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NTC ORLANDO
5090.3a

CLEANUP OF PETROLEUM CONTAMINATED SOIL FORMER BUILDING 2709 WITH
TRANSMITTAL NTC ORLANDO FL
3/11/2003
NODARSE AND ASSOCIATES, INC.

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Sandra Winkler



Geotechnical, Environmental Consulting & Materials Engineering

**Cleanup of Petroleum Contaminated Soil
Former Building 2709 Located at the
Orlando Naval Training Center
Orlando, Orange County, Florida**

1675 Lee Road

Winter Park, FL 32789

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Geotechnical, Environmental Consulting & Materials Engineering

March 11, 2003
Project No. W03-E-042

Ms. Barbara Nwokike
U.S. Department of Navy
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
2155 Eagle Drive
North Charleston, South Carolina 29419-9010

**Cleanup of Petroleum Contaminated Soil
Former Building 2709 Located at the Orlando Naval Training Center
Orlando, Orange County, Florida**

Dear Ms. Nwokike:

In accordance with our telephone conversation on March 11, 2003, **Nodarse & Associates, Inc. (N&A)** has prepared a budget to remove approximately 300 tons of petroleum contaminated soil located in the vicinity of the former Building 2709 at the former Orlando Naval Training Center (NTC). The petroleum contaminated soil was discovered during routine environmental boring and testing of individual lots within Unit 2 of the Baldwin Park Development project currently underway at the former NTC site. Petroleum odors and organic vapor analyzer (OVA) field measurements indicating petroleum contamination was discovered and documented. A map indicating the approximate location of the contaminated soil within the area of former Building 2709 is attached.

As a follow up to the field OVA analysis, soil samples were removed and analyzed for the presence of petroleum hydrocarbons utilizing U.S. Environmental Protection Agency (EPA) Methods 8021, 8100, and for Total Petroleum Hydrocarbons utilizing the FL-PRO analytical methodology. These analytical methodologies were utilized to screen for the types of petroleum hydrocarbons present. As a result of the soil laboratory analysis, only Total Recoverable Petroleum Hydrocarbons (TRPH) was encountered at a concentration of 10,900 parts per million (ppm) which exceeds the state cleanup standard for residential properties of 350 ppm. Subsequent to this sampling and analysis, the area where petroleum contaminated soils were observed was delineated.

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U.S. Department of Navy
Nodarse & Associates, Inc. Project No. W03-E-042
Page 2

In addition to the soil sampling, one (1) temporary monitoring well, designated TW-101, was installed in the boring where the highest concentration of petroleum contamination was observed. Groundwater was analyzed for the presence of petroleum contamination using EPA methodologies 8310 and FL-PRO. As a result, only a trace of petroleum hydrocarbons were detected with a total TRPH of 1.6 ppm. This does not exceed the state cleanup standard of 5 ppm. Therefore, it is our conclusion that groundwater has not been adversely impacted by the minor amount of petroleum contaminated detected in the soils. Copies of laboratory analytical results for both soil and groundwater are also attached.

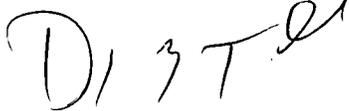
Based on the testing activities undertaken, a budget has been developed that projects the estimated costs for the petroleum contamination soil cleanup at the former Building 2709 site. The budget includes the cost of sampling analysis and delineation activities previously undertaken as documented above. In addition, the cost also includes the preparation of a final cleanup report to be submitted once cleanup activities have been completed. The estimated cost associated with this budget is attached.

As discussed, we are on a very fast track for cleanup activities within this area due to the construction schedule already underway. It is our understanding that authorization for this work can be rapidly obtained through your Navy RAC contractor, CH2MHill. Immediately upon your notice, we will work out details with CH2MHill to rapidly complete the excavation and treatment of the petroleum contaminated soils encountered.

Should you have any questions regarding the information provided, please do not hesitate to contact us.

Sincerely,

NODARSE & ASSOCIATES, INC.



