CON: 12-15
Doc # 9826

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

SEP 07 2006

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Keith Sasseen
Indian Hills Community College
5252 Grandview Building 1
Ottumwa, Iowa 52501

Dear Mr. Sasseen:

RE: Ottumwa (ex) Navy Air Station
EPA ID #IAN000703254
ASR No. 3047

Enclosed are copies of Sample Collection Field Sheets and Results of Sample Analysis reports for environmental samples collected from the Indian Hills Community College property in June 2006 by the U.S. Environmental Protection Agency (EPA). This sampling activity is a continuation of the previous investigation conducted for the above referenced Superfund site.

Sample numbers -4, -5, and -6 are soil samples. The analytical results from the soil samples indicate that the concentration of metals and volatile organic compounds (VOCs) are considered within acceptable levels found in Preliminary Remediation Goals (PRGs) found in residential soils.

The PRGs role in the site "screening" is to help identify areas, contaminants, and conditions that do not require further federal attention at a particular site. Generally, at sites where contaminant concentrations fall below PRGs, no further action or study is warranted under the Superfund program, so long as the exposure assumptions at a site match those taken into account by the PRG calculations. Chemical concentrations above the PRG would not automatically designate a site as "dirty" or trigger a response action. However, exceeding a PRG suggests that further evaluation of the potential risks posed by the site contamination maybe appropriate

Any questions regarding the public health significance of the results should be directed to Charles Barton at the Iowa Department of Health at 515-281-6881.

This information is forwarded to you in accordance with the provisions of Section 3007(a) of the Resource Conservation and Recovery Act of 1976, as amended; and Section 104(e)(4)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended. This letter is intended to transmit the data received from the laboratory and not to provide a full or detailed analysis of the data.

Thank you for your cooperation with this investigation. If you have questions about the past or future investigation activities, or any other questions, please contact me at 913-551-7568.

Sincerely,

Ronald King
Enforcement/Fund Removal Branch
Superfund Division

Enclosures:

cc: Charles Barton, IDH - w/enclosures
Cal Lundberg, IDEQ - w/enclosures

Ottumwa (EX) NAS – PA Sampling				
Sample Number	**Location**	**Media**	**Other**	**Results**
3047-4	Indian Hills Community College – Keith Sasseen 5252 Grandview Building 1 Ottumwa, IA 52501	Soil SB-3	10' - 12'	Mercury 0.022 Aluminum 4970 Barium 217 Calcium 76600 Chromium 5.31 Cobalt 2.71 Copper 8.94 Iron 13200 Lead 12.2 Magnesium 13700 Manganese 372 Nickel 9.58 Sodium 110 Vanadium 13.7 Zinc 137 Acetone 55 Carbon Disulfide 15
3047-5	Indian Hills Community College – Keith Sasseen 5252 Grandview Building 1 Ottumwa, IA 52501	Soil SB-4	0.5 - 2'	Mercury 0.041 Aluminum 12100 Arsenic 7.64 Barium 296 Beryllium 1.02 Calcium 5200 Chromium 13.2 Cobalt 8.96 Copper 14.2 Iron 18800 Lead 22.2 Magnesium 2850 Manganese 998 Nickel 13.6 Sodium 53.3 Vanadium 30.8 Zinc 42.9 Acetone 93 2-Butanone 6.8
3047-6	Indian Hills Community College – Keith Sasseen 5252 Grandview Building 1 Ottumwa, IA 52501	Soil	0.5' – 2'	Mercury 0.029 Aluminum 12800 Arsenic 5.84 Barium 217 Calcium 4040 Chromium 14.4 Cobalt 8.53 Copper 12.6 Iron 16800 Lead 17.8 Magnesium 2720 Manganese 709 Nickel 13.4 Sodium 73.9 Vanadium 34.4 Zinc 37.2 Acetone 85

TABLE 1

SOURCE SOIL SAMPLE SUMMARY
OTTUMWA (EX) NAS SITE, OTTUMWA, IOWA
JUNE 2006

EPA Sample Number	Location	Borehole Number	Depth (ft bgs)	Sample Date	Sample Time
3047-1	Near entrance to sewage treatment plant	SB-1	0.5 – 2	6/12/06	15:15
3047-2			12 – 14	6/12/06	15:50
3047-3	Debris burial area	SB-2	0.5 – 2	6/12/06	16:45
3047-4	North end of ammunition/rifle range area	SB-3	0.5 – 2	6/12/06	18:25
3047-5	South end of ammunition/rifle range area	SB-4	0.5 – 2	6/13/06	7:50
3047-6	Skeet range	SB-5	0.5 – 2	6/13/06	8:10
3047-7	City-owned alfalfa field east-southeast of bottling plant and southwest of warehouse	SB-6	0.5 – 2	6/13/06	10:25
3047-8			12 – 14	6/13/06	10:40
3047-9	Between former rail spur and 1st Avenue, northwest of 5th Street	SB-7	0.5 – 2	6/13/06	12:50
3047-9FD			0.5 – 2	6/13/06	12:50
3047-11			12 – 14	6/13/06	13:15
3047-12	City easement southwest of bottling plant	SB-8	0.5 – 2	6/13/06	14:20
3047-13			12 – 14	6/13/06	14:40
3047-14	Easement north of intersection of 2nd Avenue and 8th Street by former Motor Repair	SB-9	0.5 – 2	6/13/06	15:20
3047-15			10 – 12	6/13/06	15:40
3047-16	Southeast of Airport Terminal, across Terminal Street	SB-10	0.5 – 2	6/13/06	16:30
3047-17			12 – 14	6/13/06	17:00
3047-18	Background location; north of Terminal Avenue near entrance sign from Airport Road	SB-11	0.5 – 2	6/13/06	17:45
3047-19			12 – 14	6/13/06	18:05

