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NAS CECIL FIELD, FL
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"CONFIRMATORY SAMPLING REPORT FOR BUILDING 81 TANKS 81 A, B AND C BASE
REALIGNMENT AND CLOSURE NAS CECIL FIELD FL"

9/1/2000

TETRA TECH NUS INC

Confirmatory Sampling Report
for
Building 81
Tanks 81 A, B & C

Base Realignment and Closure

Naval Air Station Cecil Field
Jacksonville, Florida



Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order 0121

September 2000

**CONFIRMATORY SAMPLING REPORT
FOR
BUILDING 81, TANKS 81 A, B & C
BASE REALIGNMENT AND CLOSURE**

**NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA**

**COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT**

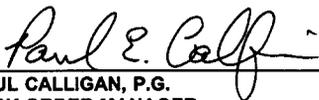
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Southern Division
Naval Facilities Engineering Command
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**CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0121**

SEPTEMBER 2000

PREPARED UNDER THE SUPERVISION OF:



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TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 INTRODUCTION.....	1
2.0 FIELD INVESTIGATION.....	1
3.0 SITE SCREENING RESULTS	3
4.0 CONCLUSIONS AND RECOMMENDATIONS.....	3
5.0 PROFESSIONAL REVIEW CERTIFICATION	6
REFERENCES	R-1
<u>APPENDICES</u>	
A LABORATORY ANALYTICAL REPORT.....	A-1

TABLES

<u>NUMBER</u>	<u>PAGE</u>
3-1 Summary of Soil Screening Data.....	4
3-2 Summary of Soil Analytical Results	5

FIGURES

<u>NUMBER</u>	<u>PAGE</u>
2-1 Soil Boring Locations Data.....	2

ACRONYMS

ABB-ES	ABB Environmental Services, Inc.
AST	Above Ground Storage Tank
BLS	Below Land Surface
CSR	Confirmatory Sampling Report
FDEP	Florida Department of Environmental Protection
KAG	Kerosene Analytical Group
NAS	Naval Air Station
OVA-FID	Organic Vapor Analyzer-Flame Ionization Detector
POA	Plan of Action
SAP	Sampling and Analysis Plan
SCTL	Soil Cleanup Target Levels
SOUTHNAVFACENGCOM	Southern Division Naval Facilities Engineering Command
TiNUS	Tetra Tech NUS, Inc.

1.0 INTRODUCTION

Tetra Tech NUS, Inc. (TtNUS) was authorized by Southern Division Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to conduct a site investigation and develop a Confirmatory Sampling Report (CSR) for Tanks 81 A, B & C at Naval Air Station (NAS) Cecil Field in Jacksonville, Duval County, Florida. A Sampling and Analysis Plan (SAP) for the assessment of soil and possibly groundwater at various tank sites including Tanks 81 A, B & C was submitted by TtNUS (2000a).

Former Tanks 81 A, B & C consisted of three aboveground storage tanks (AST) located northwest of Building 81. The ASTs were used to store diesel fuel. A concrete-lined pit provided secondary containment.