David B. Twedell
Vice President/Principal Scientist

DBT W:\Environmental\2003-Projects-Env\W03e042\proposals\bdg2709-pro.wpd

cc: John Classe - Baldwin Park Development

ESTIMATED COST
PETROLEUM CONTAMINATED SOIL CLEANUP
FORMER BUILDING 2709 - FORMER ORLANDO NAVAL TRAINING CENTER
ORLANDO, ORANGE COUNTY, FLORIDA
N&A PROJECT NO. W03-E-042
MARCH 11, 2003

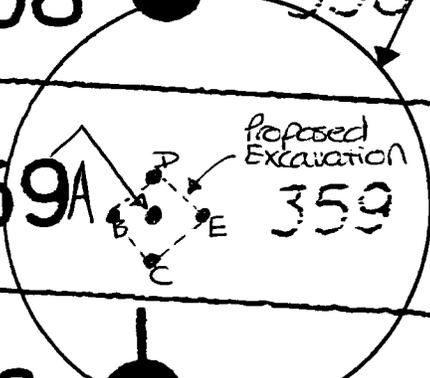
DESCRIPTION OF WORK	QTY.	RATE	UNIT	AMOUNT
Mobilization	1	\$ 100.00	Each	\$ 100.00
Temporary Road/Build/Tear Down	1	\$ 2,300.00	Lump Sum	2,300.00
Excavate/Load/Haul Containerized Soil	1	\$ 4,830.00	Lump Sum	4,830.00
Backfill Clean Fill	1	\$ 2,300.00	Lump Sum	2,300.00
Disposal of Contaminated Soil (Low Temperature Incineration)	300	\$ 30.00	Per Ton	9,000.00
Delineation of Contaminated Soil, Laboratory Testing of Soil and Groundwater, Pre-Burn Sampling and Analysis and Final Cleanup Report	1	\$ 3,670.00	Lump Sum	3,670.00
TOTAL ESTIMATED PROJECT COST				<u>\$ 22,200.00</u>