Notes:

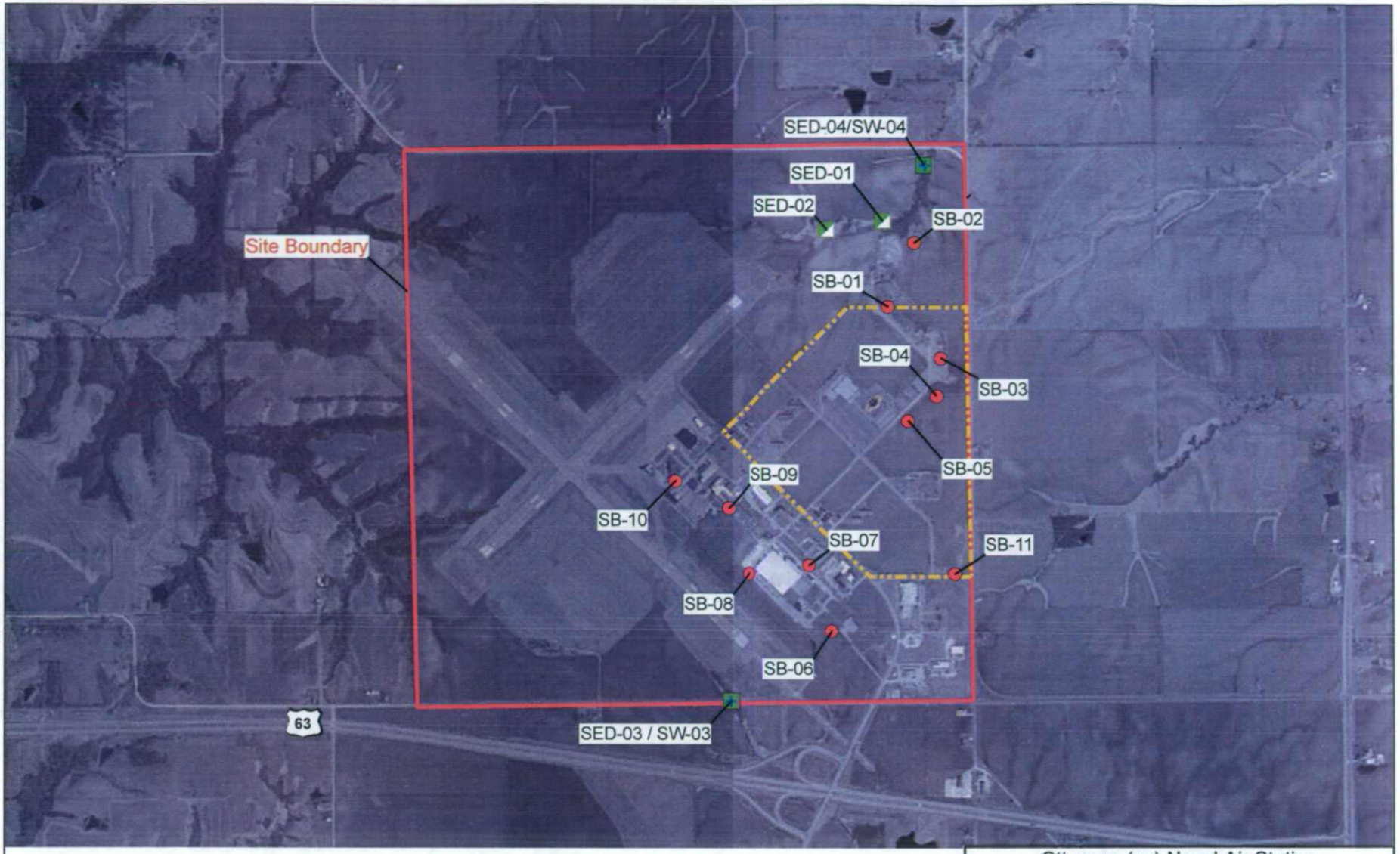
EPA U.S. Environmental Protection Agency ft bgs Feet
below ground surface
FD Field duplicate SB Soil boring

Sediment samples

3047-22 SED-1 (Northern Drainage)	3047-24 SED-3 (South-flowing Stream)	3047-24FD SED-3 (South-flowing Stream)	3047-20 SED-4 (North-flowing Stream)	3047-23 SED-2 (BKG)

Surface Water Samples

2986-301 SW-3 (South-flowing Stream)	2986-301FD SW-3 (South-flowing Stream)	2986-303 SW-4 (North-flowing Stream)



Legend

- Soil boring sample location
- Sediment sample location
- Surface water and sediment sample location
- Indian Hills Community College Property

N

0 1,000 2,000

Scale in Feet

Source: Ottumwa County, Iowa NW and NE DOQQ, 2002 CIR Imagery

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Ottumwa (ex) Naval Air Station
Ottumwa, Iowa

Figure 4
Sample Location Map

Tetra Tech EM Inc.

