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SEPTEMBER 2012 QUARTERLY MONITORING REPORT FOR STUDY AREA 36 NW NTC ORLANDO FL

1/1/2013

BFA ENVIRONMENTAL CONSULTANTS

September 2012 Quarterly Monitoring Report
Study Area 36NW - Former Naval Training Center
Orlando, Florida

Prepared for:

Department of the Navy
Naval Facilities Engineering Command Southeast
BRAC Program Management Office Southeast
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January 2013

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Study Area 36NW - Former Naval Training Center
Orlando, Florida

Prepared for:

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Long Term Monitoring and O & M at Former NTC Orlando, Florida

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A Previous Analytical Results (2008-2012)
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ACRONYMS

AMSL	Above Mean Sea Level
BFA	Barnes, Ferland and Associates, Inc.
BGS	Below Ground Surface
°C	Degrees Celsius
Cis-1, 2-DCE	Cis-1, 2-dichloroethene
COC	Contaminants of Concern
CTO	Contract Task Order
DO	Dissolved Oxygen
EPA	Environmental Protection Agency
ft.	Feet
FDEP	Florida Department of Environmental Protection
FL-PRO	Florida Petroleum Residual Organic
gal	gallons
GCTL	Groundwater Cleanup Target Levels
in	Inches
µg/L	Micrograms per liter
µS/cm	Micro Siemens per centimeter
mg/L	Milligrams per liter
MEE	Methane, Ethane, and Ethene
mL/min	Milliliters per minute
mV	Millivolts
NA	Not Available
NADC	Natural Attenuation Default Concentration
NM	Not Measured
NTC	Naval Training Center
NTU	Nephelometric Turbidity Units
OPT	Orlando Partnering Team
ORP	Oxidation-Reduction Potential
PAH	Polynuclear Aromatic Hydrocarbons
PCE	Tetrachloroethene
SA	Study Area
SI	Site Investigation
SU	Standard Unit
TCE	Trichloroethene
TOC	Top of Casing
TPH	Total Petroleum Hydrocarbon
TRPH	Total Recoverable Petroleum Hydrocarbons
VOC	Volatile Organic Compound

Section 1 - Background

The following report presents results of the September 2012 groundwater sampling round at Study Area 36NW (SA36NW) at the former Naval Training Center (NTC) in Orlando, Florida. Section 1 is intended to provide background information for understanding the site conditions at SA36NW.

1.1 NTC Orlando's Environmental Program

Environmental studies and cleanup actions are underway at the former NTC, Orlando as part of the Department of Defense's Installation Restoration (IR) Program. Through this program, areas of known or suspected contamination from past practices and operations are being monitored, evaluated, and, if necessary, cleaned up.

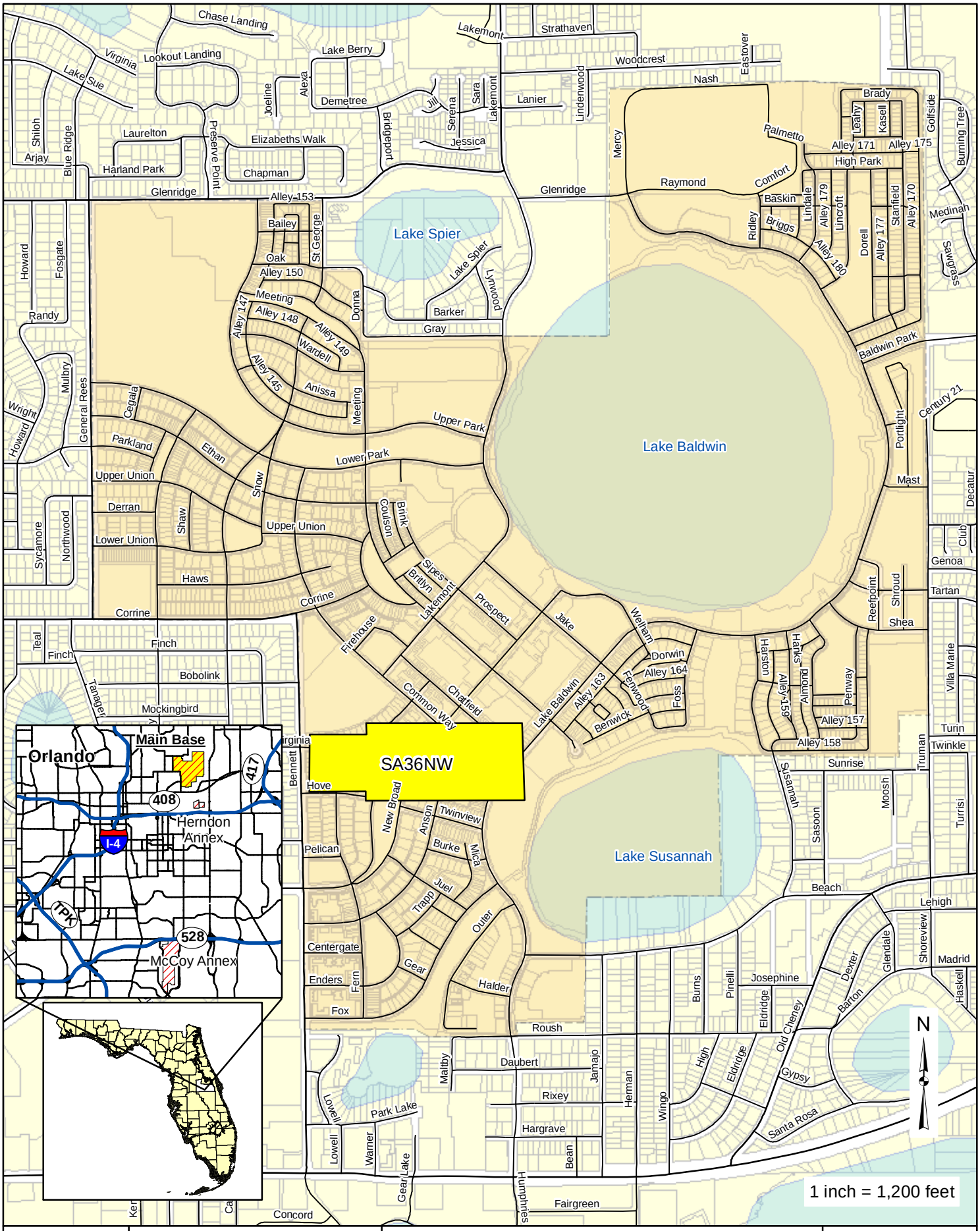
As a part of the Base Realignment and Closure process, Environmental Baseline Surveys were commissioned. The survey findings on the properties indicated that soil and groundwater contamination were present in several areas of the former NTC. The NTC contaminated sites were divided into Study Areas (SAs) and Operable Units (OUs) for the assessment and remediation of the contamination, which was found to be present above Florida Site Rehabilitation Concentrations.

1.2 SA36NW Location and History

SA36 NW is located within the southwest corner of the former Main Base at NTC, Orlando as shown on Figure 1. The former Main Base area has been modified for residential use (Figure 2). SA36 NW refers to the area where petroleum contamination in groundwater migrated from the former Main Base Auto Service Station (Building 109) discovered in 1993. SA36 NW is immediately northwest of Study Area 36, which previously contained Buildings 2121, 2122 and the western half of the Public Works Yard. The Contaminants of Concern (COC) at SA 36 were chlorinated solvents (primarily trichloroethene). The combined downgradient plumes from these two sites were followed in Study Area 38, which extends east and southeast to Lake Baldwin Lane, approximately 0.3 miles from the original spill point in SA 36NW. *Starting in 2010, the study areas 36 NW and 38 have been combined into one study area with the remediation of all chlorinated solvents to within GCTL.*

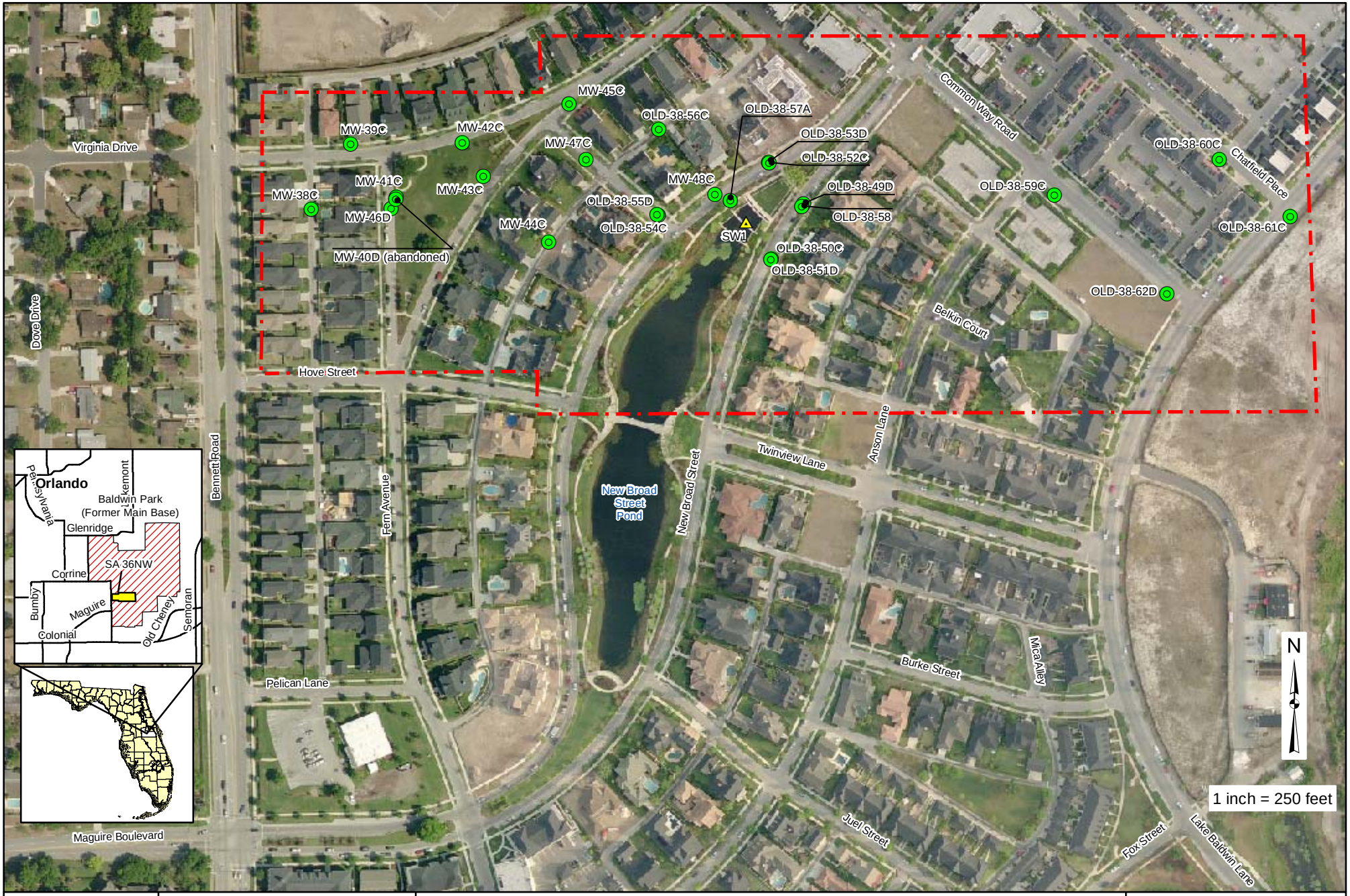
1.3 Previous Contamination Investigations at SA36NW

UST Investigation Results - In November 1993, routine groundwater sampling of compliance wells near the former Underground Storage Tanks (USTs) identified the presence of benzene and total volatile organic aromatics (VOAs) at concentrations above the State of Florida's acceptable levels. Compliance wells are sampled to detect problems associated with USTs.



Location Map of Study Area 36NW
Baldwin Park (Former Main Base)

Figure 1



SA36NW Monitor Well Sampling Location Map

Figure 2

***Tank Removal, Cleanup, and Replacement* -** Petroleum was observed in the excavation during the removal of the three 20,000-gallon USTs in January 1994. Cleanup included a dewatering operation that removed approximately 126,900 gallons of fuel and contaminated water and the removal of approximately 1,115 cubic yards of contaminated soil. Closure of the base had not yet begun, and 3 new 20,000-gallon, double-walled, fiberglass USTs were installed. The installation also included a concrete secondary containment structure, level indicators, and over-fill protection.

Environmental Assessment - Because petroleum contamination was detected during the 1994 tank replacement, a contamination assessment was conducted. The site was investigated from November 7, 1995 to September 19, 1996 to evaluate soil and groundwater conditions at the Auto Service Station. The investigation included both soil and groundwater sampling. Soil samples were collected using hand auger borings. No contaminated soil was identified. Two temporary and two permanent monitoring wells were installed and sampled. No petroleum contamination exceeding Florida target cleanup levels was detected in groundwater. The Florida Department of Environmental Protection (FDEP) approved the site for No Further Action on November 25, 1996.

Base Closure and Property Transfer - The multi-phase closure of NTC began in 1995 and was completed in April 1999. The Navy transferred property to the City of Orlando for redevelopment in accordance with US Navy Base Realignment and Closure Act (US Navy BRAC) practices. A property must be approved as suitable for transfer in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) prior to the transfer. The property encompassing SA 36NW was classified as an area where only the release or disposal of petroleum products has occurred, meaning no hazardous substances have contaminated the property and the property was then transferred to the City of Orlando in October 1999.

Main Base Auto Service Station Closure - In April 1999 when the Main Base Service Station, along with NTC, officially closed, the three 20,000-gallon fiberglass USTs and associated dispenser lines were pumped out. The tanks and lines were later closed in place by filling with sand in March 2000. There were no indications of any petroleum contamination during the UST closure activities. Following tank closure activities, the Orange County Environmental Protection Division concurred that no further assessment was needed for these tanks.

Additional Investigation - In April 2002, predevelopment activities identified petroleum contaminants in soil and groundwater near the former location of Building 109. Aggressive remedial efforts conducted between July and September 2002 included the recovery and treatment of nearly 3 million gallons of contaminated groundwater and the excavation and disposal of over 2,200 tons of petroleum impacted soil. The remedial efforts successfully cleaned up the shallow portion of the aquifer (16 feet below ground surface). However, deeper groundwater flowing to the east from the former release at the Main Base Auto Service Station resulted in benzene being detected in monitoring wells associated with the investigation of the chlorinated solvent plume at SA 36.

Groundwater Plume Investigation **-** In September 2003 the area and depth of contaminated groundwater at SA 36NW was investigated using direct push groundwater sampling techniques. A system of 7 monitoring wells was then installed to monitor the groundwater plume in the deeper part of the aquifer (35 to 55 feet below ground surface). Results of sampling the wells identified the petroleum contaminants benzene, toluene, ethylbenzene, xylene (BTEX), and methyl tertbutyl-ether in groundwater at concentrations above the Florida groundwater cleanup target levels. The Navy has implemented a quarterly groundwater monitoring program that began in March 2004. Three additional wells have been installed since the monitoring program commenced. Analytical results obtained in March 2006 indicated trimethylbenzenes, isopropylbenzene, methyl tert-butyl ether, naphthalene and total petroleum hydrocarbons that exceeded the cleanup target levels in addition to the BTEX contaminants previously detected.

The groundwater plume is more than 30 feet below ground and does not pose a threat to human health or the environment. Restrictions are in place to prevent extraction of groundwater (other than for environmental sampling) to protect human health.

1.4 Continued Groundwater Network Monitoring

Barnes, Ferland and Associates, Inc. (BFA) has performed 19 quarterly sampling events at SA36NW, beginning in July, 2008. Figure 2 shows the monitor well locations at SA36NW. Sampling and testing procedures are performed in accordance with the Sampling and Analysis Plan titled, *Long Term Monitoring at Study Area 36NW (Tetra Tech NUS, Inc., December 2011).*

1.5 Regulatory Framework

This project is being conducted as part of the US Navy Base Realignment and Closure Act (US Navy BRAC). The US Environmental Protection Agency (USEPA) works closely with other federal agencies, state and local governments to develop and enforce regulations under existing environmental laws. A number of Federal statutes provide USEPA with the authority to prevent and control sources of groundwater contamination, as well as cleanup of existing contaminated sites. The Comprehensive Environmental Response Compensation Liability Act (CERCLA) regulations, governing the treatment and handling of wastes, are applied at SA36NW. USEPA is responsible for researching and setting national standards for a variety of environmental programs and delegates to states the responsibility for issuing permits, and monitoring and enforcing compliance. Chapter 403, *FS* establishes the Florida Department of Environmental Protection (FDEP) as the primary agency responsible for the protection of the groundwater supply. The FDEP has promulgated a number of different regulations under title 62 of the Florida Administrative Code (*F.A.C.),* which function to regulate several types of activities with potential impacts on groundwater. Applicable *F.A.C.* Chapter 62 regulations are also followed in the performance of the scope of work, as detailed in the Work Plan (BFA, 2008). Key project decisions are made by the Orlando Partnering Team (OPT) including members of FDEP, US Navy BRAC and Resolution Consultants.

Section 2 - Field Sampling and Analytical Results

All field sampling and laboratory testing activities were performed in accordance with the Sampling and Analysis Plan (SAP) titled: *Long Term Monitoring at Study Area 36NW, Naval Training Center, Orlando, Florida (Tetra Tech NUS, Inc., December 2011)* and Table 1 sampling matrix for September, 2012. Groundwater samples were collected by Barnes, Ferland and Associate, Inc. (BFA) and laboratory analysis was performed by Accutest Laboratories, Southeast.

