Analysis Date: 5/25/2012 03:00 PM			
Client ID:	Run ID: UV-2450_120525B				SeqNo: 2796159		Prep Date: 5/25/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	2.0								

LCS	Sample ID: WLCSS-05 2512-61390				Units: mg/kg		Analysis Date: 5/25/2012 03:00 PM			
Client ID:	Run ID: UV-2450_120525B				SeqNo: 2796160		Prep Date: 5/25/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	9.8	2.0	10	0	98	80-120	0			

LCSD	Sample ID: WLCSDS-052512-61390				Units: mg/kg		Analysis Date: 5/25/2012 03:00 PM			
Client ID:	Run ID: UV-2450_120525B				SeqNo: 2796173		Prep Date: 5/25/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	9.72	2.0	10	0	97.2	80-120	9.8	0.82	20	

MS	Sample ID: 1205797-10CMS				Units: mg/kg		Analysis Date: 5/25/2012 03:00 PM			
Client ID: B01	Run ID: UV-2450_120525B				SeqNo: 2796176		Prep Date: 5/25/2012		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	10.96	2.0	10	0.32	106	75-125	0			

The following samples were analyzed in this batch:

1205797-01C	1205797-02C	1205797-03C
1205797-04C	1205797-05C	1205797-10C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Noble Energy
Project: 7N
WorkOrder: 1205797

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<u>Units Reported</u>	<u>Description</u>
mg/Kg	Milligrams per Kilogram

Sample Receipt Checklist

Client Name: **NOBLE ENERGY**

Date/Time Received: **17-May-12 09:05**

Work Order: **1205797**

Received by: **RDH**

Checklist completed by Raymond N Gamba
eSignature

18-May-12
Date

Reviewed by: Patricia L. Lynch
eSignature

21-May-12
Date

Matrices: Soil, Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>2.7</u> <u>003</u>		
Cooler(s)/Kit(s):	<u>7129</u>		
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		
Login Notes:	<u>Trip blank not on COC--logged in without analysis.</u>		

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