Date: 06/20/06 Drawn By: Roger Stull Project No: 19004.L06.0002.006.007

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, Kansas 66101

08/03/2006

Results of Sample Analysis

Sample: 3047-4
Project ID: RKOTTEXNAS

These are the results from the analysis of solid sample number 3047-4. This sample was collected on 06/12/2006 at the location described as: Soil sample (SB-3). If you have any questions about these results, contact Ron King at the above address or by calling 913-551-7568. Correspondence should refer to sample number 3047-4 for project: RKOTTEXNAS - Ottumwa (EX) NAS - PA sampling.

Analysis/Analyte	Amount Found	Units
Explosives in Soil by Gas Chromatography with Electron Capture Detection (GC/ECD)		
2-Amino-4,6-dinitrotoluene	Less Than 64	Micrograms per Kilogram
4-Amino-2,6-dinitrotoluene	Less Than 107	Micrograms per Kilogram
3,5-Dinitroaniline	Less Than 500	Micrograms per Kilogram
1,3-Dinitrobenzene	Less Than 69	Micrograms per Kilogram
2,4-Dinitrotoluene	Less Than 146	Micrograms per Kilogram
2,6-Dinitrotoluene	Less Than 199	Micrograms per Kilogram
Hexahydro-1,3,5-trinitro-1,3,5-triazine	Less Than 102	Micrograms per Kilogram
Nitrobenzene	Less Than 42	Micrograms per Kilogram
Nitroglycerine	Less Than 500	Micrograms per Kilogram
2-Nitrotoluene	Less Than 102	Micrograms per Kilogram
3-Nitrotoluene	Less Than 89	Micrograms per Kilogram
4-Nitrotoluene	Less Than 162	Micrograms per Kilogram
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	Less Than 394	Micrograms per Kilogram
Pentaerythritoltetranitrate	Less Than 545	Micrograms per Kilogram
1,3,5-Trinitrobenzene	Less Than 92	Micrograms per Kilogram
2,4,6-Trinitrophenylmethylnitramine	Less Than 134	Micrograms per Kilogram
2,4,6-Trinitrotoluene	Less Than 100	Micrograms per Kilogram
Mercury in Soil or Sediment		
Mercury	0.022	Milligrams per Kilogram
Metals in Soil by Inductively Coupled Argon Plasma (ICP)		
Aluminum	4970	Milligrams per Kilogram
Antimony	Less Than 2	Milligrams per Kilogram
Arsenic	Less Than 5	Milligrams per Kilogram

Sample: 3047-4
Project ID: RKOTTEXNAS

Analysis/Analyte	Amount Found	Units
Barium	217	Milligrams per Kilogram
Beryllium	Less Than 1	Milligrams per Kilogram
Cadmium	Less Than 1	Milligrams per Kilogram
Calcium	76600	Milligrams per Kilogram
Chromium	5.31	Milligrams per Kilogram
Cobalt	2.71	Milligrams per Kilogram
Copper	8.94	Milligrams per Kilogram
Iron	13200	Milligrams per Kilogram
Lead	12.2	Milligrams per Kilogram
Magnesium	13700	Milligrams per Kilogram
Manganese	372	Milligrams per Kilogram
Molybdenum	Less Than 2	Milligrams per Kilogram
Nickel	9.58	Milligrams per Kilogram
Potassium	Approximately 789	Milligrams per Kilogram
Selenium	Less Than 10	Milligrams per Kilogram
Silver	Less Than 2	Milligrams per Kilogram
Sodium	110	Milligrams per Kilogram
Thallium	Less Than 10	Milligrams per Kilogram
Vanadium	13.7	Milligrams per Kilogram
Zinc	137	Milligrams per Kilogram

Polychlorinated Biphenyls (PCBs) in Soil by Gas Chromotography and Electron Capture Detection (GC/EC)

Aroclor 1016	Less Than 22	Micrograms per Kilogram
Aroclor 1221	Less Than 22	Micrograms per Kilogram
Aroclor 1232	Less Than 22	Micrograms per Kilogram
Aroclor 1242	Less Than 22	Micrograms per Kilogram
Aroclor 1248	Less Than 22	Micrograms per Kilogram
Aroclor 1254	Less Than 11	Micrograms per Kilogram
Aroclor 1260	Less Than 11	Micrograms per Kilogram

Percent Solid

Solids, percent	91.0	Percent

Perchlorate in Soil by Ion Chromatography (IC)

Perchlorate	Less Than 0.020	Milligrams per Kilogram

Semi-volatile Total Petroleum Hydrocarbon (TPH) in Soil by Gas Chromatography and Flame