The following section provides a summary of BFA field activities and laboratory results. The sampling schedule for Study Area 36NW (SA36NW) is quarterly and involves sampling up to 23 groundwater monitor wells at locations shown in Figure 2. Appendix A provides a summary table of quarterly laboratory analytical results, since July 2008. The sampling matrix (Table 1) for September 2012 included thirteen (13) of the site's monitoring wells, as provided by the Orlando Partnering Team (OPT).

Table 1 - SA36NW September 2012 sampling matrix

Study Area 36NW	FIELD MEASUREMENTS							Contaminants of Concern	
	Water Levels	pH	ORP	Temp.	Spec. Cond.	Dissolved Oxygen	Turbidity	*VOCs 8260	TRPH FL-PRO
MW-38C Dup	X	X	X	X	X	X	X	X	X
MW-41C	X	X	X	X	X	X	X	X	X
MW-48C	X	X	X	X	X	X	X	X	X
OLD-38-51D	X	X	X	X	X	X	X	X	X
OLD-38-54C	X	X	X	X	X	X	X	X	X
OLD-38-55D	X	X	X	X	X	X	X	X	X
OLD-38-58 (C-2)	X	X	X	X	X	X	X	X	X
OLD -38-59C	X	X	X	X	X	X	X	X	X
OLD-38-60C	X	X	X	X	X	X	X	X	X
OLD-38-61C	X	X	X	X	X	X	X	X	X
OLD-38-62D	X	X	X	X	X	X	X	X	X
OLD-38-63C	X	X	X	X	X	X	X	X	X
OLD-38-64C	X	X	X	X	X	X	X	X	X
TOTALS	13	13	13	13	13	13	13	13	13

NOTES:

-Quarterly sampling at SA36NW: March, June, September, December

*Limited VOC list: Benzene, Ethylbenzene, Isopropyl benzene, Naphthalene, total xylene, MTBE, 1,2,4-Trimethyl benzene, 1,3,5-Trimethyl benzene and TPH along with the chlorinated compounds PCE, TCE and Cis 1,2DCE, Methylene Chloride and hexachlorobutadiene.

-Duplicate sample collected for monitor well MW-38C

2.1 Water Level Measurements

Prior to groundwater sample collection, water levels are measured in monitor wells, as described in the facility SAP and in compliance with FDEP SOP 01-01 (Version March 31, 2008). Groundwater level measurements were collected from 12 monitoring wells on September 11, 2012. The monitor well information and calculated groundwater elevations are shown in Table 2 and have been plotted graphically along with the groundwater flow directions inferred from these data (Figure 3). The Zone C wells are screened between 30-40 feet below land surface (BLS) and the deeper Zone D wells are screened between 45-60 feet BLS (Table 2). Groundwater elevations are measured using an electronic water level meter and captured by the electronic program/database ADESSO. Potentiometric surface maps and contaminant concentration maps are produced by aid of Golden Software's Surfer program. On September 11, 2012, the primary groundwater flow direction in the Zone C wells at SA36NW was towards the east, which is typical (Figure 3).

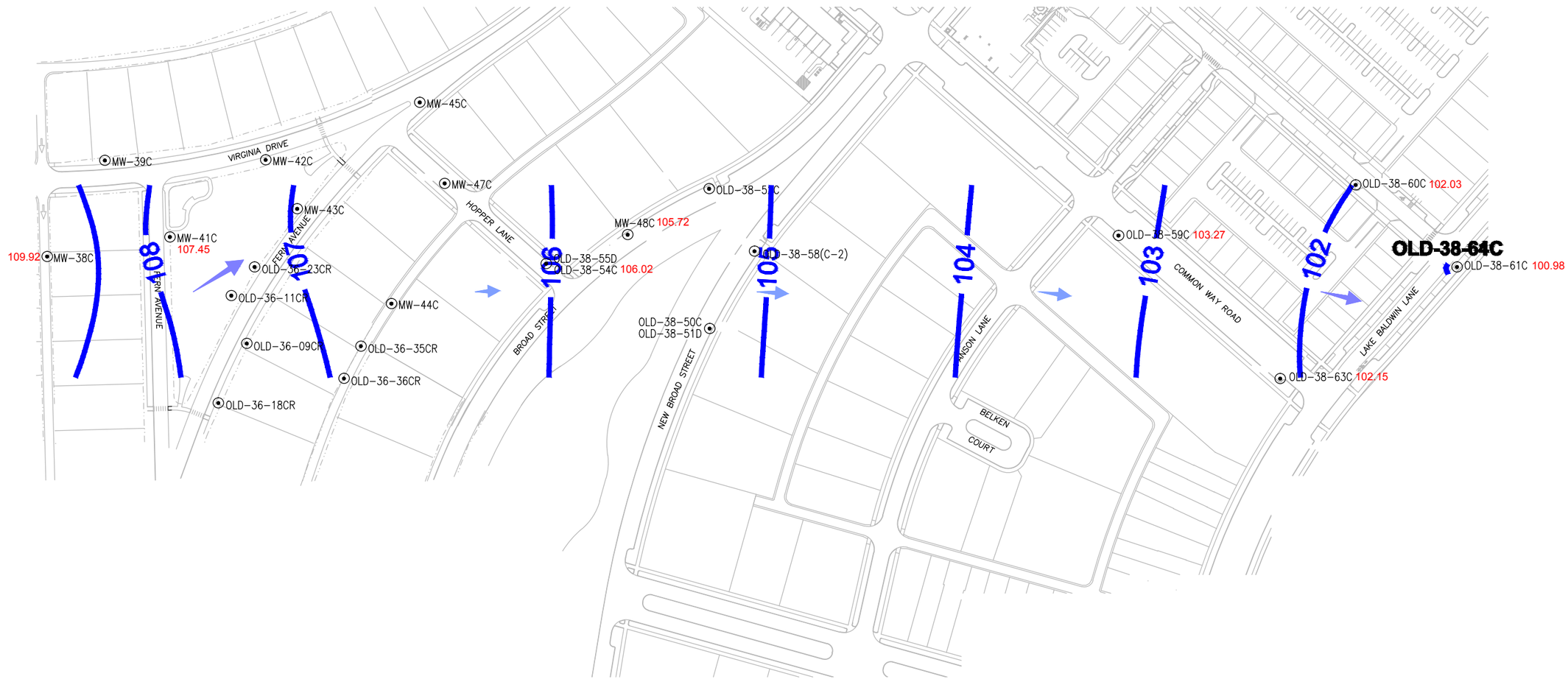
Table 2 - SA36NW monitor well information and groundwater elevations for September 11, 2012

SA36NW Well ID	Well Diameter (inches)	Screened Interval (ft. BLS)	TOC Elevation (ft. NGVD)	Depth To Water (ft. BTOC)	Water Elevation (ft. NGVD)
MW-38C	2"	30 – 35	115.59	5.67	109.92
MW-41C	2"	30-35	114.62	7.17	107.45
MW-48C	2"	31 – 36	113.52	7.80	105.72
OLD-38-51D	1"	45 – 50	113.88	8.55	105.33
OLD-38-54C	1"	35 – 40	112.50	6.48	106.02
OLD-38-55D	1"	45 – 50	112.53	6.50	106.03
OLD-38-58 (C-2)	0.375"	40 – 45	113.19		-
OLD-38-59C	1.5"	35 – 40	106.07	2.80	103.27
OLD-38-60C	1.5"	30 – 35	105.93	3.90	102.03
OLD-38-61C	1.5"	30 – 35	105.71	4.73	100.98
OLD-38-62D	1.5"	55 – 60	106.29	4.25	102.04
OLD-38-63C	2"	36.5 - 46.5	106.3	4.15	102.15
OLD-38-64C	2"	36 - 46	105.7	4.73	100.97

NOTES: BLS - Below land surface; **TOC -** Top of casing; **NGVD** - National Geodetic Vertical Datum
BTOC - Below top of casing

2.2 Groundwater Sampling

Groundwater sampling of thirteen monitor wells was conducted at SA36NW on September 12 - 13, 2012. Groundwater sampling consists of purging and sampling the monitor wells using the low-flow methods (peristaltic pump) as described in the Work Plan. In accordance with the Work Plan, purge waters are collected in a 125-gallon tank mounted on one of the BFA sampling trucks. The purge water is containerized in drums until analyses results are received. The purge water is then disposed of



LEGEND

Well location
Well ID number
OLD-##-##
groundwater elev.

Zone C Flow Direction
0.003
0.015
Contour Interval 1 foot

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C Zone Potentiometric Surface Map

FIGURE
3

F:\HYDRO\PROJECTS\2008\2008-10 NAVFAC Long-Term Monitoring Orlando\Data\Maps&Pictures\drawings\study Area 36NW\2012-09\SA36NW Figure 3 GWEL C Zone.dwg

appropriately by a hazardous waste handler. The purging of wells consists of removing groundwater at a flow rate less than or equal to the groundwater recharge rate until field parameters (temperature, pH, conductivity, turbidity, Dissolved Oxygen [DO]) have stabilized (Appendix B). Water levels in the wells are continuously monitored to maintain drawdown at less than 0.3 feet. The default pumping rate used is 0.1 GPM for 2-inch diameter wells. This rate is varied as necessary for individual well characteristics.

Field-testing equipment is calibrated daily according to the manufacturer's instructions Appendix C. ADESSO is used as the field electronic capture program and relational database for field related data. All data are captured in the field electronically and uploaded to the database and is accessible to interested Navy and OPT members near real time. Field measurements of temperature, ORP, DO, pH, specific conductivity, and turbidity are recorded at stabilization after the completion of well purging (Table 3). As in the past, the natural pH of groundwater at this site is on the acidic side which can inhibit reductive dechlorination. However, the low O_2 readings and mostly negative ORP in the monitor wells is conducive for reductive dechlorination.

Table 3 - SA36NW September 2012 field testing results

Well ID	Date	Temp °C	Cond µS/cm	DO mg/L	pH	ORP mV	Turbidity NTU
MW-38C	09/12/2012	27.21	1635.00	0.14	6.00	-170.00	13.30
MW-41C	09/12/2012	27.54	262.00	0.11	6.17	-101.00	13.70
MW-48C	09/12/2012	26.83	183.00	0.36	4.64	-43.00	7.10
OLD-38-51D	09/13/2012	27.18	237.00	0.18	4.12	-19.00	17.30
OLD-38-54C	09/12/2012	27.15	114.00	0.20	4.22	6.00	0.00
OLD-38-55D	09/12/2012	26.64	214.00	0.51	4.44	-66.00	3.30
OLD-38-58 (C-2)	09/13/2012	27.68	428.00	0.19	5.61	-172.00	2.60
OLD-38-59C	09/13/2012	29.01	195.00	0.31	4.31	-25.00	18.80
OLD-38-60C	09/12/2012	26.03	187.00	0.47	4.22	-55.80	0.79
OLD-38-61C	09/12/2012	27.29	252.00	0.46	5.23	-91.70	1.55
OLD-38-62D	09/12/2012	25.72	182.00	0.65	4.46	-59.60	0.97
OLD-38-63C	09/12/2012	25.76	273.00	0.52	5.17	-92.50	3.40
OLD-38-64C	09/12/2012	27.61	181.00	0.52	4.10	-47.90	9.18

Notes: mg/L - milligrams per liter; µS/cm - micro semens per centimeter; mv - millivolts; NTU - nephelometric turbidity units; NS-not sampled.

For all laboratory analytes, the screening criterion is the Florida Department of Environmental Protection (FDEP) Maximum Contamination Level (MCLs) as given in the Drinking Water Standards (*F.A.C.* 62-550 Table 1, MCLs for Volatile Organic Compounds), *F.A.C.* 62-777 Table 1 Groundwater and Surface Water Cleanup Target Levels, and *F.A.C.* 62-777 Table V Natural Attenuation Default Concentrations (NADC). For metals, the Background Screening Values (BGSV) from the Background

Sampling Report, NTC, Orlando, May, 1995 are used as the primary standard where measurements are above the 62-777 Groundwater Cleanup Target Levels (GCTLs).

Groundwater analyte detections and exceedances are shown in Table 4 for the September 2012 sampling round. Bolded values indicate detected analyte concentrations. Yellow highlights indicate results above the FDEP MCLs or GCTLs. Orange highlights indicate concentrations in excess of FDEP NADC.

Historical concentrations of contaminants of concern (COC) are shown in Appendix A for comparison. Figure 4 shows the September 2012 analytical detection results for contaminants of concern (benzene, naphthalene and isopropylbenzene) from monitor wells at SA36NW. The highest COC concentrations for the September 2012 sampling round were from source monitor well MW-38C, which is typical. Figure 5 shows concentrations of selected COC parameters from source monitor well MW-38C since July 2008. Monitor well MW-38C has the highest naphthalene concentration at SA-36NW site, however, concentrations decreased from 42.1µg/L during the June 2012 to 17.6 µg/L during September 2012. The highest benzene concentration typically occurs at monitor well OLD-38-54C, in the vicinity of the Hopper Lane and Broad Street Intersection, and was undetected during September 2012 sampling event.

Figure 5 - Concentrations of COCs from source well MW-38C (2008-2012)

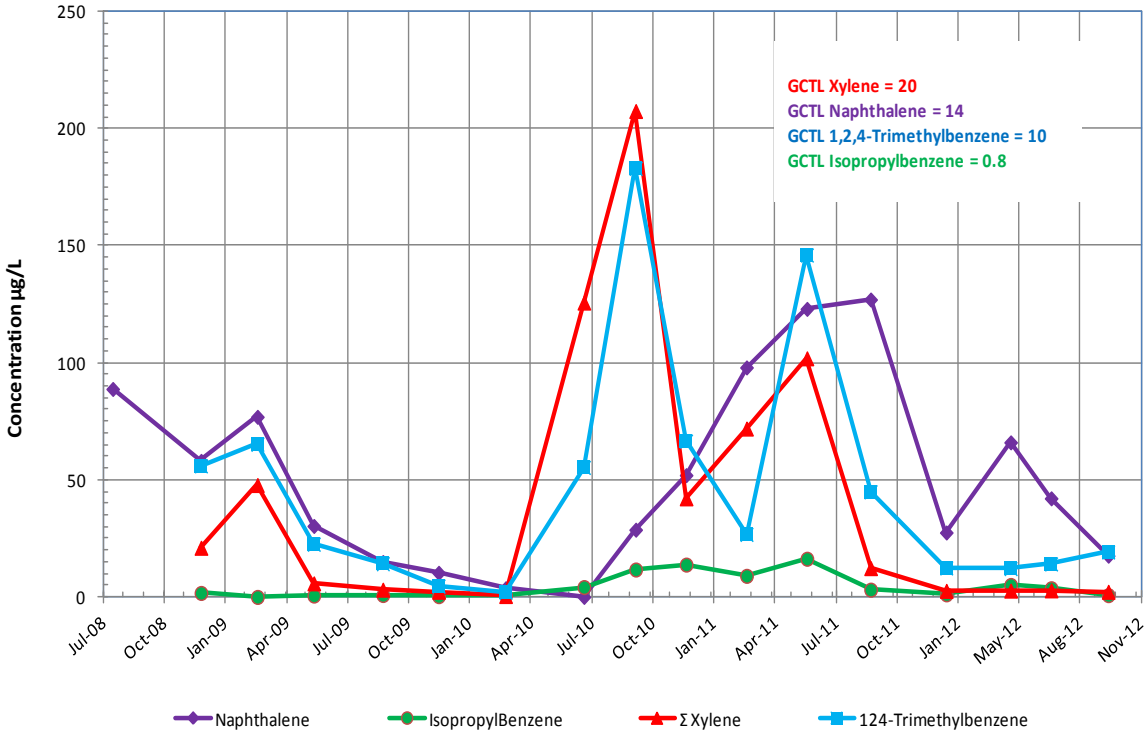
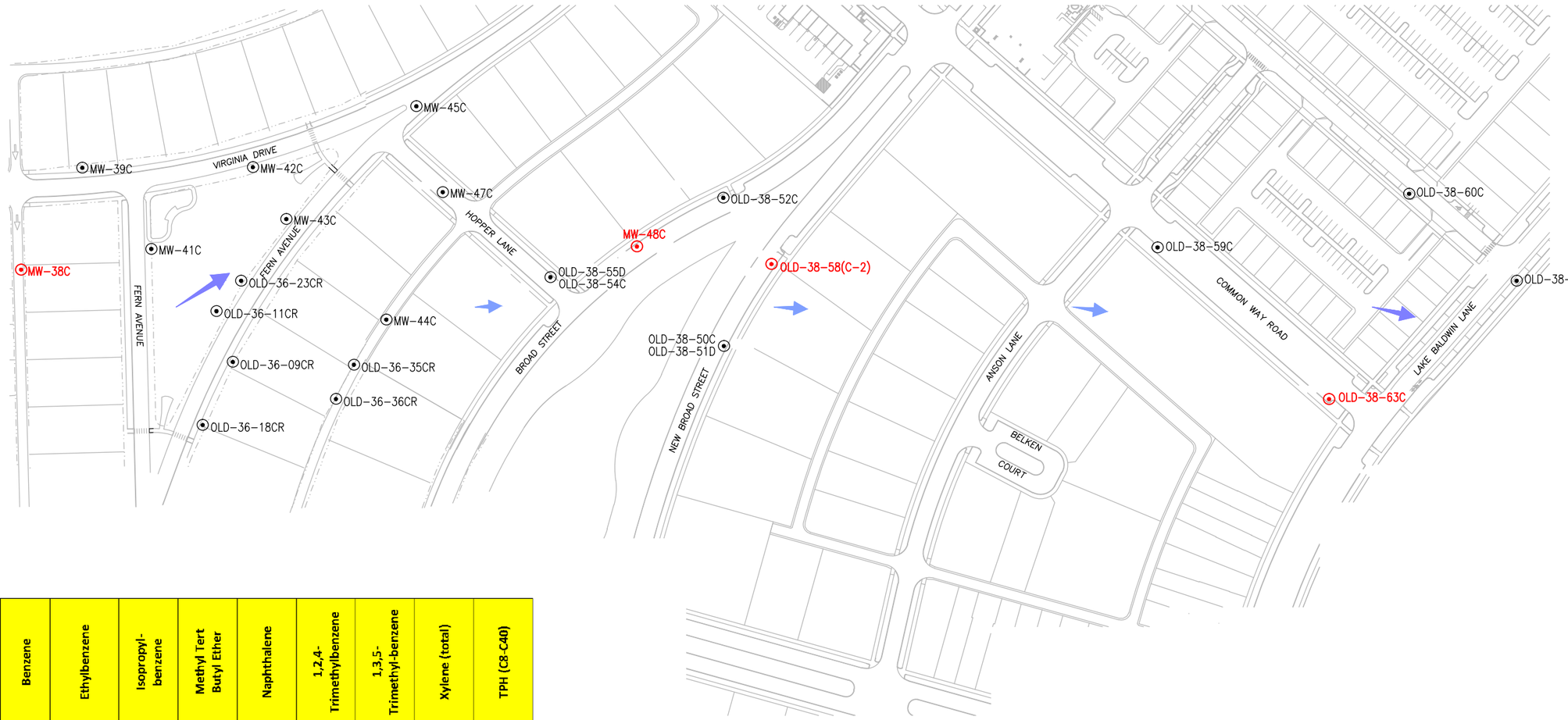