S-357 357

Approximate Area of Former Building # 2709

S-358 358

S-359A 359



S-360 360

S-361 361

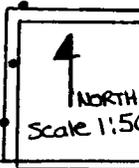
S-362 362

S-363 363

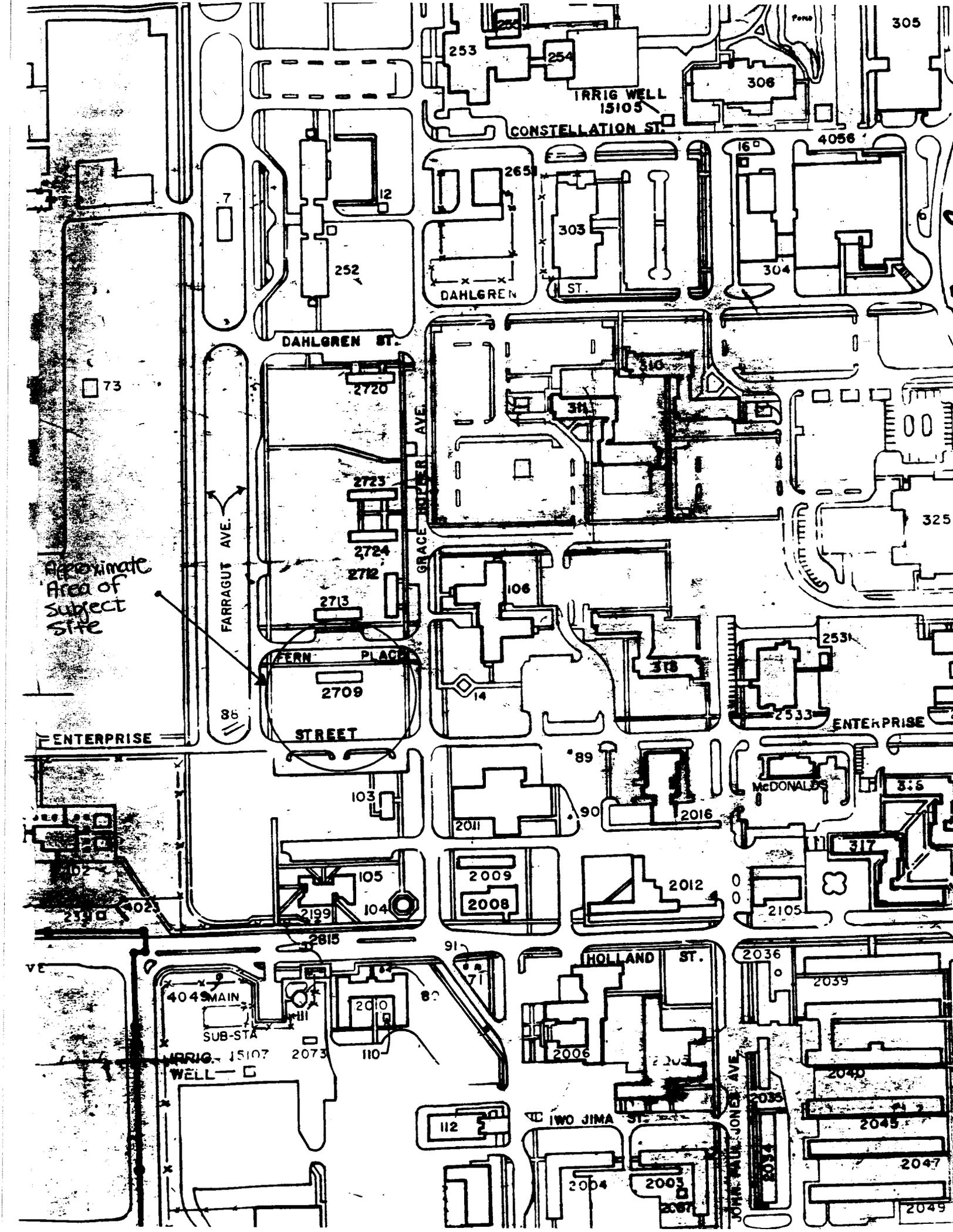
359+00

358+00

357+00



5



305

253

254

306

IRRIG WELL 15105

CONSTELLATION ST.

4056

7

12

265

303

160

252

DAHLGREN ST.

304

73

2720

FARRAGUT AVE.

GRACE HUBER AVE.

2723

2724

2712

2713

FERN PLACE

2709

86

STREET

ENTERPRISE

103

106

318

2531

ENTERPRISE

McDONALDS

315

89

90

2016

317

102

105

2011

2009

2008

2012

2105

VE

2815

91

HOLLAND ST.

2036

2039

404 MAIN

2010

SUB-STA

IRRIG. WELL 15107

2073

110

2006

2005

2035

2040

IWO JIMA ST.

112

JOHN PAUL JONES AVE.

2038

2045

2047

2004

2003

2007

2049



PC&B Environmental Laboratories, Inc.

210 Park Road, Oviedo, Florida 32765
Phone: 407-359-7194 Fax: 407-359-7197

Client : Nodarse & Associates Inc.
1675 Lee Road
Winter Park, FL 32789-

Contact : Dave Twedell
Phone : (407) 740-6110

Laboratory Reference Number : 203020126

Project Name : Baldwin Park
Project Number : W02-E-186

Chain of Custody : 27730

Laboratory ID	Matrix	Client ID	Status	Date/Time Sampled
203020126-1	Water	TW-101	RUN	02/18/2003 08:50

Number	Parameter	Description
1	EPA 8310	PAH's by HPLC
1	FL-PRO	Petroleum Hydrocarbons

PC&B Environmental Laboratories, Inc.

210 Park Road
Oviedo, FL 32765-8801
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Case Narrative

Dave Twedell
Nodarse & Associates Inc.
1675 Lee Road
Winter Park, FL 32789-

CASE NARRATIVE for Work Order: 203020126
Project Number: W02-E-186
Project Name: Baldwin Park

This Case Narrative is a summary of events and/or problems encountered with this Work Order.

For EPA 8310 PAH analysis, hits below 5 ppb (water) cannot be confirmed.

Definition of Flags

DL = No surrogate result due to dilution or matrix interference.
J = Estimated Value, value not accurate.
L = Off-scale high. Actual value is greater than value given.
Q = Sample analyzed beyond the accepted holding time.
T = Value reported is less than the laboratory method detection limit.
V = Analyte was both detected in the method blank and sample.