Sample: 3047-4
Project ID: RKOTTEXNAS

Analysis/Analyte	Amount Found	Units
Ionization Detection (GC/FID)		
Extractable TPH	Less Than 43	Milligrams per Kilogram
Volatile Total Petroleum Hydrocarbon (TPH) in Soil by Gas Chromatography and Mass Selective Detection (GC/MS)		
Purgeable TPH	Less Than 54	Micrograms per Kilogram
Volatile Organic Compounds in Soil at Low Levels by Closed-System Purge-and-Trap GC/MS.		
Acetone	55	Micrograms per Kilogram
Benzene	Less Than 4.8	Micrograms per Kilogram
Bromodichloromethane	Less Than 4.8	Micrograms per Kilogram
Bromoform	Less Than 4.8	Micrograms per Kilogram
Bromomethane	Less Than 4.8	Micrograms per Kilogram
2-Butanone	Less Than 4.8	Micrograms per Kilogram
Carbon Disulfide	15	Micrograms per Kilogram
Carbon Tetrachloride	Less Than 4.8	Micrograms per Kilogram
Chlorobenzene	Less Than 4.8	Micrograms per Kilogram
Chloroethane	Less Than 4.8	Micrograms per Kilogram
Chloroform	Less Than 4.8	Micrograms per Kilogram
Chloromethane	Less Than 4.8	Micrograms per Kilogram
Cyclohexane	Less Than 4.8	Micrograms per Kilogram
1,2-Dibromo-3-Chloropropane	Less Than 4.8	Micrograms per Kilogram
Dibromochloromethane	Less Than 4.8	Micrograms per Kilogram
1,2-Dibromoethane	Less Than 4.8	Micrograms per Kilogram
1,2-Dichlorobenzene	Less Than 4.8	Micrograms per Kilogram
1,3-Dichlorobenzene	Less Than 4.8	Micrograms per Kilogram
1,4-Dichlorobenzene	Less Than 4.8	Micrograms per Kilogram
Dichlorodifluoromethane	Less Than 4.8	Micrograms per Kilogram
1,1-Dichloroethane	Less Than 4.8	Micrograms per Kilogram
1,2-Dichloroethane	Less Than 4.8	Micrograms per Kilogram
1,1-Dichloroethene	Less Than 4.8	Micrograms per Kilogram
cis-1,2-Dichloroethene	Less Than 4.8	Micrograms per Kilogram
trans-1,2-Dichloroethene	Less Than 4.8	Micrograms per Kilogram
1,2-Dichloropropane	Less Than 4.8	Micrograms per Kilogram
cis-1,3-Dichloropropene	Less Than 4.8	Micrograms per Kilogram
trans-1,3-Dichloropropene	Less Than 4.8	Micrograms per Kilogram
Ethyl Benzene	Less Than 4.8	Micrograms per Kilogram

Sample: 3047-4
Project ID: RKOTTEXNAS

Analysis/Analyte	Amount Found	Units
2-Hexanone	Less Than 4.8	Micrograms per Kilogram
Isopropylbenzene	Less Than 4.8	Micrograms per Kilogram
Methyl Acetate	Less Than 4.8	Micrograms per Kilogram
Methyl tert-butyl ether	Less Than 9.6	Micrograms per Kilogram
Methylcyclohexane	Less Than 4.8	Micrograms per Kilogram
Methylene Chloride	Less Than 4.8	Micrograms per Kilogram
4-Methyl-2-Pentanone	Less Than 4.8	Micrograms per Kilogram
Naphthalene	Less Than 9.6	Micrograms per Kilogram
Styrene	Less Than 4.8	Micrograms per Kilogram
1,1,2,2-Tetrachloroethane	Less Than 4.8	Micrograms per Kilogram
Tetrachloroethene	Less Than 4.8	Micrograms per Kilogram
Toluene	Less Than 4.8	Micrograms per Kilogram
1,2,3-Trichlorobenzene	Less Than 4.8	Micrograms per Kilogram
1,2,4-Trichlorobenzene	Less Than 4.8	Micrograms per Kilogram
1,1,1-Trichloroethane	Less Than 4.8	Micrograms per Kilogram
1,1,2-Trichloroethane	Less Than 4.8	Micrograms per Kilogram
Trichloroethene	Less Than 4.8	Micrograms per Kilogram
Trichlorofluoromethane	Less Than 4.8	Micrograms per Kilogram
1,1,2-Trichlorotrifluoroethane	Less Than 4.8	Micrograms per Kilogram
Vinyl Chloride	Less Than 4.8	Micrograms per Kilogram
m and/or p-Xylene	Less Than 4.8	Micrograms per Kilogram
o-Xylene	Less Than 4.8	Micrograms per Kilogram

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, Kansas 66101

08/03/2006

Results of Sample Analysis

Sample: 3047-5
Project ID: RKOTTEXNAS

These are the results from the analysis of solid sample number 3047-5. This sample was collected on 06/13/2006 at the location described as: Soil sample (SB-4, 0.5-2.0'). If you have any questions about these results, contact Ron King at the above address or by calling 913-551-7568. Correspondence should refer to sample number 3047-5 for project: RKOTTEXNAS - Ottumwa (EX) NAS - PA sampling.