Table 4 - September 2012 Analytical Detection Results for Study Area 36NW

Study Area 36NW		Chemical Name	Benzene	Ethylbenzene	Isopropylbenzene	Methyl Tert Butyl Ether	Naphthalene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylene (total)	TPH (C8-C40)
		UNITS	µg/L	µg/l	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
Well ID	**LAB ID**	**GCTL**	**1**	**700**	**0.8**	**20**	**14**	**10**	**10**	**20**	5
		NADC	**100**	**7000**	**8**	**200**	**140**	**100**	**100**	**200**	**50**
MW-38C	F96891-8	09/12/2012	0.20 U	**1.2**	**0.76 I**	0.34 U	**17.6**	**19.2**	**0.39 I**	**2.2 I**	**2.13**
	F96891-11	Duplicate	0.20 U	**1.4**	**0.94 I**	0.34 U	**21.2**	**20.8**	**0.42 I**	**2.3 I**	**1.98**
MW-41C	F96891-9	09/12/2012	0.20 U	0.20 U	0.20 U	**14.3**	1.0 U	0.27 U	0.21 U	0.52 U	0.14 U
MW-48C	F96891-10	09/12/2012	0.20 U	0.20 U	**1.0**	**4.7**	**13.0**	0.27 U	0.21 U	0.52 U	**0.200 I**
OLD-38-51D	F96890-1	09/13/2012	0.20 U	0.20 U	0.20 U	0.34 U	**1.3 I**	0.27 U	0.21 U	0.52 U	0.14 U
OLD-38-54C	F96891-1	09/12/2012	0.20 U	0.20 U	0.20 U	**13.7**	1.0 U	0.27 U	0.21 U	0.52 U	0.14 U
OLD-38-55D	F96891-2	09/12/2012	**0.48 I**	0.20 U	**0.29 I**	0.34 U	**8.5**	0.27 U	0.21 U	0.52 U	**0.358**
OLD-38-58(C2)	F96890-2	09/13/2012	0.20 U	0.20 U	0.20 U	**0.44 I**	**15.0**	0.27 U	0.21 U	0.52 U	0.14 U
OLD-38-59C	F96890-3	09/13/2012	0.20 U	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.52 U	0.14 U
OLD-38-60C	F96891-3	09/12/2012	0.20 U	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.52 U	0.14 U
OLD-38-61C	F96891-4	09/12/2012	0.20 U	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.52 U	0.14 U
OLD-38-62D	F96891-5	09/12/2012	0.20 U	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.52 U	0.14 U
OLD-38-63C	F96891-6	09/12/2012	0.20 U	**2.0**	**0.97 I**	**3.6**	**2.1 I**	0.27 U	0.21 U	0.52 U	**0.149 I**
OLD-38-64C	F96891-7	09/12/2012	0.20 U	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.52 U	0.14 U

NOTES:
µg/L - micrograms per liter; mg/L - milligrams per liter
U - indicates result less than method detection limit
I - indicates result greater than or equal to method detection limit but less than practical quantitation limit
GCTL - groundwater cleanup target level
NADC - natural attenuation default concentration



Study Area 36NW	Benzene	Ethylbenzene	Isopropyl-benzene	Methyl Tert Butyl Ether	Naphthalene	1,2,4-Trimethylbenzene	1,3,5-Trimethyl-benzene	Xylene (total)	TPH (C8-C40)
Well IDs/ GCTLs	1 µg/L	700 µg/l	0.8 µg/L	20 µg/L	14 µg/L	10 µg/L	10 µg/L	20 µg/L	5 mg/L
MW-38C	0.20 U	1.2	0.76 I	0.34 U	17.6	19.2	0.39 I	2.2 I	2.13
MW-41C	0.20 U	0.20 U	0.20 U	14.3	1.0 U	0.27U	0.21 U	0.52 U	0.14 U
MW-48C	0.20 U	0.20 U	1.00	4.7	13.0	0.27U	0.21 U	0.52 U	0.200 I
OLD-38-51D	0.20 U	0.20 U	0.20 U	0.34 U	1.3 I	0.27U	0.21 U	0.52 U	0.14 U
OLD-38-54C	0.20 U	0.20 U	0.20 U	13.7	1.0 U	0.27U	0.21 U	0.52 U	0.14 U
OLD-38-55D	0.48 I	0.20 U	0.29 I	0.34 U	8.5	0.27U	0.21 U	0.52 U	0.358 I
OLD-38-58 (C-2)	0.20 U	0.20 U	0.20 U	0.44 I	15.0	0.27U	0.21 U	0.52 U	0.14 U
OLD-38-63C	0.20 U	2.0	0.97 I	3.6	2.1 I	0.27U	0.21 U	0.52 U	0.14 U
OLD-38-64C	0.20 U	0.20 U	0.20 U	0.34 U	1.0 U	0.27U	0.21 U	0.52 U	0.149 I

LEGEND

Well location
Well ID number
OLD-##-##

Zone C Flow Direction
0.003
0.015
Contour Interval 1 foot

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1230 Hillcrest Street, Orlando, Florida 32803
407-896-6608 phone 407-896-1822 fax
Engineering Business No. 6899

September 2012
Quaterly Monitoring Report
Study Area 36, 36NW, and 38

Zone C Analytical Detection Results

FIGURE
4

F:\HYDRO\PROJECTS\2008\2008-10 NAVFAC Long-Term Monitoring Orlando\Data\Maps&Pictures\drawings\study Area 36NW\2012-09\SA36NW Figure 4 Contam C Zone.dwg

2.3 Selected Well Concentration Trend Analysis

Both Mann-Kendall and Linear Regression trend analyses were performed using statistical tools found in the Monitoring and Remediation Optimization System (MAROS) software (AFCEE, 2003), resulting in plume stability information. Documentation/details are provided at: http://www.gsi-net.com/software/MAROS_V2_1Manual.pdf . Individual well concentration trends were calculated for napthalene for the time period December 2008 to September 2012 (Appendix A). For this evaluation, a decision matrix developed by Groundwater Services, Inc. is used to determine the "Concentration Trend" category (plume stability) for selected wells. Depending on statistical indicators, the concentration trend is classified into six categories: Decreasing (D); Probably Decreasing (PD); Stable (S); No Trend (NT); Probably Increasing (PI); Increasing (I).

Appendix E and Table 5 below provides a summary of concentration trends for napthalene using historical data for selected monitor wells MW-38C and MW-48C at SA-36NW. At source well MW-38C, no historical trend is apparent, however recent naphthalene concentration has decreased to 17.6 µg/L. At plume well MW-48C the naphthalene concentration is stable to decreasing and has decreased below the GCTL to 13.0 µg/L.

Table 5 - Summary of Concentration Trends

Selected Wells/COCs	Napthalene	
	M-K	L-R
MW-38C	NT	NT
MW-48C	D	S

M-K - Mann-Kendall Trend
L-R - Linear Regression Trend
D = Decreasing; PD = Probably Decreasing; S = Stable; PI = Probably Increasing; I = Increasing; NT = No Trend.

Section 3 - Conclusions and Recommendations

This report presents the field sampling and laboratory analytical results for the September 2012 quarterly groundwater sampling round performed at Study Area 36NW (SA36NW)-Former Naval Training Center in Orlando, Florida. The following is a summary of the data interpretations and main conclusions from the sampling and analytical results:

3.1 Conclusions

1. On September 11, 2012 the groundwater flow direction, measured within the most contaminated Zone C (30-40 ft bls), was towards the east, which is typical.

2. The following table is a comparison of the exceedances during both the June and September 2012 sampling rounds.

Table 6 - Comparison of June and September 2012 COC exceedance results for SA36NW

Analyte Exceedances /Well IDs	Naphthalene	1,2,4-Trimethyl-benzene	Isopropyl-benzene	MTBE
62-777 GCTLs	14 µg/l	10 µg/l	0.8 µg/l	20 µg/l
MW-38C	42.1/**17.6**	14.1/**19.2**	3.7/ **0.76 I**	---
MW-41C	---	---	---	22.6/**14.3**
MW-48C	14.5/**13.0**	---	1.4/**1.0**	---
OLD-38-54C	---	---	---	---
OLD-38-58C2	10.8/**15.0**	---	---	---
OLD-38-63C	---	---	1.5/**0.97 I**	---

June 2012/**September 2012** Results

3. The highest concentrations of the COC for the September 2012 sampling round were from source monitor well MW-38C, which is typical. Monitor well MW-38C has the highest naphthalene concentration, which decreased from 42.1 µg/L during the June 2012 to 17.6 µg/L during September 2012. The highest benzene concentration typically occurs at monitor well OLD-38-54C, in the vicinity of the Hopper Lane and Broad Street Intersection, and was undetected during September 2012 sampling event.

4. Napthalene concentration trends were evaluated at monitor wells MW-38C and MW-48C. At source well MW-38C, no historical trend is apparent, however recent naphthalene concentration has decreased to 17.6 µg/L, and is nearing the GCTL. At plume well MW-48C, the

naphthalene concentration is stable to decreasing and has decreased below the GCTL to 13.0 µg/L.

5. The concentrations of the chlorinated solvents (PCE, TCE and 1,2 DCE) were below GCTL in all wells sampled.

3.2 Recommendations

1. Continued sampling and analysis is recommended in accordance with the Tetra Tech, Inc., December 2011 Sampling and Analysis Plan and OPT meeting updates. However, the OPT may consider reducing the quarterly sampling and analysis at SA36NW for selected wells and contaminants of concern.

Section 4 - Selected References

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APPENDIX A
Previous Analytical Results (2008-2012)

Study Area 36 NW Analytical Results 07-2008 to 09-2012		Chemical	Benzene	Isopropyl benzene	MTBE	Naphthalene	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	m,p-Xylene	o-Xylene	Xylene (Total)	TPH (C8-C40)
		CAS-RN	71-43-2	98-82-8	1634-04-4	91-20-3	95-63-6	108-67-8	-	-	95-47-6	-
		Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
Well ID	Lab ID	GCTL	1	0.8	20	14	10	10	20	20	20	5
		NADSC	100	8	200	140	100	100	200	200	200	50
MW-38C	F59220-1	08/04/2008	1 U	NA	0.26 U	88.8	NA	NA	64.1	50.6	114.7	2.76
	F60446-3	09/29/2008	0.59 I	NA	NA	NA	NA	NA	NA	NA	NA	2.29
	F62263-2	12/15/2008	0.40 U	1.7	0.26 U	58.1	56	14.1	7.6	13.4	21	1.37
	F63846-3	03/10/2009	0.40 U	0.20 U	0.26 U	76.9	65.2	21.4	18.3	29.5	47.8	1.45
	F65700-3	06/03/2009	0.40 U	0.58	0.26 U	30.3	22.5	5.5	1.4	4.4	5.8	0.94
	F68023-4	09/15/2009	0.41	0.82	0.26 U	14.9	14.2	2.5	1.5	1.6	3.1	1.07
	F70025-1	12/08/2009	0.41	0.33	0.26 U	10.3	4.6	1.3	1.5	0.72	2.22	0.77
	F72252-1	03/19/2010	0.21 I	0.69 I	0.25 U	3.7 I	2	0.21 U	0.34 U	0.39 I	0.39	0.901
	F75178-5	07/15/2010	0.22 I	4.2	0.25 U	4.5 I	55.3	8	104	21.7	125.7	0.558
	F77021-1	10/01/2010	0.21 I	11.7	0.25 U	28.7	183	29.2	182	25.5	207.5	1.91
	F78817-8	12/16/2010	0.20 U	13.8	0.34 U	52	66.5	8.5	38.1	4	42.1	1.85
	F80881-6	03/17/2011	0.24 I	9	0.34 U	98	26.7	1.8 I	67.3	4.5	71.8	1.27
	F83487-1	06/16/2011	0.38 I	16.3	0.34 U	123	146	28.8	95.7	6.2	101.9	1.9
	F86283-1	09/20/2011	0.23 I	3.1	0.34 U	127	44.9	5.2	NA	NA	12.3	1.65
	F89419-1	01/12/2012	0.20 U	1.1	0.34 U	27.5	12.4	0.35 I	NA	NA	2.6 I	1.16
	F92272-3	04/18/2012	0.20 U	5.1	0.34 U	66	12.1	0.21 U	NA	NA	2.7 I	1.95
	F94187-1	06/18/2012	0.20 U	3.7	0.34 U	42.1	14.1	0.21 U	NA	NA	2.8 I	1.67
	F96891-8	09/12/2012	0.20 U	0.76 I	0.34 U	17.6	19.2	0.39 I	NA	NA	2.2 I	2.13
MW-41C	F59220-3	08/04/2008	1 U	0.20 U	31.3	1.0 U	0.22 U	0.20 U	NA	NA	3 U	0.17 U
	F60446-1	09/29/2008	0.40 U	NA	NA	NA	NA	NA	NA	NA	1.2 U	0.16 U
	F62222-4	12/12/2008	0.40 U	0.20 U	11.2	1.0 U	0.22 U	0.20 U	NA	NA	NA	0.16 U
	F63934-4	03/11/2009	0.40 U	0.20 U	22.4	1.0 U	0.22 U	0.20 U	NA	NA	NA	0.16 U
	F65726-5	06/04/2009	0.40 U	0.20 U	25.4	1.0 U	0.22 U	0.20 U	NA	NA	NA	0.16 U
	F68077-4	09/16/2009	0.40 U	0.20 U	33.8	1.0 U	0.22 U	0.20 U	NA	NA	NA	0.16 U
	F70025-5	12/09/2009	0.40 U	0.20 U	29.3	1.0 U	0.22 U	0.20 U	NA	NA	NA	0.16 U
	F86298-1	09/23/2011	0.20 U	0.20 U	20.7	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F88842-2	12/15/2011	0.20 U	0.20 U	21.2	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F92272-2	04/18/2012	0.20 U	0.20 U	16.9	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F94187-2	06/18/2012	0.20 U	0.20 U	22.6	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F96891-9	09/12/2012	0.20 U	0.20 U	14.3	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
MW-48C	F59220-10	08/05/2008	62.3	NA	NA	NA	0.65 I	0.20 U	0.78 U	0.37 U	1.15 U	0.298
	F60484-3	09/30/2008	41.8	NA	NA	NA	0.65 I	0.20 U	0.78 U	0.37 U	1.15 U	0.369
	F62222-2	12/12/2008	15.1	1.9	21.4	8.6	0.65 I	0.20 U	0.78 U	0.37 U	1.15 U	0.228 I
	F63934-1	03/11/2009	8.2	3.9	12	23.2	0.93	0.24	0.78 U	0.37 U	1.15 U	0.198
	F65700-2	06/03/2009	3.2	4.6	17	44.8	1.4	0.2	0.78 U	0.37 U	1.15 U	0.319
	F68077-1	09/15/2009	0.97	2.7	18.1	52	1	0.20 U	0.78 U	0.37 U	1.15 U	0.262
	F68077-3	09/15/2009	1	1.7	19.7	35.1	0.61	0.20 U	0.78 U	0.37 U	1.15 U	0.287
	F70100-3	12/11/2009	0.66	2	11.5	47.6	NA	0.20 U	0.78 U	0.37 U	1.15 U	0.252
	F72349-6	03/23/2010	0.21 U	1.5	13.4	62.3	0.43 I	0.21 U	0.34 U	0.20 U	0.54 U	0.239 I
	F75178-9	07/15/2010	0.55 I	1.5	13.1	61.2	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.307
	F77021-2	10/01/2010	0.21 I	1.3	10.2	52.2	0.56 I	0.21 U	0.34 U	0.20 U	0.54 U	0.353
	F78817-1	12/16/2010	0.20 U	0.54 I	7.7	41.9	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.28
	F80881-8	03/17/2011	0.20 U	0.65 I	6.8	36.2	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.164 I
	F83487-2	06/16/2011	0.34 I	1.6	10.7	39	0.61 I	0.21 U	0.32 U	0.20 U	0.52 U	0.276
	F86283-2	09/20/2011	0.21 I	1.4	6.6	31.3	0.38 I	0.21 U	NA	NA	0.52 U	0.287
	F88842-1	12/15/2011	0.20 U	1.7	5.4	23.1	0.41 I	0.21 U	NA	NA	0.52 U	0.208 I
	F92272-1	04/18/2012	0.20 U	1.3	3.4	18.6	0.34 I	0.21 U	NA	NA	0.52 U	0.14 U
	F94187-3	06/18/2012	0.20 U	1.4	4.2	14.5	0.30 I	0.21 U	NA	NA	0.52 U	0.237 I
	F96891-10	09/12/2012	0.20 U	1	4.7	13	0.27 U	0.21 U	NA	NA	0.52 U	0.200 I
OLD-38-51D	F59055-2	07/28/2008	1.9	NA	NA	NA	NA	NA	NA	NA	NA	0.24 U
	F60370-8	09/24/2008	1.9	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U
	F62264-5	12/15/2008	3.4	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U
	F63933-3	03/12/2009	0.40 U	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U
	F65727-2	06/05/2009	1.1	0.35	0.26 U	1.0 U	0.22 U	NA	NA	NA	NA	0.16 U
	F67999-2	09/14/2009	0.40 U	0.31	0.49	1.0 U	0.22 U	NA	NA	NA	NA	0.17 U
	F70164-2	12/14/2009	0.40 U	0.68U	0.55	1.0 U	0.22 U	0.20 U	0.78U	0.37 U	1.15 U	NA
	F72254-6	03/18/2010	0.21 U	0.23 I	0.45 I	1.0 U	0.21 U	0.20 U	0.34 U	0.20 U	0.54 U	0.16 U
	F75178-6	07/15/2010	0.21 U	0.31 I	0.37 I	1.0 U	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.16 U
	F77150-3	10/06/2010	0.21 U	0.23 I	0.44 I	1.0 U	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.16 U
	F78817-3	12/16/2010	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F80881-11	03/17/2011	0.20 U	0.20 U	0.39 I	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F83486-6	06/16/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F86282-2	09/20/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F88840-1	12/15/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.15 U
	F92271-1	04/18/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F94186-6	06/18/2012	0.20 U	0.20 U	0.34 U	1.5 I	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F96890-1	09/13/2012	0.20 U	0.20 U	0.34 U	1.3 I	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U