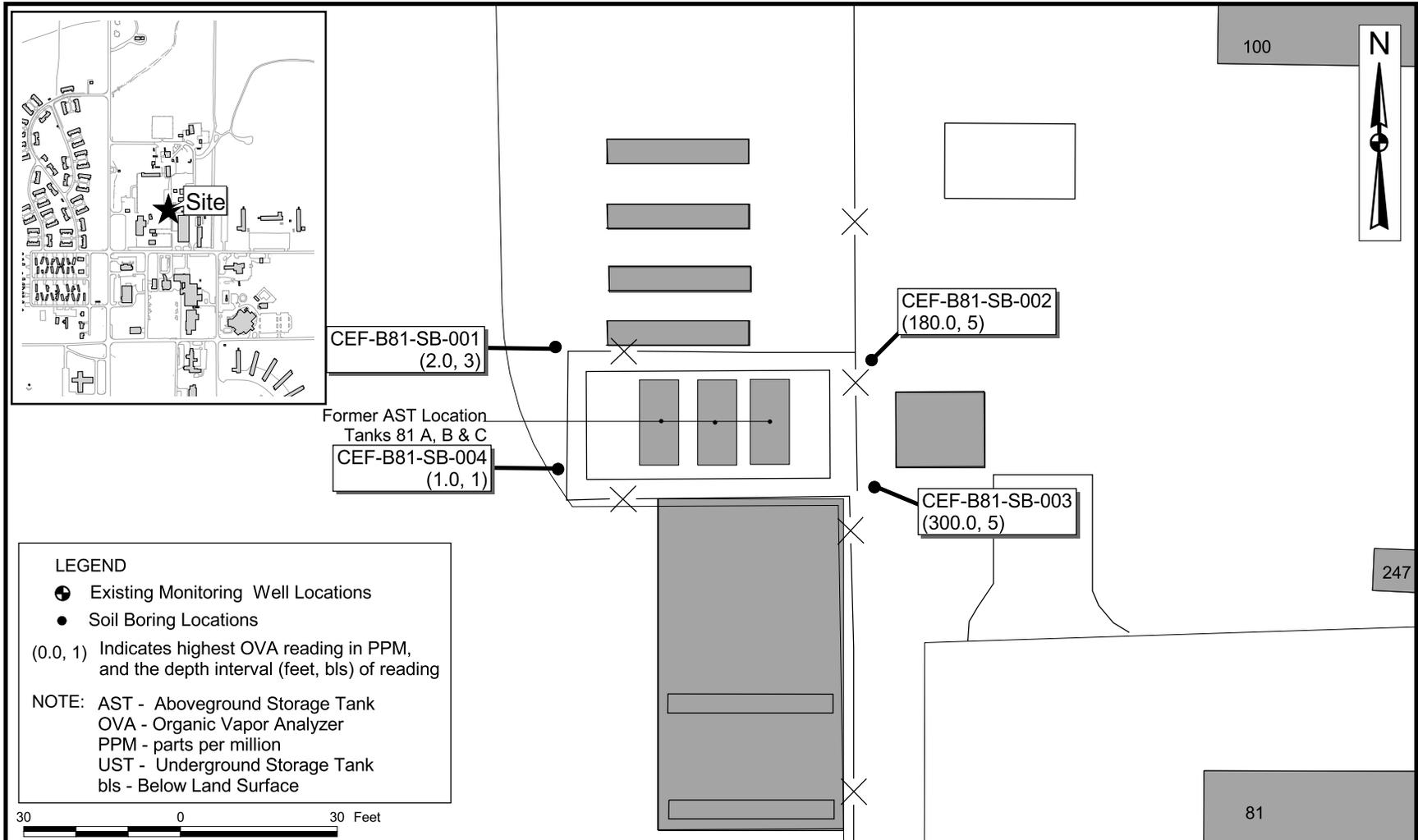
2.0 FIELD INVESTIGATION

The investigation was conducted between June 7 and 21, 2000 and included:

- Utility location prescribed for underground work.
- Four hand auger soil borings.
- Soil screening at prescribed intervals (TtNUS, 2000a).
- Soil sampling for laboratory analysis.

The methodologies and equipment that were used during this investigation are in accordance with the TtNUS Comprehensive Quality Assurance Plan No. 980038, as approved by the Florida Department of Environmental Protection (FDEP). A site location map is provided inset to Figure 2-1.

Following utility location protocols and an initial site visit, four hand auger borings were advanced in the soil around the former location of Tanks 81 A, B & C (Figure 2-1). The soil borings were advanced to the water table, general soil lithology was recorded, and soil samples were collected at depth intervals of 1 foot below land surface (pls) and every 2 feet thereafter to the water table. Soil screening was conducted with an organic vapor analyzer-flame ionization detector (OVA-FID). Since soil OVA data exceeded 50 parts per million, a soil sample (CEF-B81-SB-003-03) was collected. The soil sample was sent to a laboratory for analysis of Kerosene Analytical Group (KAG) constituents as prescribed by Florida Administrative Code, Chapter 62-770.



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SOIL BORING LOCATIONS DATA
 CONFIRMATORY SAMPLING REPORT
 BUILDING 81, TANKS 81 A,B & C
 NAVAL AIR STATION CECIL FIELD
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 121	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2-1	REV 0

3.0 SITE SCREENING RESULTS

The general lithology of the soils excavated were silty fine-grained sands in various shades of gray and brown. The depth of the water table at the site ranged from 5 to 6 feet bls. The soil OVA-FID data collected during the investigation is summarized in Table 3-1 and presented on Figure 2-1.