Analysis/Analyte	Amount Found	Units
Explosives in Soil by Gas Chromatography with Electron Capture Detection (GC/ECD)		
2-Amino-4,6-dinitrotoluene	Less Than 64	Micrograms per Kilogram
4-Amino-2,6-dinitrotoluene	Less Than 107	Micrograms per Kilogram
3,5-Dinitroaniline	Less Than 500	Micrograms per Kilogram
1,3-Dinitrobenzene	Less Than 69	Micrograms per Kilogram
2,4-Dinitrotoluene	Less Than 146	Micrograms per Kilogram
2,6-Dinitrotoluene	Less Than 199	Micrograms per Kilogram
Hexahydro-1,3,5-trinitro-1,3,5-triazine	Less Than 102	Micrograms per Kilogram
Nitrobenzene	Less Than 42	Micrograms per Kilogram
Nitroglycerine	Less Than 500	Micrograms per Kilogram
2-Nitrotoluene	Less Than 102	Micrograms per Kilogram
3-Nitrotoluene	Less Than 89	Micrograms per Kilogram
4-Nitrotoluene	Less Than 162	Micrograms per Kilogram
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	Less Than 394	Micrograms per Kilogram
Pentaerythritoltetranitrate	Less Than 545	Micrograms per Kilogram
1,3,5-Trinitrobenzene	Less Than 92	Micrograms per Kilogram
2,4,6-Trinitrophenylmethylnitramine	Less Than 134	Micrograms per Kilogram
2,4,6-Trinitrotoluene	Less Than 100	Micrograms per Kilogram
Mercury in Soil or Sediment		
Mercury	0.041	Milligrams per Kilogram
Metals in Soil by Inductively Coupled Argon Plasma (ICP)		
Aluminum	12100	Milligrams per Kilogram
Antimony	Less Than 2	Milligrams per Kilogram
Arsenic	7.64	Milligrams per Kilogram

Sample: 3047-5
Project ID: RKOTTEXNAS

Analysis/Analyte	Amount Found	Units
Barium	296	Milligrams per Kilogram
Beryllium	1.02	Milligrams per Kilogram
Cadmium	Less Than 1	Milligrams per Kilogram
Calcium	5200	Milligrams per Kilogram
Chromium	13.2	Milligrams per Kilogram
Cobalt	8.96	Milligrams per Kilogram
Copper	14.2	Milligrams per Kilogram
Iron	18800	Milligrams per Kilogram
Lead	22.2	Milligrams per Kilogram
Magnesium	2850	Milligrams per Kilogram
Manganese	998	Milligrams per Kilogram
Molybdenum	Less Than 2	Milligrams per Kilogram
Nickel	13.6	Milligrams per Kilogram
Potassium	Approximately 1020	Milligrams per Kilogram
Selenium	Less Than 10	Milligrams per Kilogram
Silver	Less Than 2	Milligrams per Kilogram
Sodium	53.3	Milligrams per Kilogram
Thallium	Less Than 10	Milligrams per Kilogram
Vanadium	30.8	Milligrams per Kilogram
Zinc	42.9	Milligrams per Kilogram

Polychlorinated Biphenyls (PCBs) in Soil by Gas Chromotography and Electron Capture Detection (GC/EC)

Aroclor 1016	Less Than 23	Micrograms per Kilogram
Aroclor 1221	Less Than 23	Micrograms per Kilogram
Aroclor 1232	Less Than 23	Micrograms per Kilogram
Aroclor 1242	Less Than 23	Micrograms per Kilogram
Aroclor 1248	Less Than 23	Micrograms per Kilogram
Aroclor 1254	Less Than 12	Micrograms per Kilogram
Aroclor 1260	Less Than 12	Micrograms per Kilogram

Percent Solid

Solids, percent	83.1	Percent

Perchlorate in Soil by Ion Chromatography (IC)

Perchlorate	Less Than 0.020	Milligrams per Kilogram

Semi-volatile Total Petroleum Hydrocarbon (TPH) in Soil by Gas Chromatography and Flame

Sample: 3047-5
Project ID: RKOTTEXNAS

Analysis/Analyte	Amount Found	Units
Ionization Detection (GC/FID)		
Extractable TPH	21	Milligrams per Kilogram
Volatile Total Petroleum Hydrocarbon (TPH) in Soil by Gas Chromatography and Mass Selective Detection (GC/MS)		
Purgeable TPH	Less Than 62	Micrograms per Kilogram
Volatile Organic Compounds in Soil at Low Levels by Closed-System Purge-and-Trap GC/MS.		
Acetone	93	Micrograms per Kilogram
Benzene	Less Than 5.2	Micrograms per Kilogram
Bromodichloromethane	Less Than 5.2	Micrograms per Kilogram
Bromoform	Less Than 5.2	Micrograms per Kilogram
Bromomethane	Less Than 5.2	Micrograms per Kilogram
2-Butanone	6.8	Micrograms per Kilogram
Carbon Disulfide	Less Than 5.2	Micrograms per Kilogram
Carbon Tetrachloride	Less Than 5.2	Micrograms per Kilogram
Chlorobenzene	Less Than 5.2	Micrograms per Kilogram
Chloroethane	Less Than 5.2	Micrograms per Kilogram
Chloroform	Less Than 5.2	Micrograms per Kilogram
Chloromethane	Less Than 5.2	Micrograms per Kilogram
Cyclohexane	Less Than 5.2	Micrograms per Kilogram
1,2-Dibromo-3-Chloropropane	Less Than 5.2	Micrograms per Kilogram
Dibromochloromethane	Less Than 5.2	Micrograms per Kilogram
1,2-Dibromoethane	Less Than 5.2	Micrograms per Kilogram
1,2-Dichlorobenzene	Less Than 5.2	Micrograms per Kilogram
1,3-Dichlorobenzene	Less Than 5.2	Micrograms per Kilogram
1,4-Dichlorobenzene	Less Than 5.2	Micrograms per Kilogram
Dichlorodifluoromethane	Less Than 5.2	Micrograms per Kilogram
1,1-Dichloroethane	Less Than 5.2	Micrograms per Kilogram
1,2-Dichloroethane	Less Than 5.2	Micrograms per Kilogram
1,1-Dichloroethene	Less Than 5.2	Micrograms per Kilogram
cis-1,2-Dichloroethene	Less Than 5.2	Micrograms per Kilogram
trans-1,2-Dichloroethene	Less Than 5.2	Micrograms per Kilogram
1,2-Dichloropropane	Less Than 5.2	Micrograms per Kilogram
cis-1,3-Dichloropropene	Less Than 5.2	Micrograms per Kilogram
trans-1,3-Dichloropropene	Less Than 5.2	Micrograms per Kilogram
Ethyl Benzene	Less Than 5.2	Micrograms per Kilogram