Study Area 36 NW Analytical Results 07-2008 to 09-2012		Chemical	Benzene	Isopropyl benzene	MTBE	Naphthalene	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	m,p-Xylene	o-Xylene	Xylene (Total)	TPH (C8-C40)
		CAS-RN	71-43-2	98-82-8	1634-04-4	91-20-3	95-63-6	108-67-8	-	-	95-47-6	-
		Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
Well ID	Lab ID	GCTL	1	0.8	20	14	10	10	20	20	20	5
		NADSC	100	8	200	140	100	100	200	200	200	50
OLD-38-54C	F59055-8	07/28/2008	26.2	NA	NA	NA	NA	NA	NA	NA	NA	0.212 I
	F60370-3	09/25/2008	3	NA	NA	NA	NA	NA	NA	NA	NA	0.191
	F62303-4	12/16/2008	0.40 U	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U
	F63933-6	03/12/2009	0.40 U	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U
	F65899-5	06/08/2009	0.40 U	0.20 U	6.9	1.0 U	0.22 U	NA	NA	NA	NA	0.16 U
	F67999-13	09/14/2009	0.40 U	0.20 U	6.9	3.7	0.22 U	NA	NA	NA	NA	0.16 U
	F70164-6	12/14/2009	0.5	0.20 U	8.6	3	0.22 U	0.20 U	0.78 U	0.37 U	1.15 U	0.164
	F70164-7	12/14/2009	0.40 U	0.20 U	0.26 U	1.0 U	0.22 U	0.20 U	0.78 U	0.37 U	1.15 U	0.16 U
	F72254-10	03/18/2010	1.1	0.20 U	7.2	3.3 I	0.21 U	0.20 U	0.34 U	0.20 U	0.54 U	0.16 U
	F75178-8	07/15/2010	3.5	0.20 U	10.5	3.6 I	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.16 U
	F77021-3	10/01/2010	4	0.20 U	9.8	1.9 I	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.16 U
	F78817-2	12/16/2010	2.7	0.20 U	8.2	1.1 I	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F80881-10	03/17/2011	2.5	0.20 U	10.1	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F83486-4	06/16/2011	5.5	0.20 U	10.6	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F86282-1	09/20/2011	8.1	0.20 U	12.5	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.156 I
	F88841-4	12/16/2011	6.2	0.20 U	11.1	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F92271-3	04/18/2012	1.4	0.20 U	13.2	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F94186-5	06/18/2012	0.24 I	0.20 U	15.8	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F96891-1	09/12/2012	0.20 U	0.20 U	13.7	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
OLD-38-55D	F59055-1	07/28/2008	14.6	NA	NA	NA	NA	NA	NA	NA	NA	0.576
	F60370-11	09/24/2008	7.2	NA	NA	NA	NA	NA	NA	NA	NA	0.576
	F62264-3	12/15/2008	2.3	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U
	F63933-7	03/12/2009	0.85	NA	NA	NA	NA	NA	NA	NA	NA	0.362
	F65727-8	06/05/2009	0.64	0.5	0.26 U	52.4	0.34	NA	NA	NA	NA	0.319
	F67999-12	09/14/2009	0.64	0.5	0.26 U	52.4	0.34	NA	NA	NA	NA	0.319
	F70164-8	12/14/2009	1.9	1.1	0.26 U	113	0.22 U	0.20 U	0.78 U	0.37 U	1.15 U	0.683
	F72254-9	03/18/2010	0.52 I	0.24 I	0.25 U	68.6	0.21 U	0.20 U	0.34 U	0.20 U	0.54 U	0.393
	F75178-7	07/15/2010	0.75 I	0.38 I	0.25 U	53.3	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.378
	F77021-4	10/01/2010	0.61 I	0.60 I	0.25 U	61.1	0.37 I	0.21 U	0.34 U	0.20 U	0.54 U	0.485
	F78817-12	12/16/2010	0.47 I	0.33 I	0.34 U	65	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.437
	F80881-9	03/17/2011	0.23 I	0.20 U	0.34 U	14.7	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.287
	F83486-5	06/16/2011	0.25 I	0.20 U	0.34 U	7.2	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.249
	F86282-3	09/20/2011	0.20 U	0.20 U	0.34 U	4.5 I	0.27 U	0.21 U	NA	NA	0.52 U	0.25
	F88841-3	12/16/2011	0.20 U	0.20 U	0.34 U	4.6 I	0.27 U	0.21 U	NA	NA	0.52 U	0.180 I
	F92271-4	04/18/2012	0.20 U	0.20 U	0.34 U	1.4 I	0.27 U	0.21 U	NA	NA	0.52 U	0.209 I
	F94186-7	06/18/2012	0.22 I	0.20 U	0.34 U	2.2 I	0.27 U	0.21 U	NA	NA	0.52 U	0.220 I
	F96891-2	09/12/2012	0.48 I	0.29 I	0.34 U	8.5	0.27 U	0.21 U	NA	NA	0.52 U	0.358
OLD-38-58(C-2)	F59093-13	07/29/2008	62.2	NA	NA	NA	NA	NA	NA	NA	NA	0.24 U
	F60370-1	09/25/2008	39.8	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U
	F62303-2	12/16/2008	42.9	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U
	F63933-10	03/12/2009	26	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U
	F65899-2	06/08/2009	12.4	1	4.6	2.8	0.22	NA	NA	NA	NA	0.16 U
	F67999-5	09/14/2009	13.9	1.1	7.9	6.3	0.22 U	NA	NA	NA	NA	0.172
	F70203-6	12/15/2009	8.6	2	5	7.1	0.22 U	0.20 U	0.78 U	0.37 U	1.15 U	0.24
	F72254-12	03/18/2010	5.9	0.72 I	3.9	10.3	0.21 U	0.20 U	0.34 U	0.20 U	0.54 U	0.16 U
	F75178-10	07/15/2010	10.8	2.3	6.7	34.3	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.345
	F77150-4	10/06/2010	3.9	3	4.8	42.1	0.64 I	0.21 U	0.34 U	0.20 U	0.54 U	0.416
	F78817-10	12/16/2010	1	0.55 I	1.9	15.2	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.210 I
	F80881-5	03/17/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F83486-7	06/16/2011	1.1	1.2	2.7	25.9	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.276
	F86282-4	09/20/2011	0.20 U	0.55 I	1.1	16.7	0.27 U	0.21 U	NA	NA	0.52 U	0.236 I
	F88840-5	12/15/2011	0.20 U	0.32 I	0.82 I	12.4	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F92271-2	04/18/2012	0.20 U	0.37 I	1.1	11.3	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F94186-8	06/18/2012	0.20 U	0.22 I	0.75 I	10.8	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F96890-2	09/13/2012	0.20 U	0.20 U	0.44 I	15	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
OLD-38-59C	F60370-15	09/25/2008	537	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F62303-5	12/16/2008	782	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F63990-1	03/13/2009	463	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F65727-4	06/05/2009	257	1.0 U	12.4	5.0 U	1.1 U	NA	NA	NA	NA	NA
	F67999-6	09/14/2009	198	1.0 U	15.5	5.0 U	1.1 U	NA	NA	NA	NA	NA
	F70203-1	12/15/2009	393	1.0 U	38.7	11	1.1 U	1.0 U	3.9 U	1.9 U	5.8 U	NA
	F72254-1	03/18/2010	71.9	0.20 U	8	1.0 U	0.21 U	0.20 U	0.34 U	0.20 U	0.54 U	NA
	F75178-4	07/15/2010	0.85 I	0.20 U	1.7	1.0 U	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.16 U
	F77021-6	10/01/2010	0.21 U	0.20 U	0.81 I	1.0 U	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.16 U
	F78817-6	12/16/2010	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F80881-2	03/17/2011	0.20 U	0.20 U	1.4	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F83486-2	06/16/2011	0.20 U	0.20 U	0.96 I	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F86155-2	09/19/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F88840-2	12/15/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F92167-1	04/16/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F94186-4	06/18/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F96890-3	09/13/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U

Study Area 36 NW Analytical Results 07-2008 to 09-2012		Chemical	Benzene	Isopropyl benzene	MTBE	Naphthalene	1,2,4-Trimethyl benzene	1,3,5-Trimethyl benzene	m,p-Xylene	o-Xylene	Xylene (Total)	TPH (C8-C40)
		CAS-RN	71-43-2	98-82-8	1634-04-4	91-20-3	95-63-6	108-67-8	-	-	95-47-6	-
		Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
Well ID	Lab ID	GCTL	1	0.8	20	14	10	10	20	20	20	5
		NADSC	100	8	200	140	100	100	200	200	200	50
OLD-38-60C	F60370-14	09/25/2008	0.40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F62303-7	12/16/2008	0.40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F63990-2	03/13/2009	0.40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F65727-9	06/05/2009	0.40 U	0.20 U	0.26 U	1.0 U	0.22 U	NA	NA	NA	NA	NA
	F67999-14	09/14/2009	0.40 U	0.20 U	0.26 U	1.0 U	0.22 U	NA	NA	NA	NA	NA
	F72254-4	03/18/2010	0.21 U	0.20 U	0.25 U	1.0 U	0.21 U	0.20 U	0.34 U	0.20 U	0.54 U	NA
	F75178-3	07/15/2010	0.21 U	0.20 U	0.25 U	1.0 U	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.16 U
	F77021-5	10/01/2010	0.21 U	0.20 U	0.25 U	1.0 U	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.16 U
	F78866-10	12/21/2010	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F80881-1	03/17/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F84134-1	07/11/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F86155-1	09/19/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F88840-4	12/15/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F92167-2	04/16/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F94185-1	06/15/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F96891-3	09/12/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
OLD-38-61C	F60370-13	09/25/2008	0.40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F62303-6	12/16/2008	0.40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F63990-3	03/13/2009	0.40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F65727-10	06/05/2009	0.40 U	0.20 U	0.26 U	1.0 U	0.22 U	NA	NA	NA	NA	NA
	F67999-15	09/14/2009	0.40 U	0.20 U	0.26 U	1.0 U	0.22 U	NA	NA	NA	NA	NA
	F70203-3	12/15/2009	0.40 U	**0.98**	0.26 U	1.0 U	0.22 U	0.20 U	0.78 U	0.37 U	1.15 U	NA
	F72254-3	03/18/2010	0.21 U	0.20 U	0.25 U	1.0 U	0.21 U	0.20 U	0.34 U	0.20 U	0.54 U	NA
	F75178-1	07/15/2010	0.21 U	0.20 U	0.25 U	1.0 U	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	**0.160 I**
	F77150-2	10/06/2010	0.21 U	0.20 U	0.25 U	1.0 U	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.16 U
	F78817-4	12/16/2010	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	**0.143 I**
	F80881-3	03/17/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F83486-1	06/16/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F86282-6	09/20/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F88841-1	12/16/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F92167-6	04/16/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F94186-1	06/18/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F96891-4	09/12/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
OLD-38-62D	F60370-12	09/25/2008	**37.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F62303-8	12/16/2008	**12.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F63990-4	03/13/2009	0.40 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
	F65727-5	06/05/2009	**0.67 I**	**0.54 I**	0.26 U	1.0 U	0.22 U	NA	NA	NA	NA	NA
	F67999-7	09/14/2009	**0.86**	**0.29**	**0.48**	1.0 U	0.22 U	NA	NA	NA	NA	NA
	F70203-2	12/15/2009	**0.53**	**0.2**	**0.33**	1.0 U	0.22 U	0.20 U	0.78 U	0.37 U	1.15 U	NA
	F72254-2	03/18/2010	0.21 U	0.20 U	0.25 U	1.0 U	0.21 U	0.20 U	0.34 U	0.20 U	0.54 U	NA
	F75178-2	07/15/2010	0.21 U	**0.46 I**	0.25 U	1.0 U	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.16 U
	F77150-1	10/06/2010	0.21 U	**0.46 I**	0.25 U	**1.6 I**	0.22 U	0.21 U	0.34 U	0.20 U	0.54 U	0.17 U
	F78817-5	12/16/2010	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F80881-4	03/17/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F83486-3	06/16/2011	0.20 U	**0.23 I**	0.34 U	1.0 U	0.27 U	0.21 U	0.32 U	0.20 U	0.52 U	0.14 U
	F86282-5	09/20/2011	0.20 U	**0.27 I**	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	**0.176 I**
	F88840-3	12/15/2011	0.20 U	**0.20 I**	0.34 U	**2.3 I**	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F92167-5	04/16/2012	0.20 U	**0.46 I**	0.34 U	**8.8**	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F94186-3	06/18/2012	0.20 U	**0.20 I**	0.34 U	**10.6**	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F96891-5	09/12/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
OLD-38-63C	F86282-7	09/20/2011	0.20 U	**2.1**	**9.7**	**1.6 I**	0.27 U	0.21 U	NA	NA	0.52 U	**0.231 I**
	F88841-2	12/16/2011	0.20 U	**2.1**	**9.1**	**2.0 I**	0.27 U	0.21 U	NA	NA	0.52 U	**0.151 I**
	F92167-3	04/16/2012	0.20 U	**2**	**6.7**	**2.9 I**	0.27 U	0.21 U	NA	NA	0.52 U	**0.161 I**
	F94186-2	06/18/2012	0.20 U	**1.5**	**6.2**	**3.1 I**	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F96891-6	09/12/2012	0.20 U	**0.97 I**	**3.6**	**2.1 I**	0.27 U	0.21 U	NA	NA	0.52 U	**0.149 I**
OLD-38-64C	F86282-8	09/20/2011	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	**0.156 I**
	F88840-6	12/15/2011	0.20 U	0.20 U	0.34 U	**2.3 I**	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F92167-4	04/16/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U
	F94185-2	06/15/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	**0.336**
	F96891-7	09/12/2012	0.20 U	0.20 U	0.34 U	1.0 U	0.27 U	0.21 U	NA	NA	0.52 U	0.14 U

NOTES:
µg/L - micrograms per liter; mg/L - milligrams per liter
U - indicates result less than method detection limit
I - indicates result greater than or equal to method detection limit but less than practical quantitation limit
GCTL - groundwater cleanup target level
NADC - natural attenuation default concentration
NA-Not analyzed

APPENDIX B
Monitor Well Purge Forms

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME: Groundwater Sampling at Study Area 36NW		SITE LOCATION: Orlando	
WELL NO: MW-38C	SAMPLE ID: E137F4F4646547CE8B21E65460070735		DATE: 09/12/2012

PURGING DATA

WELL DIAMETER (inches): 2.00	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 30-35	STATIC DEPTH TO WATER (feet): 6.72	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (35.50 feet – 6.72 feet) X 0.16 gallons/foot = 4.70 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 36.00 feet)+ 0.15 gallon = 0.24 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32.00	PURGING INITIATED AT: 12:56	PURGING ENDED AT: 13:15	TOTAL VOLUME PURGED (gallons): 1.90