PC&B Environmental Laboratories, Inc.
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Report of Analysis
PAH's by HPLC

CLIENT NAME: Nodarse & Associates Inc.
PROJECT NAME: Baldwin Park
PROJECT NUMBER: W02-E-186
DATE RECEIVED: 02/18/2003
ANALYTICAL PROTOCOL: EPA 8310

Lab Reference Number	203020126-1
Client Sample ID	TW-101
Date/Time Sampled	02/18/2003 08:50
Date/Time Extracted	02/18/2003
Date/Time Analyzed	02/18/2003 19:06
Sample Matrix (as Received)	Water
Analysis Confirmed	GCMS
Dilution Factor	2
Result Units	ug/l

Acenaphthene	20 U
Acenaphthylene	20 U
Anthracene	20 U
Benzo(a)anthracene	0.4 U
Benzo(a)pyrene	0.4 U
Benzo(b)fluoranthene	0.4 U
Benzo(ghi)perylene	20 U
Benzo(k)fluoranthene	1.0 U
Chrysene	4 U
Dibenzo(ah)anthracene	0.4 U
Fluoranthene	20 U
Fluorene	20 U
Indeno(123cd)pyrene	0.4 U
Naphthalene	2 U
1-Methyl naphthalene	2 U
2-Methyl naphthalene	2 U
Phenanthrene	20 U
Pyrene	20 U
(Surr) Decafluorobiphenyl (%)	0 DL

U = Undetected. The value preceding the 'U' is the RL for the analyte, based on dilution. Results reported on a Wet Weight basis.

NELAP- FDOH Certification # E83239

Reviewed by : nem

PC&B Environmental Laboratories, Inc.
210 Park Road
Oviedo, FL 32765-8801
PHONE: 407-359-7194
FAX: 407-359-7197

Report of Analysis
Petroleum Hydrocarbons

CLIENT NAME: Nodarse & Associates Inc.
PROJECT NAME: Baldwin Park
PROJECT NUMBER: W02-E-186
DATE RECEIVED: 02/18/2003
ANALYTICAL PROTOCOL: FL-PRO

Lab Reference Number	203020126-1
Client Sample ID	TW-101
Date/Time Sampled	02/18/2003 08:50
Date/Time Extracted	02/18/2003
Date/Time Analyzed	02/18/2003 21:28
Sample Matrix (as Received)	Water
Analysis Confirmed	No
Dilution Factor	1
Result Units	mg/l

Total PHS	1.6
(Surr) C-39 (%)	48
(Surr) OTP (%)	39

U = Undetected. The value preceding the 'U' is the RL for the analyte, based on dilution. Results reported on a Wet Weight basis.

NELAP- FDOH Certification # E83239

Reviewed by: km

Quality Control Report for LCS Analysis

Petroleum Hydrocarbons

Matrix: Water
Lab Sample ID: LCS
QC Batch ID: 200302FLRO039B
LCS Units: mg/l

Analysis Date: 02/18/2003
Preparation Date: 02/18/2003
Method: FL-PRO
Analyst: EM

Analyte	LCS Conc	LCS Result	Percent Recovery	Lower Control Limit	Upper Control Limit
(Surr) C-39	100.0	78.0	78	8	141
(Surr) OTP	50.0	51.0	102	40	131
Total PHS	50.0	38.0	76	45	124



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Client : Nodarse & Associates Inc.
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Winter Park, FL 32789-

Contact : Dave Twedell
Phone : (407) 740-6110

Laboratory Reference Number : 203020091

Project Name : Baldwin Park
Project Number : W02-E-186

Chain of Custody : 32400

Laboratory ID	Matrix	Client ID	Status	Date/Time Sampled
203020091-1	Soil	SB359@7'	RUN	02/12/2003 14:00

Number	Parameter	Description
1	EPA 8021	Aromatic Volatile Organics
1	FL-PRO	Petroleum Hydrocarbons
1	EPA 8100	Polynuclear Aromatic Hydrocarbons

PC&B Environmental Laboratories, Inc.
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Report of Analysis
Polynuclear Aromatic Hydrocarb

CLIENT NAME: Nodarse & Associates Inc.
PROJECT NAME: Baldwin Park
PROJECT NUMBER: W02-E-186
DATE RECEIVED: 02/13/2003
ANALYTICAL PROTOCOL: EPA 8100