Sample: 3047-5
Project ID: RKOTTEXNAS

Analysis/Analyte	Amount Found	Units
2-Hexanone	Less Than 5.2	Micrograms per Kilogram
Isopropylbenzene	Less Than 5.2	Micrograms per Kilogram
Methyl Acetate	Less Than 5.2	Micrograms per Kilogram
Methyl tert-butyl ether	Less Than 10	Micrograms per Kilogram
Methylcyclohexane	Less Than 5.2	Micrograms per Kilogram
Methylene Chloride	Less Than 5.2	Micrograms per Kilogram
4-Methyl-2-Pentanone	Less Than 5.2	Micrograms per Kilogram
Naphthalene	Less Than 10	Micrograms per Kilogram
Styrene	Less Than 5.2	Micrograms per Kilogram
1,1,2,2-Tetrachloroethane	Less Than 5.2	Micrograms per Kilogram
Tetrachloroethene	Less Than 5.2	Micrograms per Kilogram
Toluene	Less Than 5.2	Micrograms per Kilogram
1,2,3-Trichlorobenzene	Less Than 5.2	Micrograms per Kilogram
1,2,4-Trichlorobenzene	Less Than 5.2	Micrograms per Kilogram
1,1,1-Trichloroethane	Less Than 5.2	Micrograms per Kilogram
1,1,2-Trichloroethane	Less Than 5.2	Micrograms per Kilogram
Trichloroethene	Less Than 5.2	Micrograms per Kilogram
Trichlorofluoromethane	Less Than 5.2	Micrograms per Kilogram
1,1,2-Trichlorotrifluoroethane	Less Than 5.2	Micrograms per Kilogram
Vinyl Chloride	Less Than 5.2	Micrograms per Kilogram
m and/or p-Xylene	Less Than 5.2	Micrograms per Kilogram
o-Xylene	Less Than 5.2	Micrograms per Kilogram

United States Environmental Protection Agency
Region 7
901 N. 5th Street
Kansas City, Kansas 66101

08/03/2006

Results of Sample Analysis

Sample: 3047-6
Project ID: RKOTTEXNAS

These are the results from the analysis of solid sample number 3047-6. This sample was collected on 06/13/2006 at the location described as: Soil sample (SB-5, 0.5-2'). If you have any questions about these results, contact Ron King at the above address or by calling 913-551-7568. Correspondence should refer to sample number 3047-6 for project: RKOTTEXNAS - Ottumwa (EX) NAS - PA sampling.

Analysis/Analyte	Amount Found	Units
Explosives in Soil by Gas Chromatography with Electron Capture Detection (GC/ECD)		
2-Amino-4,6-dinitrotoluene	Less Than 64	Micrograms per Kilogram
4-Amino-2,6-dinitrotoluene	Less Than 107	Micrograms per Kilogram
3,5-Dinitroaniline	Less Than 500	Micrograms per Kilogram
1,3-Dinitrobenzene	Less Than 69	Micrograms per Kilogram
2,4-Dinitrotoluene	Less Than 146	Micrograms per Kilogram
2,6-Dinitrotoluene	Less Than 199	Micrograms per Kilogram
Hexahydro-1,3,5-trinitro-1,3,5-triazine	Less Than 102	Micrograms per Kilogram
Nitrobenzene	Less Than 42	Micrograms per Kilogram
Nitroglycerine	Less Than 500	Micrograms per Kilogram
2-Nitrotoluene	Less Than 102	Micrograms per Kilogram
3-Nitrotoluene	Less Than 89	Micrograms per Kilogram
4-Nitrotoluene	Less Than 162	Micrograms per Kilogram
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	Less Than 394	Micrograms per Kilogram
Pentaerythritoltetranitrate	Less Than 545	Micrograms per Kilogram
1,3,5-Trinitrobenzene	Less Than 92	Micrograms per Kilogram
2,4,6-Trinitrophenylmethylnitramine	Less Than 134	Micrograms per Kilogram
2,4,6-Trinitrotoluene	Less Than 100	Micrograms per Kilogram
Mercury in Soil or Sediment		
Mercury	0.029	Milligrams per Kilogram
Metals in Soil by Inductively Coupled Argon Plasma (ICP)		
Aluminum	12800	Milligrams per Kilogram
Antimony	Less Than 2	Milligrams per Kilogram
Arsenic	5.84	Milligrams per Kilogram