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
12:59		0.30	0.101	6.72	6.06	28.25	1,572.00	0.18	26.50	-157.00	yellow	strong HC
13:02	0.30	0.60	0.099	6.80	6.06	28.70	1,579.00	0.14	31.10	-162.00	yellow	strong HC
13:05	0.30	0.90	0.097	6.80	6.03	27.66	1,611.00	0.17	34.20	-162.00	yellow	strong HC
13:08	0.30	1.20	0.099	6.80	6.02	27.45	1,625.00	0.15	16.70	-165.00	yellow	strong HC
13:11	0.30	1.50	0.098	6.70	6.01	27.30	1,648.00	0.15	14.80	-168.00	yellow	strong HC
13:14	0.30	1.80	0.097	6.70	6.00	27.17	1,639.00	0.14	13.60	-170.00	yellow	strong HC

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .14	TEMP.(°C): 27.21	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 1635	pH: 6.00	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -170	TURB(NTU): 13.3	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Damian Allen	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 13:15	SAMPLING ENDED AT: 13:42
PUMP OR TUBING DEPTH IN WELL (feet): 32.00	SAMPLE PUMP FLOW RATE (mL per minute): 378.54	TUBING MATERIAL CODE: PPE	
FIELD DECONTAMINATION: ☐ Y ☑ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☑ Y ☐ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
MW-38C	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	6.00	TRPH	Grab

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME:	Groundwater Sampling at Study Area 36NW	SITE LOCATION:	Orlando
WELL NO:	MW-41C	SAMPLE ID: 5ACE96BDC71C443F8BDF55C2DC990257	DATE: 09/12/2012

PURGING DATA

WELL DIAMETER (inches): 2.00	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 30-35	STATIC DEPTH TO WATER (feet): 8.16	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (35.50 feet – 8.16 feet) X 0.16 gallons/foot = 4.46 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 33.00 feet)+ 0.15 gallon = 0.23 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.00	PURGING INITIATED AT: 13:45	PURGING ENDED AT: 14:15	TOTAL VOLUME PURGED (gallons): 2.80

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
13:49		0.30	0.079	8.28	9.41	28.12	370.00	0.38	48.20	-139.00	yellow	none
13:52	0.30	0.60	0.092	8.28	8.75	27.77	362.00	0.22	44.60	-125.00	yellow	none
13:55	0.30	0.90	0.096	8.28	7.10	27.70	330.00	0.22	23.10	-100.00	yellow	none
13:58	0.30	1.20	0.095	8.28	6.45	27.67	316.00	0.22	17.20	-101.00	yellow	none
14:01	0.30	1.50	0.096	8.28	6.40	27.59	297.00	0.18	14.30	-101.00	yellow	none
14:05	0.30	1.80	0.094	8.28	6.29	27.64	287.00	0.15	15.70	-100.00	yellow	none
14:08	0.30	2.10	0.094	8.28	6.25	27.84	276.00	0.13	11.10	-99.00	yellow	none
14:11	0.30	2.40	0.094	8.28	6.20	27.85	270.00	0.12	8.30	-101.00	yellow	none
14:14	0.30	2.70	0.095	8.28	6.11	27.56	265.00	0.12	11.60	-100.00	yellow	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .11	TEMP.(°C): 27.54	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 262	pH: 6.17	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -101	TURB(NTU): 13.7	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Damian Allen	SAMPLER(S) SIGNATURES: Dan Allen	SAMPLING INITIATED AT: 14:15	SAMPLING ENDED AT: 14:27
PUMP OR TUBING DEPTH IN WELL (feet): 29.00	SAMPLE PUMP FLOW RATE (mL per minute): 353.31	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☐ Y ☑ N
FIELD-FILTERED: ☐ Y ☑ N
Filtration Equipment Type:
FILTER SIZE: NA
DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
MW-41C	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	6.17	TRPH	Grab

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME: Groundwater Sampling at Study Area 36NW		SITE LOCATION: Orlando	
WELL NO: MW-48C	SAMPLE ID: 6B3EBAED18D44C24870443F60CE8C687		DATE: 09/12/2012

PURGING DATA

WELL DIAMETER (inches): 2.00	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 31-36	STATIC DEPTH TO WATER (feet): 8.10	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (36.50 feet – 8.10 feet) X 0.16 gallons/foot = 4.63 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 37.00 feet)+ 0.15 gallon = 0.17 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33.00	PURGING INITIATED AT: 14:39	PURGING ENDED AT: 14:49	TOTAL VOLUME PURGED (gallons): 1.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
14:42		0.30	0.116	8.10	4.81	27.49	183.00	0.65	2.80	-35.00	clear	none
14:45	0.30	0.60	0.104	8.10	4.64	27.16	185.00	0.51	5.10	-41.00	clear	none
14:48	0.30	0.90	0.099	8.10	4.61	26.86	187.00	0.34	5.90	-47.00	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .36	TEMP.(°C): 26.83	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 183	pH: 4.64	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -43	TURB(NTU): 7.1	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Damian Allen	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 14:49	SAMPLING ENDED AT: 15:03
PUMP OR TUBING DEPTH IN WELL (feet): 33.00	SAMPLE PUMP FLOW RATE (mL per minute): 378.54	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☐ Y ☑ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
MW-48C	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	4.64	TRPH	Grab

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME: Groundwater Sampling at SA38		SITE LOCATION: Orlando	
WELL NO: OLD-38-51D	SAMPLE ID: C30F0DFDC9DA48A5B979B3F138483E9E		DATE: 09/13/2012

PURGING DATA

WELL DIAMETER (inches): 1.00	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 45-50	STATIC DEPTH TO WATER (feet): 8.75	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (50.50 feet – 8.75 feet) X 0.04 gallons/foot = 1.70 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 51.00 feet)+ 0.15 gallon = 0.18 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47.00	PURGING INITIATED AT: 13:29	PURGING ENDED AT: 13:45	TOTAL VOLUME PURGED (gallons): 1.60

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
13:32		0.30	0.105	8.75	4.16	27.39	234.00	0.39	54.20	0.00	milky	none
13:35	0.30	0.60	0.112	8.75	4.14	27.27	237.00	0.28	36.90	-5.00	milky	none
13:38	0.30	0.90	0.099	8.75	4.17	27.27	238.00	0.24	9.80	-11.00	clear	none
13:41	0.30	1.20	0.103	8.75	4.19	27.22	238.00	0.20	14.20	-14.00	clear	none
13:45	0.30	1.50	0.098	8.75	4.10	27.17	238.00	0.18	13.60	-18.00	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .18	TEMP.(°C): 27.18	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 237	pH: 4.12	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -19	TURB(NTU): 17.3	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Damian Allen	SAMPLER(S) SIGNATURES: Da All	SAMPLING INITIATED AT: 13:45	SAMPLING ENDED AT: 14:01
PUMP OR TUBING DEPTH IN WELL (feet): 47.00	SAMPLE PUMP FLOW RATE (mL per minute): 378.54	TUBING MATERIAL CODE: PPE	
FIELD DECONTAMINATION: ☐ Y ☑ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
OLD-38-51D	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	4.12	TRPH	Grab

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME: Groundwater Sampling at SA38		SITE LOCATION: Orlando	
WELL NO: OLD-38-54C	SAMPLE ID: 821C43CCE3E64B598720C397E3AE4704		DATE: 09/12/2012

PURGING DATA

WELL DIAMETER (inches): 1.00	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 35-40	STATIC DEPTH TO WATER (feet): 6.65	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (40.50 feet – 6.65 feet) X 0.04 gallons/foot = 1.38 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 41.00 feet)+ 0.15 gallon = 0.17 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 37.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 37.00	PURGING INITIATED AT: 15:13	PURGING ENDED AT: 15:23	TOTAL VOLUME PURGED (gallons): 1.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
15:16		0.30	0.095	6.63	4.27	27.57	108.00	0.30	6.90	13.00	clear	none
15:19	0.30	0.60	0.099	6.63	4.23	27.35	111.00	0.24	0.00	11.00	clear	none
15:22	0.30	0.90	0.096	6.63	4.18	27.20	113.00	0.20	0.00	6.00	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .2	TEMP.(°C): 27.15	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 114	pH: 4.22	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): 6	TURB(NTU): 0	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Damian Allen	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 15:23	SAMPLING ENDED AT: 15:40
PUMP OR TUBING DEPTH IN WELL (feet): 37.00	SAMPLE PUMP FLOW RATE (mL per minute): 378.54	TUBING MATERIAL CODE: PPE	
FIELD DECONTAMINATION: ☐ Y ☑ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
OLD-38-54C	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	4.22	TRPH	Grab

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME: Groundwater Sampling at SA38		SITE LOCATION: Orlando	
WELL NO: OLD-38-55D	SAMPLE ID: 30689C467ED04B5288A106CA620CF9DE		DATE: 09/12/2012

PURGING DATA

WELL DIAMETER (inches): 1.00	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 45-50	STATIC DEPTH TO WATER (feet): 6.60	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (50.81 feet – 6.60 feet) X 0.04 gallons/foot = 1.80 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 51.00 feet)+ 0.15 gallon = 0.18 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47.00	PURGING INITIATED AT: 15:43	PURGING ENDED AT: 15:55	TOTAL VOLUME PURGED (gallons): 1.30

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
15:46		0.30	0.112	6.60	4.50	27.77	213.00	0.67	27.40	-53.00	clear	none
15:49	0.30	0.60	0.097	6.60	4.51	27.05	218.00	0.64	11.30	-61.00	clear	none
15:52	0.30	0.90	0.102	6.60	4.55	26.82	215.00	0.59	16.00	-64.00	clear	none
15:55	0.30	1.20	0.103	6.60	4.50	26.78	214.00	0.52	3.50	-66.00	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .51	TEMP.(°C): 26.64	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 214	pH: 4.44	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -66	TURB(NTU): 3.3	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Damian Allen	SAMPLER(S) SIGNATURES: Damian Allen	SAMPLING INITIATED AT: 15:55	SAMPLING ENDED AT: 16:03
PUMP OR TUBING DEPTH IN WELL (feet): 47.00	SAMPLE PUMP FLOW RATE (mL per minute): 410.09	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☐ Y ☑ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
OLD-38-55D	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	4.44	TRPH	Grab

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME: Groundwater Sampling at SA38		SITE LOCATION: Orlando	
WELL NO: OLD-38-58 (C-2)	SAMPLE ID: F6DA61932578420482224DC4DD5DBA4A		DATE: 09/13/2012

PURGING DATA

WELL DIAMETER (inches): 0.38	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 40-45	STATIC DEPTH TO WATER (feet): 0.00	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (46.00 feet – 0.00 feet) X 0.01 gallons/foot = 0.26 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 49.00 feet)+ 0.15 gallon = 0.18 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45.00	PURGING INITIATED AT: 14:19	PURGING ENDED AT: 14:41	TOTAL VOLUME PURGED (gallons): 2.20

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
14:22		0.30	0.112	0.00	5.41	28.25	290.00	0.45	9.20	-134.00	clear	none
14:25	0.30	0.60	0.103	0.00	5.47	28.17	339.00	0.38	7.20	-147.00	yellow	none
14:28	0.30	0.90	0.097	0.00	5.54	28.06	369.00	0.33	5.10	-156.00	yellow	none
14:31	0.30	1.20	0.096	0.00	5.56	28.06	391.00	0.32	4.80	-161.00	yellow	none
14:34	0.30	1.50	0.097	0.00	5.58	27.93	410.00	0.22	4.00	-165.00	yellow	none
14:38	0.30	1.80	0.096	0.00	5.60	27.82	420.00	0.22	2.80	-169.00	yellow	none
14:41	0.30	2.10	0.097	0.00	5.59	27.71	425.00	0.19	2.40	-172.00	yellow	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .19	TEMP.(°C): 27.68	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 428	pH: 5.61	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -172	TURB(NTU): 2.6	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Damian Allen	SAMPLER(S) SIGNATURES: Da All	SAMPLING INITIATED AT: 14:41	SAMPLING ENDED AT: 15:01
PUMP OR TUBING DEPTH IN WELL (feet): 45.00	SAMPLE PUMP FLOW RATE (mL per minute): 378.54	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☐ Y ☑ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
OLD-38-58 (C-2)	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	5.61	TRPH	Grab

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

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GROUNDWATER SAMPLING LOG

SITE NAME:	Groundwater Sampling at SA38		SITE LOCATION:	Orlando	
WELL NO:	OLD-38-59C	SAMPLE ID:	A6260F0640DB420593ADEBE2204D2FE0	DATE:	09/13/2012

PURGING DATA

WELL DIAMETER (inches): 1.50	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 35-40	STATIC DEPTH TO WATER (feet): 3.00	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (40.00 feet – 3.00 feet) X 0.09 gallons/foot = 3.40 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 41.00 feet)+ 0.15 gallon = 0.17 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 37.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 37.00	PURGING INITIATED AT: 15:38	PURGING ENDED AT: 16:03	TOTAL VOLUME PURGED (gallons): 1.60

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
15:42		0.30	0.076	3.00	4.88	29.44	189.00	0.58	0.80	11.00	clear	none
15:47	0.30	0.60	0.070	3.00	4.62	29.65	190.00	0.47	2.50	-10.00	clear	none
15:53	0.30	0.90	0.062	3.00	4.36	29.19	196.00	0.33	0.80	-19.00	clear	none
15:57	0.30	1.20	0.065	3.00	4.32	28.84	195.00	0.34	3.10	-23.00	clear	none
16:01	0.30	1.50	0.065	3.00	4.37	28.84	199.00	0.34	1.40	-24.00	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .31	TEMP.(°C): 29.01	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 195	pH: 4.31	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -25	TURB(NTU): 18.8	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Damian Allen	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 16:03	SAMPLING ENDED AT: 16:11
PUMP OR TUBING DEPTH IN WELL (feet): 37.00	SAMPLE PUMP FLOW RATE (mL per minute): 242.27	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☐ Y ☑ N
FIELD-FILTERED: ☐ Y ☑ N FILTER SIZE: NA DUPLICATE: ☐ Y ☑ N
Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
OLD-38-59C	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	4.31	TRPH	Grab

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME: Groundwater Sampling at SA38		SITE LOCATION: Orlando	
WELL NO: OLD-38-60C	SAMPLE ID: A003E6CA2BAB4B0FBD31B29FEE036BCB		DATE: 09/12/2012

PURGING DATA

WELL DIAMETER (inches): 1.50	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 30-35	STATIC DEPTH TO WATER (feet): 4.10	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (35.00 feet – 4.10 feet) X 0.09 gallons/foot = 2.84 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 36.00 feet)+ 0.15 gallon = 0.24 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32.00	PURGING INITIATED AT: 15:29	PURGING ENDED AT: 15:42	TOTAL VOLUME PURGED (gallons): 1.30

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
15:32		0.30	0.123	4.10	4.34	26.52	169.00	1.09	5.16	-30.10	clear	none
15:35	0.30	0.60	0.110	4.10	4.16	26.08	185.00	0.65	1.82	-37.90	clear	none
15:38	0.30	0.90	0.102	4.10	4.21	26.09	187.00	0.52	0.95	-49.50	clear	none
15:41	0.30	1.20	0.103	4.10	4.23	26.05	187.00	0.48	0.64	-54.80	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .47	TEMP.(°C): 26.03	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 187	pH: 4.22	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -55.8	TURB(NTU): .79	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Katie Ballew	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 15:42	SAMPLING ENDED AT: 15:55
PUMP OR TUBING DEPTH IN WELL (feet): 32.00	SAMPLE PUMP FLOW RATE (mL per minute): 378.54	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☐ Y ☑ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
OLD-38-60C	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	4.22	TRPH	APP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME: Groundwater Sampling at SA38		SITE LOCATION: Orlando	
WELL NO: OLD-38-61C	SAMPLE ID: 45802E8235BA4BDE92E60EA219C1DBD4		DATE: 09/12/2012

PURGING DATA

WELL DIAMETER (inches): 1.50	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 30-35	STATIC DEPTH TO WATER (feet): 4.85	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (35.00 feet – 4.85 feet) X 0.09 gallons/foot = 2.77 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 36.00 feet)+ 0.15 gallon = 0.17 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32.00	PURGING INITIATED AT: 14:01	PURGING ENDED AT: 14:14	TOTAL VOLUME PURGED (gallons): 1.30

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
14:04		0.30	0.124	4.90	5.18	27.74	245.00	0.71	1.84	-73.60	clear	none
14:07	0.30	0.60	0.109	4.90	5.20	27.29	252.00	0.58	1.23	-82.50	clear	none
14:10	0.30	0.90	0.109	4.90	5.21	27.22	252.00	0.51	1.38	-88.40	clear	none
14:13	0.30	1.20	0.105	4.90	5.22	27.29	252.00	0.46	0.97	-91.30	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .46	TEMP.(°C): 27.29	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 252	pH: 5.23	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -91.7	TURB(NTU): 1.55	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Katie Ballew	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 14:14	SAMPLING ENDED AT: 14:30
PUMP OR TUBING DEPTH IN WELL (feet): 32.00	SAMPLE PUMP FLOW RATE (mL per minute): 378.54	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☐ Y ☑ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
OLD-38-61C	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	5.23	TRPH	APP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME: Groundwater Sampling at SA38		SITE LOCATION: Orlando	
WELL NO: OLD-38-62D	SAMPLE ID: C560F9B795904D1CA7341C27120B6663		DATE: 09/12/2012