Excessively contaminated soil (>50 PPM) was indicated in two soil borings (CEF-B81-SB-002 and CEF-B81-SB-003) from about 1 foot bls to the water table. To confirm the OVA-FID results, a soil sample was collected from the soil boring with the highest OVA readings (CEF-B81-SB-003) for confirmatory laboratory analysis. Since the water table was at 5 feet bls, the soil sample was collected from approximately 3 to 4 feet bls to ensure the sample data was representative of the unsaturated zone soil. Comparison of the soil analytical results to the FDEP Soil Cleanup Target Levels (SCTLs) indicates that the concentrations of all contaminants of concern (CoCs) were below the SCTLs. The soil analytical results are summarized in Table 3-2, and the laboratory report is attached as Appendix A.

4.0 CONCLUSIONS AND RECOMMENDATIONS

OVA-FID screening results suggest that the soil has been impacted by petroleum products. Fixed-base laboratory analysis was conducted to confirm the OVA-FID screening data. The results of the confirmatory laboratory analysis indicates that the soil has not been impacted by petroleum products. Since the confirmatory laboratory analysis does not support the OVA-FID data, no further investigation was conducted. Based on these results, TtNUS recommends no further action for Tanks 81 A, B & C.

**Table 3-1
Summary of Soil Screening Data**

Confirmatory Sampling Report
Building 81, Tank 81
Naval Air Station Cecil Field
Jacksonville, Florida

Location	OVA-FID Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Corrected
CEF-B81-SB-001	1	0.0	0.0	0.0
	3	2.0	0.0	2.0
	5	0.0	0.0	0.0
CEF-B81-SB-002	1	0.0	0.0	0.0
	3	80.0	20.0	60.0
	5	200.0	20.0	180.0
CEF-B81-SB-003	1	0.0	0.0	0.0
	3	80.0	20.0	60.0
	5	500.0	200.0	300.0
CEF-B81-SB-004	1	1.0	0.0	1.0
	3	0.0	0.0	0.0
	5	0.0	0.0	0.0

Notes: The soil samples were screened on June 14, 2000.
Soil samples were filtered with carbon to determine the methane concentration.
The water table was encountered at 6 feet bls in SB-002 and at 5 feet bls in the other borings.

Acronyms:
OVA-FID = organic vapor analyzer-flame ionization detector.
ppm = parts per million.
bls = below land surface.

**Table 3-2
Summary of Soil Analytical Results**

Confirmatory Sampling Report
Building 81, Tanks 81 A, B & C
Naval Air Station Cecil Field
Jacksonville, Florida

Compound	CEF-B81-SB-003-03	FDEP SCTL (Residential)	FDEP SCTL (Leachability based on Groundwater Criteria)
<u>Volatile Organic Aromatics (USEPA Method 8260B)</u>			
Benzene	<7.2	1100	7
Ethylbenzene	<7.2	1100000	600
Methyl tert-Butyl Ether (MTBE)	<7.2	3200000	200
Toluene	<7.2	380000	500
Xylenes	<7.2	5900000	200
<u>Polynuclear Aromatic Hydrocarbons (USEPA Method 8270C)</u>			
1-Methylnaphthalene	<69	68000	2200
2-Methylnaphthalene	8.7J	80000	6100
Acenaphthene	<69	1900000	2100
Acenaphthylene	<69	1100000	27000
Anthracene	<69	18000000	2500000
Benzo(a)anthracene	42J	1400	3200
Benzo(a)pyrene	70	100	8000
Benzo(b)flouranthene	100	1400	10000
Benzo(g,h,l)perylene	54J	2300000	32000000
Benzo(k)flouranthene	39J	15000	25000
Chrysene	55J	140000	77000
Dibenz(a,h)anthracene	14J	100	30000
Flouranthene	63J	2900000	1200000
Flourene	<69	2200000	160000
Indeno(1,2,3-cd)pyrene	50J	1500	28000
Naphthalene	10J	40000	1700
Phenanthrene	13J	2000000	250000
Pyrene	61J	2200000	880000
<u>Petroleum Range Organics (PRO) (Method FL-PRO)</u>			
Total recoverable Petroleum Hydrocarbons	55000	340000	340000

Notes:

The soil sample was collected on 6/21/00.

All concentrations are micrograms per kilogram (ug/kg).

J – Positive result is estimated as a result of a value below the method detection limit, but above the practical quantitative limit.