Sample: 3047-6
Project ID: RKOTTEXNAS

Analysis/Analyte	Amount Found	Units
Barium	217	Milligrams per Kilogram
Beryllium	Less Than 1	Milligrams per Kilogram
Cadmium	Less Than 1	Milligrams per Kilogram
Calcium	4040	Milligrams per Kilogram
Chromium	14.4	Milligrams per Kilogram
Cobalt	8.53	Milligrams per Kilogram
Copper	12.6	Milligrams per Kilogram
Iron	16800	Milligrams per Kilogram
Lead	17.8	Milligrams per Kilogram
Magnesium	2720	Milligrams per Kilogram
Manganese	709	Milligrams per Kilogram
Molybdenum	Less Than 2	Milligrams per Kilogram
Nickel	13.4	Milligrams per Kilogram
Potassium	Approximately 1120	Milligrams per Kilogram
Selenium	Less Than 10	Milligrams per Kilogram
Silver	Less Than 2	Milligrams per Kilogram
Sodium	73.9	Milligrams per Kilogram
Thallium	Less Than 10	Milligrams per Kilogram
Vanadium	34.4	Milligrams per Kilogram
Zinc	37.2	Milligrams per Kilogram

Polychlorinated Biphenyls (PCBs) in Soil by Gas Chromotography and Electron Capture Detection (GC/EC)

Aroclor 1016	Less Than 22	Micrograms per Kilogram
Aroclor 1221	Less Than 22	Micrograms per Kilogram
Aroclor 1232	Less Than 22	Micrograms per Kilogram
Aroclor 1242	Less Than 22	Micrograms per Kilogram
Aroclor 1248	Less Than 22	Micrograms per Kilogram
Aroclor 1254	Less Than 11	Micrograms per Kilogram
Aroclor 1260	Less Than 11	Micrograms per Kilogram

Percent Solid

Solids, percent	81.9	Percent

Perchlorate in Soil by Ion Chromatography (IC)

Perchlorate	Less Than 0.020	Milligrams per Kilogram

Semi-volatile Total Petroleum Hydrocarbon (TPH) in Soil by Gas Chromatography and Flame

Sample: 3047-6
Project ID: RKOTTEXNAS

Analysis/Analyte	Amount Found	Units
Ionization Detection (GC/FID)		
Extractable TPH	37	Milligrams per Kilogram
Volatile Total Petroleum Hydrocarbon (TPH) in Soil by Gas Chromatography and Mass Selective Detection (GC/MS)		
Purgeable TPH	Less Than 61	Micrograms per Kilogram
Volatile Organic Compounds in Soil at Low Levels by Closed-System Purge-and-Trap GC/MS.		
Acetone	85	Micrograms per Kilogram
Benzene	Less Than 5.6	Micrograms per Kilogram
Bromodichloromethane	Less Than 5.6	Micrograms per Kilogram
Bromoform	Less Than 5.6	Micrograms per Kilogram
Bromomethane	Less Than 5.6	Micrograms per Kilogram
2-Butanone	Less Than 5.6	Micrograms per Kilogram
Carbon Disulfide	Less Than 5.6	Micrograms per Kilogram
Carbon Tetrachloride	Less Than 5.6	Micrograms per Kilogram
Chlorobenzene	Less Than 5.6	Micrograms per Kilogram
Chloroethane	Less Than 5.6	Micrograms per Kilogram
Chloroform	Less Than 5.6	Micrograms per Kilogram
Chloromethane	Less Than 5.6	Micrograms per Kilogram
Cyclohexane	Less Than 5.6	Micrograms per Kilogram
1,2-Dibromo-3-Chloropropane	Less Than 5.6	Micrograms per Kilogram
Dibromochloromethane	Less Than 5.6	Micrograms per Kilogram
1,2-Dibromoethane	Less Than 5.6	Micrograms per Kilogram
1,2-Dichlorobenzene	Less Than 5.6	Micrograms per Kilogram
1,3-Dichlorobenzene	Less Than 5.6	Micrograms per Kilogram
1,4-Dichlorobenzene	Less Than 5.6	Micrograms per Kilogram
Dichlorodifluoromethane	Less Than 5.6	Micrograms per Kilogram
1,1-Dichloroethane	Less Than 5.6	Micrograms per Kilogram
1,2-Dichloroethane	Less Than 5.6	Micrograms per Kilogram
1,1-Dichloroethene	Less Than 5.6	Micrograms per Kilogram
cis-1,2-Dichloroethene	Less Than 5.6	Micrograms per Kilogram
trans-1,2-Dichloroethene	Less Than 5.6	Micrograms per Kilogram
1,2-Dichloropropane	Less Than 5.6	Micrograms per Kilogram
cis-1,3-Dichloropropene	Less Than 5.6	Micrograms per Kilogram
trans-1,3-Dichloropropene	Less Than 5.6	Micrograms per Kilogram
Ethyl Benzene	Less Than 5.6	Micrograms per Kilogram