PURGING DATA

WELL DIAMETER (inches): 1.50	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH (feet): 55-60	STATIC DEPTH TO WATER (feet): 4.40	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (60.00 feet – 4.40 feet) X 0.09 gallons/foot = 5.10 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 61.00 feet)+ 0.15 gallon = 0.30 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 57.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 57.00	PURGING INITIATED AT: 12:49	PURGING ENDED AT: 12:59	TOTAL VOLUME PURGED (gallons): 1.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
12:52		0.30	0.101	4.42	4.57	25.77	186.00	1.27	1.94	-44.20	clear	sulfuric
12:55	0.30	0.60	0.104	4.42	4.52	25.74	183.00	0.94	0.95	-56.00	clear	sulfuric
12:58	0.30	0.90	0.102	4.42	4.48	25.73	182.00	0.68	1.71	-59.70	clear	sulfuric

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .65	TEMP.(°C): 25.72	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 182	pH: 4.46	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -59.6	TURB(NTU): .97	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Katie Ballew	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 12:59	SAMPLING ENDED AT: 13:05
PUMP OR TUBING DEPTH IN WELL (feet): 57.00	SAMPLE PUMP FLOW RATE (mL per minute): 378.54	TUBING MATERIAL CODE: PPE	
FIELD DECONTAMINATION: ☐ Y ☑ N	FIELD-FILTERED: ☐ Y ☑ N Filtration Equipment Type:	FILTER SIZE: NA	DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
OLD-38-62D	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	4.46	TRPH	APP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME: Groundwater Sampling at SA38		SITE LOCATION: Orlando	
WELL NO: OLD-38-63C	SAMPLE ID: C709C2A837FC4B6AB9A4D598939E3BD1		DATE: 09/12/2012

PURGING DATA

WELL DIAMETER (inches): 2.00	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 36.5-46.5	STATIC DEPTH TO WATER (feet): 4.25	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (46.50 feet – 4.25 feet) X 0.16 gallons/foot = 6.90 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 47.00 feet)+ 0.15 gallon = 0.18 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43.00	PURGING INITIATED AT: 13:23	PURGING ENDED AT: 13:32	TOTAL VOLUME PURGED (gallons): 1.00

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
13:26		0.30	0.090	4.25	5.15	25.87	273.00	1.03	3.29	-70.00	clear	none
13:29	0.30	0.60	0.101	4.25	5.15	25.82	274.00	0.66	1.93	-82.80	clear	none
13:32	0.30	0.90	0.098	4.25	5.16	25.76	272.00	0.53	1.56	-91.00	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .52	TEMP.(°C): 25.76	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 273	pH: 5.17	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -92.5	TURB(NTU): 3.4	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Katie Ballew	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 13:32	SAMPLING ENDED AT: 13:41
PUMP OR TUBING DEPTH IN WELL (feet): 43.00	SAMPLE PUMP FLOW RATE (mL per minute): 420.60	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N
FIELD-FILTERED: ☐ Y ☑ N FILTER SIZE: NA
Filtration Equipment Type:
DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
OLD-38-63C	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	5.17	TRPH	APP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

BFA Environmental Consultants

GROUNDWATER SAMPLING LOG

SITE NAME:	Groundwater Sampling at SA38		SITE LOCATION:	Orlando	
WELL NO:	OLD-38-64C	SAMPLE ID:	75A6C158FF574724ADDB3AC60FCEAC73	DATE:	09/12/2012

PURGING DATA

WELL DIAMETER (inches): 2.00	TUBING DIAMETER (inches): 0.13	WELL SCREEN INTERVAL DEPTH (feet): 36-46	STATIC DEPTH TO WATER (feet): 4.85	PURGE PUMP TYPE OR SAMPLER: Peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
only fill out if applicable)
= (46.00 feet – 4.85 feet) X 0.16 gallons/foot = 6.72 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.00 gallons+(0.00 gallons/foot X 47.00 feet)+ 0.15 gallon = 0.18 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43.00	PURGING INITIATED AT: 14:32	PURGING ENDED AT: 14:48	TOTAL VOLUME PURGED (gallons): 1.30

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	SEC (uS/cm)	DISSOLVED OXYGEN (circle mg/L or % saturation)	TURBIDITY (NTUs)	ORP Reading	COLOR (describe)	ODOR (describe)
14:40		0.60	0.074	4.90	4.10	27.45	179.00	0.54	11.60	-41.10	clear	none
14:44	0.30	0.90	0.073	4.90	4.11	27.62	180.00	0.77	5.93	-47.40	clear	none
14:47	0.30	1.20	0.077	4.90	4.10	27.60	180.00	0.53	7.98	-47.60	clear	none

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

FIELD/TEST KIT

Final Purge Readings		Hach Field Data(mg/L)		CHEMetrics Field Data(mg/L)	
DO(mg/L): .52	TEMP.(°C): 27.61	DO:	CO2:	DO High Range:	DO Low Range:
SEC(uS/cm) 181	pH: 4.10	Alkalinity:	Ferrous Iron:	CO2 High Range:	CO2 Low Range:
ORP(mV): -47.9	TURB(NTU): 9.18	H2S:	Maganese:	Alkalinity High Range:	Alkalinity Low Range:
Salinity:		Sulfate:	Sulfide:	Ferrous Iron:	
		Nitrate:			

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Katie Ballew	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 14:48	SAMPLING ENDED AT: 15:01
PUMP OR TUBING DEPTH IN WELL (feet): 43.00	SAMPLE PUMP FLOW RATE (mL per minute): 307.56	TUBING MATERIAL CODE: PPE	

FIELD DECONTAMINATION: ☑ Y ☐ N
FIELD-FILTERED: ☐ Y ☑ N FILTER SIZE: NA
Filtration Equipment Type:
DUPLICATE: ☐ Y ☑ N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	NO. OF CONTAIN.	MAT CODE	VOL	PRESERV USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
OLD-38-64C	5	AG;CG	40 ml;1 L	H2SO4;HCL	40 ml;1 L	4.10		APP

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other

NOTES:
1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. Stabilization Criteria for range of variation of last three consecutive readings (see FS 2212, section 3)
pH: + 0.2 units Temperature: + 0.2 oC Specific Conductance: + 5% Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2); optionally, + 0.2 mg/L or + 10% (whichever is greater) Turbidity: all readings < 20 NTU; optionally + 5 NTU or + 10% (whichever is greater)

APPENDIX C
Field Instrument Calibration Reports

Form FD 9000-8: Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#)	Hydrolab DS-5	INSTRUMENT #	SN 090600047993

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard	Type	Value	Origin	Date Purchased	Expiration Date
Standard A	Saturated Water	100%	DIW from Accutest	NA	NA
Standard B	pH	4	HACH	03/2012	08/2013
Standard C	pH	7	HACH	03/2012	09/2013
Standard D	pH	10	HACH	x	x
Standard E	Turbidity	40NTU	HACH StablCal	x	x
Standard F	Turbidity	0	DIW from Accutest	NA	NA
Standard G	Turbidity	200NTU	HACH StablCal	03/2011	06/2012
Standard H	Conductance	1413µS/cm	Radiometer Analytical	x	x
Standard I	Conductance	12.88mS/cm	Radiometer Analytical	x	x
Standard J	ORP	240mv	Vital Sine	07/2010	11/2013
Standard K	ORP	470	Hanna	03/2011	09/2015
Standard L	1) pH	4.01	Autocal	x	x
	2) Turbidity	0			
	3) Conductance	4.49ms/cm			

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	RECALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
12/09/12	11:10	A	100	100.8		N	I	DA
		C	7	7.2		Y	I	DA
		F	0	0		N	I	DA
		H	86	91		N	I	DA
		K	470	452		Y	I	DA
12/09/13	12:10	A	100	97.8		N	C	DA
		C	7	6.91		N	C	DA
		F	0	0		N	C	DA
		H	86	90		N	C	DA
12/09/18	11:00	A	100	94.2		Y	C	DA
		C	7	6.96		N	C	DA
		F	0	0.3		N	C	DA
		H	86	95		Y	C	DA
12/09/20	10:30	A	100	106.8		Y	C	DA
		C	7	7.1		N	C	DA
		F	0	0.8		N	C	DA
		H	86	90		N	C	DA
12/09/21	11:30	A	100	96.6		Y	C	DA
		C	7	7.03		N	C	DA
		F	0	6.5		Y	C	DA
		H	86	91		N	C	DA
12/09/24	11:35	A	100	104		N	C	DA
		C	7	7.03		N	C	DA
		F	0	8.2		Y	C	DA
		H	86	94		Y	C	DA
12/09/25	09:40	A	100	103.4		N	C	DA
		C	7	6.99		N	C	DA
		F	0	0.5		N	C	DA
		H	86	88		N	C	DA
12/09/27	12:30	A	100	104		Y	C	DA
		C	7	7.03		N	C	DA
		F	0	8.5		Y	C	DA
		H	86	93		Y	C	DA
12/09/28	10:10	A	100	99.3		N	C	DA
		C	7	7.03		N	C	DA
		F	0	0		N	C	DA
		H	86	89		N	C	DA
12/10/01	12:30	A	100	95.6		Y	C	DA
		C	7	7		N	C	DA
		F	0	8.8		Y	C	DA
		H	86	96		Y	C	DA
12/10/02	12:30	A	100	110.5		Y	C	DA
		C	7	6.99		N	C	DA
		F	0	0.4		N	C	DA
		H	86	90		N	C	DA
12/10/09	11:15	A	100	91.5		Y	C	DA
		C	7	7.01		N	C	DA
		F	0	0.1		N	C	DA
		H	86	93		Y	C	DA
12/10/10	10:30	A	100	102.7		Y	C	DA
		C	7	6.99		N	C	DA
		F	0	0.3		N	C	DA
		H	86	92		N	C	DA

Form FD 9000-8: Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#)	InSitu Troll 9500XT	INSTRUMENT #	47616

STANDARDS: *[Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]*

Standard	Type	Value	Origin	Date Purchased	Expiration Date
Standard A	Saturated Water	100%	DIW from Accutest	NA	NA
Standard B	pH	4	HACH	03/2012	08/2013
Standard C	pH	7	HACH	03/2012	09/2013
Standard D	pH	10	HACH	x	x
Standard E	Turbidity	40NTU	HACH StablCal	x	x
Standard F	Turbidity	0	DIW from Accutest	NA	NA
Standard G	Turbidity	200NTU	HACH StablCal	03/2011	06/2012
Standard H	Conductance	1413µS/cm	Radiometer Analytical	x	x
Standard I	Conductance	12.88mS/cm	Radiometer Analytical	x	x
Standard J	ORP	240mv	Vital Sine	07/2010	11/2013
Standard K	ORP	470	Hanna	03/2011	09/2015
Standard L	1) pH	4.01	Autocal	x	x
	2) Turbidity	0			
	3) Conductance	4.49ms/cm			

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	RECALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
12/09/18	10:27	C	7	7.05		n	cont	kb
		F	15	15		n	cont	kb
		A	100	104		n	cont	kb
		H	1500	1406		y	cont	kb
12/09/20	10:20	B	4.01	4.07		n	cont	kb
		F	0	0		n	cont	kb
		A	100	100		n	cont	kb
		H	84	99		y	cont	kb
12/09/21	11:44	B	4.01	4.07		N	cont	kb
		F	0	0		N	cont	kb
		A	100	100		N	cont	kb
		H	84	86.61		N	cont	kb
12/09/24	11:34	B	4.01	4.06		N	cont	kb
		F	0	0		N	cont	kb
		A	100	100		N	cont	kb
		H	84	87		N	cont	kb
12/09/26	09:42	B	4.01	4.05		N	cont	kb
		F	0	0		N	cont	kb
		A	100	100		N	cont	kb
		H	84	90.75		Y	cont	kb
12/09/27	09:08	B	4.01	4.07		N	cont	kb
		F	0	0		N	cont	kb
		A	100	98.8		N	cont	kb
		H	84	84		N	cont	kb
12/09/30	10:26	B	4.01	4.08		N	cont	kb
		F	0	0		N	cont	kb
		A	100	97		N	cont	kb
		H	84	91.29		Y	cont	kb
12/10/02		B	4.01	4.12		Y	cont	kb
		F	0	0		N	cont	kb
		A	100					
		H	84	80.46		N	cont	kb
12/10/03	09:34	B	4.01	3.78		Y	cont	kb
		F	0	0		N	cont	kb
		A	100	96		N	cont	kb
		H	1500	1328		Y	cont	kb
12/10/09	11:30	B	4.01	4.02		N	cont	kb
		F	0	0		N	cont	kb
		A	100	100		N	cont	kb
		H	1500	1506		N	cont	kb
12/10/10	10:41	B	4.01	4.06		N	cont	kb
		F	0	0		N	cont	kb
		A	100	97		N	cont	kb
		H	1500	1500		N	cont	kb
12/10/11	10:24	B	4.01	4.04		N	cont	kb
		F	0	0		N	cont	kb
		A	100	97.8		N	cont	kb
		H	1500	1478		Y	cont	kb

APPENDIX D

September 2012 Laboratory Analytical Reports (Included on CD)

Southeast ACCUTEST LABORATORIES

09/28/12

Technical Report for

BFA Environmental Consultants

NTC Orlando, Orlando, FL

Accutest Job Number: F96890

Sampling Date: 09/13/12

Report to:

BFA Environmental Consultants
1230 Hillcrest Street Suite 100
Orlando, FL 32803
jwatson@bfaenvironmental.com

ATTN: John Watson

Total number of pages in report: **22**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

Client Service contact: Jean Dent-Smith 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (04226CA), TX (T104704404), AK, AR, GA, KY, MA, NV, OK, UT, VA, WA, WI

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Accutest Laboratories

Sample Summary

BFA Environmental Consultants

NTC Orlando, Orlando, FL

Job No: F96890

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
F96890-1	09/13/12	13:45	DA	09/14/12	AQ	Water	OLD-38-51D
F96890-2	09/13/12	14:41	DA	09/14/12	AQ	Water	OLD-38-58(C2)
F96890-3	09/13/12	16:03	DA	09/14/12	AQ	Water	OLD-38-59

Summary of Hits

Job Number: F96890
Account: BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL
Collected: 09/13/12

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	PQL	MDL	Units	Method
F96890-1	**OLD-38-51D**					
Naphthalene		1.3 I	5.0	1.0	ug/l	SW846 8260B
F96890-2	**OLD-38-58(C2)**					
Methyl Tert Butyl Ether		0.44 I	1.0	0.34	ug/l	SW846 8260B
Naphthalene		15.0	5.0	1.0	ug/l	SW846 8260B
F96890-3	**OLD-38-59**					

No hits reported in this sample.

Southeast ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	OLD-38-51D		
Lab Sample ID:	F96890-1	**Date Sampled:**	09/13/12
Matrix:	AQ - Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0175775.D	1	09/26/12	TD	n/a	n/a	VA1110
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.20 U	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.20 U	1.0	0.20	ug/l	
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.34 U	1.0	0.34	ug/l	
91-20-3	Naphthalene	1.3	5.0	1.0	ug/l	I
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		87-116%
17060-07-0	1,2-Dichloroethane-D4	90%		76-127%
2037-26-5	Toluene-D8	90%		86-112%
460-00-4	4-Bromofluorobenzene	93%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-51D		
Lab Sample ID:	F96890-1	**Date Sampled:**	09/13/12
Matrix:	AQ - Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52983.D	1	09/21/12	FEA	09/20/12	OP43630	GZF1983
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.14 U	0.24	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	80%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-58(C2)		
Lab Sample ID:	F96890-2	**Date Sampled:**	09/13/12
Matrix:	AQ - Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0175776.D	1	09/26/12	TD	n/a	n/a	VA1110
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.20 U	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.20 U	1.0	0.20	ug/l	
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.44	1.0	0.34	ug/l	I
91-20-3	Naphthalene	15.0	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		87-116%
17060-07-0	1,2-Dichloroethane-D4	94%		76-127%
2037-26-5	Toluene-D8	90%		86-112%
460-00-4	4-Bromofluorobenzene	94%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-58(C2)		
Lab Sample ID:	F96890-2	**Date Sampled:**	09/13/12
Matrix:	AQ - Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52965.D	1	09/21/12	FEA	09/20/12	OP43630	GZF1983
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.14 U	0.24	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	74%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-59		
Lab Sample ID:	F96890-3	**Date Sampled:**	09/13/12
Matrix:	AQ - Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0175777.D	1	09/26/12	TD	n/a	n/a	VA1110
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.20 U	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.20 U	1.0	0.20	ug/l	
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.34 U	1.0	0.34	ug/l	
91-20-3	Naphthalene	1.0 U	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		87-116%
17060-07-0	1,2-Dichloroethane-D4	95%		76-127%
2037-26-5	Toluene-D8	90%		86-112%
460-00-4	4-Bromofluorobenzene	95%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-59		
Lab Sample ID:	F96890-3	**Date Sampled:**	09/13/12
Matrix:	AQ - Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52984.D	1	09/21/12	FEA	09/20/12	OP43630	GZF1983
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.14 U	0.24	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Southeast ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (FL)
- Chain of Custody

Accutest Laboratories Southeast
Chain of Custody

ACCUTEST LABORATORIES

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 • FAX: 407-425-0707
www.accutest.com

Accutest JOB # F96890 PAGE_____OF_____

Accutest Quote # | SKIFF#

Client / Reporting Information

Company Name: BFA
Address:
City: State: Zip:
Project Contact: E-mail:
Phone#:
Sampler(s) Name(s) (Printed):

Project Information

Project Name: NTC
Street:
City: State:
Project #:
Fax #:
Client Purchase Order #:

Analytical Information: VOC, TRPH

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

Accutest Sample #	Field ID / Point of Collection	Collection DATE	Collection TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	VOC	TRPH	LAB USE ONLY
1	OLD-38-SID	9-13-12	1345	DA	W	5			X			X						
2	OLD-38-SB(C2)	9-13-12	1441	DA	W	5			X			X						
3	OLD-38-S9	9-13-12	1605	DA	W	5			X			X						

TURNAROUND TIME (Business Days)

Approved By: / Rush Code

- ☐ 10 Days Standard
- ☐ 7 Day RUSH
- ☐ 5 Day RUSH
- ☐ 3 Day EMERGENCY
- ☐ 2 Day EMERGENCY
- ☐ 1 Day EMERGENCY
- ☐ OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
1	9-13-12 1639	2 9/13/12 1627	3	9-13-12 1705	4 9-14-12 800 ASE
Relinquished by:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
5		6	7		8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: 4.0

F96890: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: F96890 CLIENT: BFA PROJECT: Ntc

DATE/TIME RECEIVED: 09-14-12 0800 (MM/DD/YY 24:00) NIMBER OF COOLERS RECEIVED: 1

METHOD OF DELIVERY: FEDEX UPS ~~ACCUTEST COURIER~~ GREYHOUND DELIVERY OTHER

AIRBILL NUMBERS:

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET
- [ ] WET ICE PRESENT

TRIP BLANK INFORMATION

- [ ] TRIP BLANK PROVIDED
- [x] TRIP BLANK NOT PROVIDED
- [x] TRIP BLANK NOT ON COC
- [ ] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [ ] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM_____ 5-GRAM_____

NUMBER OF 5035 FIELD KITS ? _____

NUMBER OF LAB FILTERED METALS ? _____

TEMPERATURE INFORMATION

- [ ] IR THERM ID 3 CORR. FACTOR -0.0
- [ ] OBSERVED TEMPS: 4.0
- [ ] CORRECTED TEMPS: 4.0

SAMPLE INFORMATION

- [ ] SAMPLE LABELS PRESENT ON ALL BOTTLES
- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [x] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] 5035 FIELD KIT FROZEN WITHIN 48 HOUR'S
- [ ] RESIDUAL CHLORINE PRESENT

(APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS)

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE [signature] 09-14-12 REVIEWER SIGNATURE/DATE [signature] 09/14/12

NF 12/10

receipt confirmation 122910.xls

4.1

4

F96890: Chain of Custody

Page 2 of 2

Southeast ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: F96890
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1110-MB	A0175774.D	1	09/26/12	TD	n/a	n/a	VA1110

The QC reported here applies to the following samples: **Method:** SW846 8260B

F96890-1, F96890-2, F96890-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.20	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	89%	87-116%
17060-07-0	1,2-Dichloroethane-D4	85%	76-127%
2037-26-5	Toluene-D8	91%	86-112%
460-00-4	4-Bromofluorobenzene	93%	84-120%

Blank Spike Summary

Job Number: F96890
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VA1110-BS	A0175772.D	1	09/26/12	TD	n/a	n/a	VA1110

The QC reported here applies to the following samples: **Method:** SW846 8260B

F96890-1, F96890-2, F96890-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	27.2	109	83-124
156-59-2	cis-1,2-Dichloroethylene	25	25.6	102	81-114
100-41-4	Ethylbenzene	25	26.3	105	87-118
87-68-3	Hexachlorobutadiene	25	26.2	105	71-133
98-82-8	Isopropylbenzene	25	27.4	110	87-131
75-09-2	Methylene chloride	25	27.1	108	69-125
1634-04-4	Methyl Tert Butyl Ether	25	23.8	95	75-116
91-20-3	Naphthalene	25	24.8	99	59-125
95-63-6	1,2,4-Trimethylbenzene	25	25.0	100	82-120
108-67-8	1,3,5-Trimethylbenzene	25	25.3	101	83-123
127-18-4	Tetrachloroethylene	25	26.5	106	80-131
79-01-6	Trichloroethylene	25	26.9	108	85-124
1330-20-7	Xylene (total)	75	79.2	106	86-120

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	88%	87-116%
17060-07-0	1,2-Dichloroethane-D4	84%	76-127%
2037-26-5	Toluene-D8	92%	86-112%
460-00-4	4-Bromofluorobenzene	88%	84-120%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F96890
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F96890-2MS	A0175785.D	1	09/26/12	TD	n/a	n/a	VA1110
F96890-2MSD	A0175786.D	1	09/26/12	TD	n/a	n/a	VA1110
F96890-2	A0175776.D	1	09/26/12	TD	n/a	n/a	VA1110

The QC reported here applies to the following samples: **Method:** SW846 8260B

F96890-1, F96890-2, F96890-3

CAS No.	Compound	F96890-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0 U		25	28.7	115	26.8	107	7	83-124/11
156-59-2	cis-1,2-Dichloroethylene	1.0 U		25	27.1	108	25.3	101	7	81-114/10
100-41-4	Ethylbenzene	1.0 U		25	28.0	112	26.0	104	7	87-118/10
87-68-3	Hexachlorobutadiene	2.0 U		25	28.2	113	25.1	100	12	71-133/12
98-82-8	Isopropylbenzene	1.0 U		25	29.5	118	27.4	110	7	87-131/10
75-09-2	Methylene chloride	5.0 U		25	27.6	110	26.5	106	4	69-125/11
1634-04-4	Methyl Tert Butyl Ether	0.44	I	25	25.3	99	24.9	98	2	75-116/10
91-20-3	Naphthalene	15.0		25	46.9	128*	43.2	113	8	59-125/15
95-63-6	1,2,4-Trimethylbenzene	2.0 U		25	27.0	108	25.0	100	8	82-120/10
108-67-8	1,3,5-Trimethylbenzene	2.0 U		25	27.0	108	24.9	100	8	83-123/10
127-18-4	Tetrachloroethylene	1.0 U		25	28.4	114	26.1	104	8	80-131/12
79-01-6	Trichloroethylene	1.0 U		25	28.3	113	26.3	105	7	85-124/10
1330-20-7	Xylene (total)	3.0 U		75	84.4	113	78.4	105	7	86-120/10

CAS No.	Surrogate Recoveries	MS	MSD	F96890-2	Limits
1868-53-7	Dibromofluoromethane	88%	88%	94%	87-116%
17060-07-0	1,2-Dichloroethane-D4	84%	83%	94%	76-127%
2037-26-5	Toluene-D8	91%	91%	90%	86-112%
460-00-4	4-Bromofluorobenzene	89%	88%	94%	84-120%

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: F96890
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP43630-MB	ZF52964.D	1	09/21/12	FEA	09/20/12	OP43630	GZF1983

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO

F96890-1, F96890-2, F96890-3

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.25	0.15	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	78%	38-122%

Blank Spike Summary

Job Number: F96890
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP43630-BS	ZF52963.D	1	09/21/12	FEA	09/20/12	OP43630	GZF1983

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO

F96890-1, F96890-2, F96890-3

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH (C8-C40)	0.85	0.575	68	54-110

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	82%	38-122%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F96890
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP43630-MS	ZF52966.D	1	09/21/12	FEA	09/20/12	OP43630	GZF1983
OP43630-MSD	ZF52967.D	1	09/21/12	FEA	09/20/12	OP43630	GZF1983
F96890-2	ZF52965.D	1	09/21/12	FEA	09/20/12	OP43630	GZF1983

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO

F96890-1, F96890-2, F96890-3

CAS No.	Compound	F96890-2 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (C8-C40)	0.24	U	1.63	1.10	67	1.14	70	4	54-110/28

CAS No.	Surrogate Recoveries	MS	MSD	F96890-2	Limits
84-15-1	o-Terphenyl	77%	82%	74%	38-122%

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

09/26/12

Technical Report for

BFA Environmental Consultants

NTC Orlando, Orlando, FL

Accutest Job Number: F96891

Sampling Date: 09/12/12

Report to:

BFA Environmental Consultants
1230 Hillcrest Street Suite 100
Orlando, FL 32803
jwatson@bfaenvironmental.com

ATTN: John Watson

Total number of pages in report: **44**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

Client Service contact: Jean Dent-Smith 407-425-6700

Certifications: FL (E83510), LA (03051), KS (E-10327), IA (366), IL (200063), NC (573), NJ (FL002), SC (96038001) DoD ELAP (L-A-B L2229), CA (04226CA), TX (T104704404), AK, AR, GA, KY, MA, NV, OK, UT, VA, WA, WI

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Accutest Laboratories

Sample Summary

BFA Environmental Consultants

NTC Orlando, Orlando, FL

Job No: F96891

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
F96891-1	09/12/12	15:23	DAKB	09/14/12	AQ	Ground Water	OLD-38-54C
F96891-2	09/12/12	15:55	DAKB	09/14/12	AQ	Ground Water	OLD-38-55C
F96891-3	09/12/12	15:42	DAKB	09/14/12	AQ	Ground Water	OLD-38-60C
F96891-4	09/12/12	14:14	DAKB	09/14/12	AQ	Ground Water	OLD-38-61C
F96891-5	09/12/12	12:59	DAKB	09/14/12	AQ	Ground Water	OLD-38-62D
F96891-6	09/12/12	13:32	DAKB	09/14/12	AQ	Ground Water	OLD-38-63C
F96891-7	09/12/12	14:48	DAKB	09/14/12	AQ	Ground Water	OLD-38-64C
F96891-8	09/12/12	13:15	DAKB	09/14/12	AQ	Ground Water	MW-38C
F96891-9	09/12/12	14:15	DAKB	09/14/12	AQ	Ground Water	MW-41C
F96891-10	09/12/12	14:49	DAKB	09/14/12	AQ	Ground Water	MW-48C
F96891-11	09/12/12	00:00	DAKB	09/14/12	AQ	Ground Water	DUPLICATE 36NW

Summary of Hits

Job Number: F96891
Account: BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL
Collected: 09/12/12

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	PQL	MDL	Units	Method
F96891-1	**OLD-38-54C**					
Methyl Tert Butyl Ether		13.7	1.0	0.34	ug/l	SW846 8260B
F96891-2	**OLD-38-55C**					
Benzene		0.48 I	1.0	0.20	ug/l	SW846 8260B
Isopropylbenzene		0.29 I	1.0	0.20	ug/l	SW846 8260B
Naphthalene		8.5	5.0	1.0	ug/l	SW846 8260B
TPH (C8-C40)		0.358	0.24	0.14	mg/l	FLORIDA-PRO
F96891-3	**OLD-38-60C**					
No hits reported in this sample.						
F96891-4	**OLD-38-61C**					
No hits reported in this sample.						
F96891-5	**OLD-38-62D**					
No hits reported in this sample.						
F96891-6	**OLD-38-63C**					
Ethylbenzene		2.0	1.0	0.20	ug/l	SW846 8260B
Isopropylbenzene		0.97 I	1.0	0.20	ug/l	SW846 8260B
Methyl Tert Butyl Ether		3.6	1.0	0.34	ug/l	SW846 8260B
Naphthalene		2.1 I	5.0	1.0	ug/l	SW846 8260B
TPH (C8-C40)		0.149 I	0.24	0.14	mg/l	FLORIDA-PRO
F96891-7	**OLD-38-64C**					
No hits reported in this sample.						
F96891-8	**MW-38C**					
Ethylbenzene		1.2	1.0	0.20	ug/l	SW846 8260B
Isopropylbenzene		0.76 I	1.0	0.20	ug/l	SW846 8260B
Naphthalene		17.6	5.0	1.0	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		19.2	2.0	0.27	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		0.39 I	2.0	0.21	ug/l	SW846 8260B
Xylene (total)		2.2 I	3.0	0.52	ug/l	SW846 8260B
TPH (C8-C40)		2.13	0.48	0.29	mg/l	FLORIDA-PRO

Summary of Hits

Job Number: F96891
Account: BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL
Collected: 09/12/12

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	PQL	MDL	Units	Method
F96891-9	**MW-41C**					
Methyl Tert Butyl Ether		14.3	1.0	0.34	ug/l	SW846 8260B
F96891-10	**MW-48C**					
Isopropylbenzene		1.0	1.0	0.20	ug/l	SW846 8260B
Methyl Tert Butyl Ether		4.7	1.0	0.34	ug/l	SW846 8260B
Naphthalene		13.0	5.0	1.0	ug/l	SW846 8260B
TPH (C8-C40)		0.200 I	0.24	0.14	mg/l	FLORIDA-PRO
F96891-11	**DUPLICATE 36NW**					
Ethylbenzene		1.4	1.0	0.20	ug/l	SW846 8260B
Isopropylbenzene		0.94 I	1.0	0.20	ug/l	SW846 8260B
Naphthalene		21.2	5.0	1.0	ug/l	SW846 8260B
1,2,4-Trimethylbenzene		20.8	2.0	0.27	ug/l	SW846 8260B
1,3,5-Trimethylbenzene		0.42 I	2.0	0.21	ug/l	SW846 8260B
Xylene (total)		2.3 I	3.0	0.52	ug/l	SW846 8260B
TPH (C8-C40)		1.98	0.24	0.15	mg/l	FLORIDA-PRO

Southeast ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	OLD-38-54C		
Lab Sample ID:	F96891-1	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J078989.D	1	09/25/12	MM	n/a	n/a	VJ4119
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.20 U	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.20 U	1.0	0.20	ug/l	
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	13.7	1.0	0.34	ug/l	
91-20-3	Naphthalene	1.0 U	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		87-116%
17060-07-0	1,2-Dichloroethane-D4	93%		76-127%
2037-26-5	Toluene-D8	92%		86-112%
460-00-4	4-Bromofluorobenzene	88%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-54C		
Lab Sample ID:	F96891-1	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52901.D	1	09/20/12	FEA	09/17/12	OP43570	GZF1981
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.14 U	0.24	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	78%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-55C		
Lab Sample ID:	F96891-2	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J078990.D	1	09/25/12	MM	n/a	n/a	VJ4119
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.48	1.0	0.20	ug/l	I
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.20 U	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.29	1.0	0.20	ug/l	I
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.34 U	1.0	0.34	ug/l	
91-20-3	Naphthalene	8.5	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		87-116%
17060-07-0	1,2-Dichloroethane-D4	94%		76-127%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	87%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-55C		
Lab Sample ID:	F96891-2	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52931.D	1	09/21/12	FEA	09/18/12	OP43592	GZF1982
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.358	0.24	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	83%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-60C		
Lab Sample ID:	F96891-3	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J078991.D	1	09/25/12	MM	n/a	n/a	VJ4119
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.20 U	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.20 U	1.0	0.20	ug/l	
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.34 U	1.0	0.34	ug/l	
91-20-3	Naphthalene	1.0 U	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		87-116%
17060-07-0	1,2-Dichloroethane-D4	98%		76-127%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	88%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-60C		
Lab Sample ID:	F96891-3	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52932.D	1	09/21/12	FEA	09/18/12	OP43592	GZF1982
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.14 U	0.24	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	78%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-61C		
Lab Sample ID:	F96891-4	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J078992.D	1	09/25/12	MM	n/a	n/a	VJ4119
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.20 U	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.20 U	1.0	0.20	ug/l	
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.34 U	1.0	0.34	ug/l	
91-20-3	Naphthalene	1.0 U	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		87-116%
17060-07-0	1,2-Dichloroethane-D4	95%		76-127%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	88%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-61C		
Lab Sample ID:	F96891-4	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52933.D	1	09/21/12	FEA	09/18/12	OP43592	GZF1982
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.14 U	0.24	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	79%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-62D		
Lab Sample ID:	F96891-5	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J078993.D	1	09/25/12	MM	n/a	n/a	VJ4119
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.20 U	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.20 U	1.0	0.20	ug/l	
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.34 U	1.0	0.34	ug/l	
91-20-3	Naphthalene	1.0 U	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		87-116%
17060-07-0	1,2-Dichloroethane-D4	97%		76-127%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	87%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-62D		
Lab Sample ID:	F96891-5	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52934.D	1	09/21/12	FEA	09/18/12	OP43592	GZF1982
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.14 U	0.24	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	88%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-63C		
Lab Sample ID:	F96891-6	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J078994.D	1	09/25/12	MM	n/a	n/a	VJ4119
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	2.0	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.97	1.0	0.20	ug/l	I
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3.6	1.0	0.34	ug/l	
91-20-3	Naphthalene	2.1	5.0	1.0	ug/l	I
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		87-116%
17060-07-0	1,2-Dichloroethane-D4	96%		76-127%
2037-26-5	Toluene-D8	92%		86-112%
460-00-4	4-Bromofluorobenzene	88%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-63C		
Lab Sample ID:	F96891-6	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52935.D	1	09/21/12	FEA	09/18/12	OP43592	GZF1982
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.149	0.24	0.14	mg/l	I

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	82%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-64C		
Lab Sample ID:	F96891-7	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J078995.D	1	09/25/12	MM	n/a	n/a	VJ4119
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.20 U	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.20 U	1.0	0.20	ug/l	
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.34 U	1.0	0.34	ug/l	
91-20-3	Naphthalene	1.0 U	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		87-116%
17060-07-0	1,2-Dichloroethane-D4	101%		76-127%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	90%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OLD-38-64C		
Lab Sample ID:	F96891-7	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52938.D	1	09/21/12	FEA	09/18/12	OP43592	GZF1982
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.14 U	0.24	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	88%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-38C		
Lab Sample ID:	F96891-8	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J078996.D	1	09/25/12	MM	n/a	n/a	VJ4119
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	1.2	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.76	1.0	0.20	ug/l	I
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.34 U	1.0	0.34	ug/l	
91-20-3	Naphthalene	17.6	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	19.2	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.39	2.0	0.21	ug/l	I
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	2.2	3.0	0.52	ug/l	I