FDEP – Florida Department of Environmental Protection

SCTL – Soil Cleanup Target Levels

USEPA – United States Environmental Protection Agency

5.0 PROFESSIONAL REVIEW CERTIFICATION

The data contained in this report was prepared using sound hydrogeologic principles and judgement. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This CSR was developed for Tanks 81 A, B & C at the former NAS Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.



Mervin Dale
Florida Professional Geologist
P.G. No. 0001917



Date

REFERENCES

TtNUS, 2000a. *Sampling and Analysis Plan for Site Assessment and Confirmatory Sampling at Various UST and AST Sites, Naval Air Station Cecil Field, Jacksonville, Florida.* Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina, March.

TtNUS, 2000b. *Plan of Action No. GH01. Naval Air Station Cecil Field, Jacksonville, Florida.* Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina, January.

Appendix A

ACCURA ANALYTICAL LABORATORY, INC.

6017 Financial Drive, Norcross, Georgia 30017, Phone (770)449-8800, FAX (770)449-5477
FL Certification # E87429 NC Certification # 483 SC Certification # 98015 USACE-MRD Approved
LABORATORY REPORT

Accura Sample ID #: AB94287

Accura Project #: 24749

Client: Tetra Tech Nus -Tallahassee

Date Sampled: 6/21/00

Client Contact: PAUL CALLIGAN

Date Received: 6/22/00

Client Project Number: N0486

Date Reported: 7/18/00

Client Project Name: NAS - CECIL FIELD - CTO 0121

Sample Matrix: SOIL

Client Sample ID: CEF-B81-SB-003-03

ANALYSIS: % Solids

Method Ref: EPA 160.3

Date Ext/Dig/Prep: 7/11/00

Date Analyzed: 7/11/00

Result Units: %

Analyte Name

Analytical Results

Reported Detection Limits

Solids

96

1.0

ANALYSIS: BTEX + MTBE by GC/MS

Method Ref: 8260B

Date Ext/Dig/Prep: 6/22/00

Date Analyzed: 6/22/00

Result Units: ug/Kg

Analyte Name

Analytical Results

Reported Detection Limits

Benzene

<RDL

7.2

Ethylbenzene

<RDL

7.2

Methyl tert-Butyl Ether (MTBE)

<RDL

7.2

Toluene

<RDL

7.2

Xylenes

<RDL

7.2

ANALYSIS: PAH's

Method Ref: 8270C

Date Ext/Dig/Prep: 6/27/00

Date Analyzed: 7/10/00

Result Units: ug/Kg

Analyte Name

Analytical Results

Reported Detection Limits

1-Methylnaphthalene

<RDL

69

2-Methylnaphthalene

8.7J

69

Acenaphthene

<RDL

69

Acenaphthylene

<RDL

69

Anthracene

<RDL

69

Benzo(a)anthracene

42J

69

Benzo(a)pyrene

70

69

Benzo(b)fluoranthene

100

69

Benzo(g,h,i)perylene

54J

69

Benzo(k)fluoranthene

39J

69

Chrysene

55J

69

Dibenz(a,h)anthracene

14J

69

Fluoranthene

63J

69

Fluorene

<RDL

69

Indeno(1,2,3-cd)pyrene	50J	69
Naphthalene	10J	69
Phenanthrene	13J	69
Pyrene	61J	69

ANALYSIS: Petroleum Range Organics (PRO)

Method Ref: FL-PRO

Date Ext/Dig/Prep: 6/27/00 Date Analyzed: 7/5/00 Result Units: mg/Kg

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Reported Detection Limits</u>
Petroleum Range Organics (PRO)	55	31

ANALYSIS: X B/N Sample Surrogates (Soils)

Method Ref: 8270C

Date Ext/Dig/Prep: 6/27/00 Date Analyzed: 7/10/00 Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Reported Detection Limits</u>
2-Fluorobiphenyl (Range 45-118)	89	
Nitrobenzene-d5 (Range 34-117)	81	
p-Terphenyl-d14 (Range 42-119)	95	

ANALYSIS: X PRO Sample Surrogates (Soil)

Method Ref: FL-PRO

Date Ext/Dig/Prep: 6/27/00 Date Analyzed: 7/5/00 Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Reported Detection Limits</u>
C(39) (Range 60-118)	61	
o-Terphenyl (Range 62-109)	73	

ANALYSIS: X VOC Sample Surrogates-Soil

Method Ref: 5035/8260B

Date Ext/Dig/Prep: 6/22/00 Date Analyzed: 6/22/00 Result Units: %

<u>Analyte Name</u>	<u>Analytical Results</u>	<u>Reported Detection Limits</u>
1,2-Dichloroethane-d4 (Range 81-151)	100	
4-Bromofluorobenzene (Range 80-131)	113	
Toluene-d8 (Range 82-119)	106	

ACCURA ANALYTICAL LABORATORY, INC.