Lab Reference Number	203020091-1
Client Sample ID	SB359@7
Date/Time Sampled	02/12/2003 14:00
Date/Time Extracted	02/13/2003
Date/Time Analyzed	02/14/2003 08:31
Sample Matrix (as Received)	Soil
Analysis Confirmed	GCMS
Dilution Factor	5
Percent Moisture	11.9
Result Units	ug/kg

Acenaphthene	395 U
Acenaphthylene	395 U
Anthracene	440
Benzo(a)anthracene	395 U
Benzo(a)pyrene	395 U
Benzo(b)fluoranthene	395 U
Benzo(ghi)perylene	395 U
Benzo(k)fluoranthene	395 U
Chrysene	395 U
Dibenzo(ah)anthracene	395 U
Fluoranthene	455
Fluorene	395 U
Indeno(123-cd)pyrene	395 U
Naphthalene	395 U
1-Methyl naphthalene	395 U
2-Methyl naphthalene	395 U
Phenanthrene	395 U
Pyrene	395 U
(Surr) 2-Fluorobiphenyl (%)	0 DL

U = Undetected. The value preceding the 'U' is the RL for the analyte, based on dilution. Results reported on a Dry Weight basis.

NELAP- FDOH Certification # E83239

Reviewed by :

NLM

Quality Control Report for LCS Analysis

Polynuclear Aromatic Hydrocarbons

Matrix: Soil

Lab Sample ID: LCS

QC Batch ID: 200302PAH014C

LCS Units: ug/kg

Analysis Date: 02/14/2003

Preparation Date: 02/13/2003

Method: EPA 8100

Analyst: EM

Analyte	LCS Conc	LCS Result	Percent Recovery	Lower Control Limit	Upper Control Limit
(Surr) 2-Fluorobiphenyl	100	67	67	30	128
Acenaphthene	50	52	104	31	126
Acenaphthylene	50	50	100	34	116
Anthracene	50	42	84	30	140
Benzo(a)anthracene	50	39	78	24	131
Benzo(a)pyrene	50	43	86	26	131
Benzo(b)fluoranthene	50	49	98	16	139
Benzo(ghi)perylene	50	38	76	10	140
Benzo(k)fluoranthene	50	54	108	19	142
Chrysene	50	53	106	27	133
Dibenzo(ah)anthracene	50	37	74	18	137
Fluoranthene	50	50	100	36	124
Fluorene	50	48	96	30	122
Indeno(123-cd)pyrene	50	37	74	18	136
Naphthalene	50	47	94	23	116
Phenanthrene	50	45	90	30	125
Pyrene	50	52	104	36	124

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Report of Analysis
Petroleum Hydrocarbons

CLIENT NAME: Nodarse & Associates Inc.
PROJECT NAME: Baldwin Park
PROJECT NUMBER: W02-E-186
DATE RECEIVED: 02/13/2003
ANALYTICAL PROTOCOL: FL-PRO

Lab Reference Number	203020091-1
Client Sample ID	SB359@7
Date/Time Sampled	02/12/2003 14:00
Date/Time Extracted	02/13/2003
Date/Time Analyzed	02/14/2003 08:33
Sample Matrix (as Received)	Soil
Analysis Confirmed	No
Dilution Factor	10
Percent Moisture	11.9
Result Units	mg/kg

Total PHS	10900
(Surr) C-39 (%)	0 DL
(Surr) OTP (%)	0 DL

U = Undetected. The value preceding the 'U' is the RL for the analyte, based on dilution. Results reported on a Dry Weight basis.

NE LAP- FDOH Certification # E83239

Reviewed by: *nm*

Quality Control Report for LCS Analysis

Petroleum Hydrocarbons

Matrix: Soil

Lab Sample ID: LCS

QC Batch ID: 200302FLRO030B

LCS Units: mg/kg

Analysis Date: 02/13/2003

Preparation Date: 02/13/2003

Method: FL-PRO

Analyst: EM

Analyte	LCS Conc	LCS Result	Percent Recovery	Lower Control Limit	Upper Control Limit
(Surr) C-39	100.0	76.0	76	17	135
(Surr) OTP	50.0	40.0	80	41	131
Total PHS	50.0	50.0	100	43	128