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		87-116%
17060-07-0	1,2-Dichloroethane-D4	98%		76-127%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	88%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-38C		
Lab Sample ID:	F96891-8	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52956.D	2	09/21/12	FEA	09/18/12	OP43592	GZF1982
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	2.13	0.48	0.29	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	83%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-41C		
Lab Sample ID:	F96891-9	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J078997.D	1	09/25/12	MM	n/a	n/a	VJ4119
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.20 U	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.20 U	1.0	0.20	ug/l	
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	14.3	1.0	0.34	ug/l	
91-20-3	Naphthalene	1.0 U	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		87-116%
17060-07-0	1,2-Dichloroethane-D4	98%		76-127%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	88%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-41C		
Lab Sample ID:	F96891-9	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52939.D	1	09/21/12	FEA	09/18/12	OP43592	GZF1982
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.14 U	0.24	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	79%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-48C		
Lab Sample ID:	F96891-10	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J078998.D	1	09/25/12	MM	n/a	n/a	VJ4119
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	0.20 U	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	1.0	1.0	0.20	ug/l	
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	4.7	1.0	0.34	ug/l	
91-20-3	Naphthalene	13.0	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.27 U	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.21 U	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	0.52 U	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		87-116%
17060-07-0	1,2-Dichloroethane-D4	99%		76-127%
2037-26-5	Toluene-D8	92%		86-112%
460-00-4	4-Bromofluorobenzene	89%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-48C		
Lab Sample ID:	F96891-10	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52940.D	1	09/21/12	FEA	09/18/12	OP43592	GZF1982
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	0.200	0.24	0.14	mg/l	I

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	78%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUPLICATE 36NW		
Lab Sample ID:	F96891-11	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J078999.D	1	09/25/12	MM	n/a	n/a	VJ4119
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	PQL	MDL	Units	Q
71-43-2	Benzene	0.20 U	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.26 U	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	1.4	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	0.80 U	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	0.94	1.0	0.20	ug/l	I
75-09-2	Methylene chloride	2.0 U	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.34 U	1.0	0.34	ug/l	
91-20-3	Naphthalene	21.2	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	20.8	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	0.42	2.0	0.21	ug/l	I
127-18-4	Tetrachloroethylene	0.25 U	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	0.26 U	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	2.3	3.0	0.52	ug/l	I

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		87-116%
17060-07-0	1,2-Dichloroethane-D4	94%		76-127%
2037-26-5	Toluene-D8	92%		86-112%
460-00-4	4-Bromofluorobenzene	85%		84-120%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DUPLICATE 36NW		
Lab Sample ID:	F96891-11	**Date Sampled:**	09/12/12
Matrix:	AQ - Ground Water	**Date Received:**	09/14/12
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NTC Orlando, Orlando, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ZF52941.D	1	09/21/12	FEA	09/18/12	OP43592	GZF1982
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	PQL	MDL	Units	Q
	TPH (C8-C40)	1.98	0.24	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	87%		38-122%

U = Not detected MDL - Method Detection Limit
PQL = Practical Quantitation Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < PQL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Southeast ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (FL)
- Chain of Custody

Accutest Laboratories Southeast
Chain of Custody

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Accutest Quote #

SKIFF#

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City: Orlando State: FL Zip: 32803
Project Contact: John Watson E-mail: jwatson@bfaenvironmental.com
Phone#: 407-896-8608
Sampler(s) Name(s) (Printed)

Project Information

Project Name: NTC
Street
City State
Project #
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

Accutest Sample #	Field ID / Point of Collection	Collection Date	Time	Sampled By	Matrix	Total # of Bottles	Other	None	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI Water	MeOH	TRPH	VOC	LAB USE ONLY
1	OLD-38-54C	9/12/12	1523	DA	GW	5			X			X				X	X	
2	OLD-38-55D	9/12/12	1555	DA	GW	5			X			X				X	X	
3	OLD-38-60C	9/12/12	1542	KB	GW	5			X			X				X	X	
4	OLD-38-61C	9/12/12	1414	KB	GW	5			X			X				X	X	
5	OLD-38-62D	9/12/12	1259	KB	GW	5			X			X				X	X	
6	OLD-38-63C	9/12/12	1332	KB	GW	5			X			X				X	X	
7	OLD-38-64C	9/12/12	1448	KB	GW	5			X			X				X	X	
	~~OLD-38-51D~~	~~9/12/12~~																
8	~~OLD~~ MW-38C	9/12/12	1315	DA	GW	5			X			X				X	X	
9	MW-41C	9/12/12	1415	DA	GW	5			X			X				X	X	
10	MW-48C	9/12/12	1449	DA	GW	5			X			X				X	X	
11	Duplicate 36 NW	9/12/12		DA	GW	5			X			X				X	X	

TURNAROUND TIME (Business Days)

Approved By: / Rush Code

- ☐ 10 Days Standard
- ☐ 7 Day RUSH
- ☐ 5 Day RUSH
- ☐ 3 Day EMERGENCY
- ☐ 2 Day EMERGENCY
- ☐ 1 Day EMERGENCY
- ☐ OTHER

Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
1	9.13.12 1125	2	3	9/13/12 1300	4 9-14-12 [illegible]
Relinquished by:	Date Time:	Received By:	Relinquished by:	Date Time:	Received By:
5		6	7		8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: 4.2, 4.0, 3.6

4.1 4

F96891: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES SAMPLE RECEIPT CONFIRMATION

ACCUTEST'S JOB NUMBER: F96891 CLIENT: BFA PROJECT: NTC

DATE/TIME RECEIVED: 09-14-12 0800 {MM/DD/YY 24:00} NIMBER OF COOLERS RECEIVED: 3

METHOD OF DELIVERY: FEDEX UPS ~~ACCUTEST COURIER~~ GREYHOUND DELIVERY OTHER

AIRBILL NUMBERS:

COOLER INFORMATION

- [ ] CUSTODY SEAL NOT PRESENT OR NOT INTACT
- [ ] CHAIN OF CUSTODY NOT RECEIVED (COC)
- [ ] ANALYSIS REQUESTED IS UNCLEAR OR MISSING
- [ ] SAMPLE DATES OR TIMES UNCLEAR OR MISSING
- [ ] TEMPERATURE CRITERIA NOT MET
- [ ] WET ICE PRESENT

TRIP BLANK INFORMATION

- [x] TRIP BLANK PROVIDED
- [ ] TRIP BLANK NOT PROVIDED
- [x] TRIP BLANK NOT ON COC
- [x] TRIP BLANK INTACT
- [ ] TRIP BLANK NOT INTACT
- [x] RECEIVED WATER TRIP BLANK
- [ ] RECEIVED SOIL TRIP BLANK

MISC. INFORMATION

NUMBER OF ENCORES ? 25-GRAM____ 5-GRAM____

NUMBER OF 5035 FIELD KITS ?

NUMBER OF LAB FILTERED METALS ?

TEMPERATURE INFORMATION

- [ ] IR THERM ID 3 CORR. FACTOR -0.0
- [ ] OBSERVED TEMPS: 4.2, 4.0, 3.6
- [ ] CORRECTED TEMPS: 4.2, 4.0, 3.6

SAMPLE INFORMATION

- [ ] SAMPLE LABELS PRESENT ON ALL BOTTLES
- [ ] INCORRECT NUMBER OF CONTAINERS USED
- [ ] SAMPLE RECEIVED IMPROPERLY PRESERVED
- [ ] INSUFFICIENT VOLUME FOR ANALYSIS
- [ ] DATES/TIMES ON COC DO NOT MATCH SAMPLE LABEL
- [ ] ID'S ON COC DO NOT MATCH LABEL
- [ ] VOC VIALS HAVE HEADSPACE (MACRO BUBBLES)
- [ ] BOTTLES RECEIVED BUT ANALYSIS NOT REQUESTED
- [ ] NO BOTTLES RECEIVED FOR ANALYSIS REQUESTED
- [ ] UNCLEAR FILTERING OR COMPOSITING INSTRUCTIONS
- [ ] SAMPLE CONTAINER(S) RECEIVED BROKEN
- [ ] % SOLIDS JAR NOT RECEIVED
- [ ] 5035 FIELD KIT FROZEN WITHIN 48 HOUR'S
- [ ] RESIDUAL CHLORINE PRESENT

{APPICABLE TO EPA 600 SERIES OR NORTH CAROLINA ORGANICS}

SUMMARY OF COMMENTS:

TECHNICIAN SIGNATURE/DATE R. Willis 09-14-12 REVIEWER SIGNATURE/DATE 09/14/12

NF 12/10

receipt confirmation 122910.xls

4.1

4

F96891: Chain of Custody

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Southeast ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: F96891
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VJ4119-MB	J078988.D	1	09/25/12	MM	n/a	n/a	VJ4119

The QC reported here applies to the following samples: **Method:** SW846 8260B

F96891-1, F96891-2, F96891-3, F96891-4, F96891-5, F96891-6, F96891-7, F96891-8, F96891-9, F96891-10, F96891-11

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.26	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	0.80	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	0.20	ug/l	
75-09-2	Methylene chloride	ND	5.0	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.34	ug/l	
91-20-3	Naphthalene	ND	5.0	1.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.27	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.21	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.25	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.52	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	101%	87-116%
17060-07-0	1,2-Dichloroethane-D4	98%	76-127%
2037-26-5	Toluene-D8	93%	86-112%
460-00-4	4-Bromofluorobenzene	90%	84-120%

Blank Spike Summary

Job Number: F96891
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VJ4119-BS	J078987.D	1	09/25/12	MM	n/a	n/a	VJ4119

The QC reported here applies to the following samples: **Method:** SW846 8260B

F96891-1, F96891-2, F96891-3, F96891-4, F96891-5, F96891-6, F96891-7, F96891-8, F96891-9, F96891-10, F96891-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	24.3	97	83-124
156-59-2	cis-1,2-Dichloroethylene	25	25.2	101	81-114
100-41-4	Ethylbenzene	25	24.7	99	87-118
87-68-3	Hexachlorobutadiene	25	30.1	120	71-133
98-82-8	Isopropylbenzene	25	26.6	106	87-131
75-09-2	Methylene chloride	25	19.6	78	69-125
1634-04-4	Methyl Tert Butyl Ether	25	21.3	85	75-116
91-20-3	Naphthalene	25	23.2	93	59-125
95-63-6	1,2,4-Trimethylbenzene	25	22.7	91	82-120
108-67-8	1,3,5-Trimethylbenzene	25	24.8	99	83-123
127-18-4	Tetrachloroethylene	25	26.7	107	80-131
79-01-6	Trichloroethylene	25	26.0	104	85-124
1330-20-7	Xylene (total)	75	78.1	104	86-120

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	87-116%
17060-07-0	1,2-Dichloroethane-D4	91%	76-127%
2037-26-5	Toluene-D8	93%	86-112%
460-00-4	4-Bromofluorobenzene	87%	84-120%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F96891
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
F96891-1MS	J079001.D	1	09/25/12	MM	n/a	n/a	VJ4119
F96891-1MSD	J079002.D	1	09/25/12	MM	n/a	n/a	VJ4119
F96891-1	J078989.D	1	09/25/12	MM	n/a	n/a	VJ4119

The QC reported here applies to the following samples: **Method:** SW846 8260B

F96891-1, F96891-2, F96891-3, F96891-4, F96891-5, F96891-6, F96891-7, F96891-8, F96891-9, F96891-10, F96891-11

CAS No.	Compound	F96891-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0 U		25	22.4	90	23.3	93	4	83-124/11
156-59-2	cis-1,2-Dichloroethylene	1.0 U		25	22.4	90	22.9	92	2	81-114/10
100-41-4	Ethylbenzene	1.0 U		25	22.8	91	23.6	94	3	87-118/10
87-68-3	Hexachlorobutadiene	2.0 U		25	25.6	102	27.5	110	7	71-133/12
98-82-8	Isopropylbenzene	1.0 U		25	24.7	99	24.6	98	0	87-131/10
75-09-2	Methylene chloride	5.0 U		25	18.1	72	18.7	75	3	69-125/11
1634-04-4	Methyl Tert Butyl Ether	13.7		25	34.5	83	36.6	92	6	75-116/10
91-20-3	Naphthalene	5.0 U		25	20.1	80	22.5	90	11	59-125/15
95-63-6	1,2,4-Trimethylbenzene	2.0 U		25	20.1	80*	18.6	74*	8	82-120/10
108-67-8	1,3,5-Trimethylbenzene	2.0 U		25	21.7	87	19.6	78*	10	83-123/10
127-18-4	Tetrachloroethylene	1.0 U		25	24.9	100	24.4	98	2	80-131/12
79-01-6	Trichloroethylene	1.0 U		25	24.0	96	25.5	102	6	85-124/10
1330-20-7	Xylene (total)	3.0 U		75	71.2	95	70.1	93	2	86-120/10

CAS No.	Surrogate Recoveries	MS	MSD	F96891-1	Limits
1868-53-7	Dibromofluoromethane	97%	98%	95%	87-116%
17060-07-0	1,2-Dichloroethane-D4	92%	94%	93%	76-127%
2037-26-5	Toluene-D8	91%	94%	92%	86-112%
460-00-4	4-Bromofluorobenzene	88%	87%	88%	84-120%

* = Outside of Control Limits.

Southeast ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: F96891
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP43570-MB	ZF52799.D	1	09/18/12	FEA	09/17/12	OP43570	GZF1979

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO

F96891-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.25	0.15	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	89%	38-122%

Method Blank Summary

Job Number: F96891
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP43570-MB	ZF52877.D	1	09/20/12	FEA	09/17/12	OP43570	GZF1981

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO

F96891-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.25	0.15	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	75%	38-122%

Method Blank Summary

Job Number: F96891
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP43592-MB	ZF52927.D	1	09/20/12	FEA	09/18/12	OP43592	GZF1982

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO

F96891-2, F96891-3, F96891-4, F96891-5, F96891-6, F96891-7, F96891-8, F96891-9, F96891-10, F96891-11

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.25	0.15	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	80%	38-122%

Blank Spike Summary

Job Number: F96891
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP43570-BS	ZF52798.D	1	09/18/12	FEA	09/17/12	OP43570	GZF1979

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO

F96891-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH (C8-C40)	0.85	0.685	81	54-110

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	97%	38-122%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: F96891
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP43570-BS	ZF52876.D	1	09/20/12	FEA	09/17/12	OP43570	GZF1981

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO

F96891-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH (C8-C40)	0.85	0.574	68	54-110

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	80%	38-122%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: F96891
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP43592-BS	ZF52926.D	1	09/20/12	FEA	09/18/12	OP43592	GZF1982

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO

F96891-2, F96891-3, F96891-4, F96891-5, F96891-6, F96891-7, F96891-8, F96891-9, F96891-10, F96891-11

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH (C8-C40)	0.85	0.644	76	54-110

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	94%	38-122%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F96891
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP43570-MS	ZF52801.D	1	09/18/12	FEA	09/17/12	OP43570	GZF1979
OP43570-MSD	ZF52802.D	1	09/18/12	FEA	09/17/12	OP43570	GZF1979
F96860-1	ZF52800.D	1	09/18/12	FEA	09/17/12	OP43570	GZF1979

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO

F96891-1

CAS No.	Compound	F96860-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (C8-C40)	0.25	U	1.73	1.19	69	1.15	66	3	54-110/28

CAS No.	Surrogate Recoveries	MS	MSD	F96860-1	Limits
84-15-1	o-Terphenyl	79%	76%	69%	38-122%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: F96891
Account: BFACFLO BFA Environmental Consultants
Project: NTC Orlando, Orlando, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP43592-MS	ZF52929.D	1	09/20/12	FEA	09/18/12	OP43592	GZF1982
OP43592-MSD	ZF52930.D	1	09/20/12	FEA	09/18/12	OP43592	GZF1982
F96829-1	ZF52928.D	1	09/20/12	FEA	09/18/12	OP43592	GZF1982

The QC reported here applies to the following samples: **Method:** FLORIDA-PRO

F96891-2, F96891-3, F96891-4, F96891-5, F96891-6, F96891-7, F96891-8, F96891-9, F96891-10, F96891-11

CAS No.	Compound	F96829-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH (C8-C40)	0.232	I	1.63	1.44	74	1.43	73	1	54-110/28

CAS No.	Surrogate Recoveries	MS	MSD	F96829-1	Limits
84-15-1	o-Terphenyl	74%	77%	104%	38-122%

* = Outside of Control Limits.

APPENDIX E
Selected Well Concentration Trend Analysis

MAROS Statistical Trend Analysis Summary

Project: Orlando NTC SA-36NW

Location: Orlando

User Name: BFA Environmental

State: Florida

Time Period: 8/4/2008 **to** 9/12/2012

Consolidation Period: No Time Consolidation

Consolidation Type: Median

Duplicate Consolidation: Average

ND Values: Detection Limit

J Flag Values : Actual Value

Well	Source/ Tail	Number of Samples	Number of Detects	Average Conc. (mg/L)	Median Conc. (mg/L)	All Samples "ND" ?	Mann-Kendall Trend	Linear Regression Trend
NAPHTHALENE								
MW-38C	S	17	17	5.1E-02	4.2E-02	No	NT	NT
MW-48C	T	16	16	3.5E-02	3.8E-02	No	D	S

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); No Detectable Concentration (NDC)

The Number of Samples and Number of Detects shown above are post-consolidation values.