Sample: 3047-6
Project ID: RKOTTEXNAS

Analysis/Analyte	Amount Found	Units
2-Hexanone	Less Than 5.6	Micrograms per Kilogram
Isopropylbenzene	Less Than 5.6	Micrograms per Kilogram
Methyl Acetate	Less Than 5.6	Micrograms per Kilogram
Methyl tert-butyl ether	Less Than 11	Micrograms per Kilogram
Methylcyclohexane	Less Than 5.6	Micrograms per Kilogram
Methylene Chloride	Less Than 5.6	Micrograms per Kilogram
4-Methyl-2-Pentanone	Less Than 5.6	Micrograms per Kilogram
Naphthalene	Less Than 11	Micrograms per Kilogram
Styrene	Less Than 5.6	Micrograms per Kilogram
1,1,2,2-Tetrachloroethane	Less Than 5.6	Micrograms per Kilogram
Tetrachloroethene	Less Than 5.6	Micrograms per Kilogram
Toluene	Less Than 5.6	Micrograms per Kilogram
1,2,3-Trichlorobenzene	Less Than 5.6	Micrograms per Kilogram
1,2,4-Trichlorobenzene	Less Than 5.6	Micrograms per Kilogram
1,1,1-Trichloroethane	Less Than 5.6	Micrograms per Kilogram
1,1,2-Trichloroethane	Less Than 5.6	Micrograms per Kilogram
Trichloroethene	Less Than 5.6	Micrograms per Kilogram
Trichlorofluoromethane	Less Than 5.6	Micrograms per Kilogram
1,1,2-Trichlorotrifluoroethane	Less Than 5.6	Micrograms per Kilogram
Vinyl Chloride	Less Than 5.6	Micrograms per Kilogram
m and/or p-Xylene	Less Than 5.6	Micrograms per Kilogram
o-Xylene	Less Than 5.6	Micrograms per Kilogram

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 3047 **Sample Number:** 4 **QC Code:** __ **Matrix:** Solid **Tag ID:** 3047-4-__

Project ID: RKOTTEXNAS **Project Manager:** Ron King
Project Desc: Ottumwa (EX) NAS - PA sampling
City: Ottumwa **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: Soil sample

External Sample Number: SB-3

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/12/06 18:25
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
2 - 40mL VOA vial (preserved/tared)	4 Deg C, H2O + sodium bisulfate (in vial)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180	Days	1 Metals in Solids by ICP
1 - 8 oz glass	4 Deg C	28	Days	1 Perchlorate in Soil by IC
1 - 8 oz glass	4 Deg C	14	Days	1 PCBs in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
1 - 8 oz glass	4 Deg C	14	Days	1 Explosives in Soil by GC/ECD
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments: OPID Northend ammo/pyro/rifle range
(N/A)

~~City of Ottumwa - airport~~

Indian Hills Community College
Keith Sasseen
5252 Grandview Bldg 1
Ottumwa, IA 52501

Sample Collected By: JM

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 3047 **Sample Number:** 5 **QC Code:** __ **Matrix:** Solid **Tag ID:** 3047-5-__

Project ID: RKOTTEXNAS **Project Manager:** Ron King
Project Desc: Ottumwa (EX) NAS - PA sampling
City: Ottumwa **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: Soil sample

External Sample Number: SB-4 (0.5-2.0')

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/13/06 0750

Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
2 - 40mL VOA vial	4 Deg C	14 Days	1 TPH Volatiles in Soil by GC/MS
2 - 40mL VOA vial (preserved/tared)	4 Deg C, H2O + sodium bisulfate (in vial)	14 Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180 Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180 Days	1 Metals in Solids by ICP
1 - 8 oz glass	4 Deg C	28 Days	1 Perchlorate in Soil by IC
1 - 8 oz glass	4 Deg C	14 Days	1 PCBs in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14 Days	1 TPH Semi-Volatile in Soil by GC/FID
1 - 8 oz glass	4 Deg C	14 Days	1 Explosives in Soil by GC/ECD
0 -	4 Deg C	0 Days	1 Percent Solid

Sample Comments: @ PID hand dug
(N/A)
Indian Hills Community College
Keith Sasseen
5252 Grandview, Bldg. 1
Ottumwa IA 52501

Sample Collected By: JM

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 3047 **Sample Number:** 6 **QC Code:** __ **Matrix:** Solid **Tag ID:** 3047-6-__

Project ID: RKOTTEXNAS **Project Manager:** Ron King
Project Desc: Ottumwa (EX) NAS - PA sampling
City: Ottumwa **State:** Iowa
Program: Superfund
Site Name: Multi-Site - General **Site ID:** 07ZZ **Site OU:** 00

Location Desc: Soil sample

External Sample Number: SB-5 (0.5-2')

Expected Conc: (or Circle One: (Low) Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 6/13/__ 0810
Longitude: ___ ___ ___ **End:** __/__/__ __:__

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
2 - 40mL VOA vial	4 Deg C	14	Days	1 TPH Volatiles in Soil by GC/MS
2 - 40mL VOA vial (preserved/tared)	4 Deg C, H2O + sodium bisulfate (in vial)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	180	Days	1 Mercury in Soil or Sediment
1 - 8 oz glass	4 Deg C	180	Days	1 Metals in Solids by ICP
1 - 8 oz glass	4 Deg C	28	Days	1 Perchlorate in Soil by IC
1 - 8 oz glass	4 Deg C	14	Days	1 PCBs in Soil by GC/EC
1 - 8 oz glass	4 Deg C	14	Days	1 TPH Semi-Volatile in Soil by GC/FID
1 - 8 oz glass	4 Deg C	14	Days	1 Explosives in Soil by GC/ECD
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:
(N/A)
Hand Dug OPID
Indian Hills Comm. College
Keith Sasseen
5252 Grandview, Bldg. 1
Ottumwa, IA 52501

Sample Collected By: JM