6017 Financial Drive, Norcross, Georgia, 30071, Phone (770) 449-8800

CASE NARRATIVE for Project Number: 24749

Client Project: NAS - Cecil Field - CTO 0121 / N0486

Task Order Manager: Paul Calligan

The following items were noted concerning this project:

1. The following samples were received by Accura Analytical Laboratory on 5/24/00 at 1030:

<u>Client I.D.</u>	<u>Laboratory I.D.</u>
CEF-B81-SB-003-03	AB94287
CEF-B271-SB-008-01	AB94288
CEF-B271-SB-004-01	AB94289
CEF-B271-SB-003-03	AB94290
CEF-B271-SB-003-03MS/MSD	AB94291
CEF-B271-SB-DU01	AB94292
LEF-QH-SB002-01	AB94293

2. The cooler temperature was 4°C upon receipt.
3. All soil results have been reported on a dry weight basis.
4. The "J" flags applied to the PAH results indicate estimated values in which the compounds are present at concentrations that are less than the quantitation limit, but above the method detection limit.
5. The following samples required dilution due to high analyte concentration and/or the nature of the matrix, resulting in elevated detection limits:

<u>PAH SW-846-8310</u>	<u>VOC SW-846-8260B</u>	<u>FL-PRO</u>
CEF-B271-SB-003-03	CEF-B271-SB-003-03	CEF-B271-SB-003-03
CEF-B271-SB-DU01	CEF-B271-SB-DU01	CEF-B271-SB-DU01
Matrix Spike	Matrix Spike	Matrix Spike
Matrix Spike Duplicate	Matrix Spike Duplicate	Matrix Spike Duplicate

6. The following surrogates were outside the method specified limits:

<u>FL-PRO</u>	<u>ortho-Terphenyl</u>
<u>Nonatriacontane (C39)</u>	CEF-B271-SB-003-03MS/MSD
CEF-B271-SB-008-01	
CEF-B271-SB-003-03	
CEF-B271-SB-003-03MS/MSD	
CEF-B271-SB-DU01	
LEF-QH-SB002-01	
Method Blank	
Laboratory Control Sample	

8. The Matrix Spike and/or Matrix Spike Duplicate recoveries were outside the project specific limits for the following analytes due to sample heterogeneity:

VOC SW-846-8260B

Ethylbenzene

SVOC SW-846-8270C

2-Methylnaphthalene

Naphthalene

FL-PRO

TPH

The Laboratory Control Sample was within established in-house limits; therefore the data satisfies the method requirements.

9. The relative percent difference between the Matrix Spike and Matrix Spike Duplicate analyses was outside the project specific limits for the following analytes due to sample heterogeneity:

SVOC SW-846-8270C

2-Methylnaphthalene

Naphthalene

10. The Laboratory Control Sample for the FL-PRO analysis was outside the project specified limits but within established in-house limits of 63-143; therefore the data satisfies the method requirements.

Quality Assurance

ACCURA ANALYTICAL LABORATORY, INC.

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FL Certification # E87429 NC Certification # 483 SC Certification # 98015 USACE-MRD Approved
LABORATORY REPORT

Accura Sample ID #: AB94291

Accura Project #: 24749

Client: Tetra Tech Nus -Tallahassee

Date Sampled: 6/21/00

Client Contact: PAUL CALLIGAN

Date Received: 6/22/00

Client Project Number: N0486

Date Reported: 7/18/00

Client Project Name: NAS - CECIL FIELD - CTO 0121

Sample Matrix: SOIL

Client Sample ID: CEF-B271-SB-003-03-MS/MSD

ANALYSIS: % Solids

Method Ref: EPA 160.3

Date Ext/Dig/Prep: 7/11/00

Date Analyzed: 7/11/00

Result Units: %

Analyte Name

Analytical Results

Reported Detection Limits

Solids

92

1.0

Accura Analytical Laboratory, Inc.

