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TECHNICAL MEMORANDUM OLD GUN TUB STORAGE LOT INVESTIGATION SOLID WASTE MANAGEMENT UNIT 34 (SWMU 34) NSA CRANE IN
9/1/2011
TETRA TECH

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Comprehensive Long-term Environmental Action Navy

CONTRACT NUMBER N62470-08-D-1001

TECHNICAL MEMORANDUM:
OLD GUN TUB STORAGE LOT INVESTIGATION
NSA CRANE SWMU 34

Naval Support Activity Crane
Crane, Indiana

Contract Task Order F276

September 2011

NAVFAC
Naval Facilities Engineering Command
Midwest
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Building 1A, Code EV
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TETRA TECH NUS, Inc.

TECHNICAL MEMORANDUM

PITT-09-11-067

DATE: September 26, 2011

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Project File – CTO F276

SUBJECT: NSA Crane SWMU 34 – Old Gun Tub Storage Lot Investigation

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1.0 Background

The Old Gun Tub Storage Lot (OGTSL) is a relatively open, level area in the north-central portion of NSA Crane (Figure 1). It is approximately 4 acres in size and is covered by gravel and bordered by woods on three sides (Figure 2). The site obtained its name because it was formerly used for the outdoor storage of gun tubs used to house large caliber guns on Navy ships. Some of the gun tubs contained electrical components. According to the NSA Crane Historian, storage during the 1950s and early 1960s consisted of combat ready materials (e.g., vehicles, bomb trailers, weather-proof containers of various hardware, light and heavy gun mounts, etc.). Gun tub storage began during the Vietnam era of the late 1960s. Storage ceased in 2001, when the gun tubs were dismantled and sold for scrap metal.

There are no above ground structures located at the OGTSL. The closest structures are Buildings 3032 and 3226, which are located approximately 100 feet northwest and 175 feet southwest of eastern boundary of the OGTSL, respectively. An active dog kennel exists at Building 3032.

Contaminants potentially associated with the OGTSL are chemicals commonly associated with storage of metal objects covered with paint from the World War II and more recent eras. Specifically, these are various industrial metals, lead-based paints, and perhaps semivolatile organic compounds (SVOCs) and

weathering of the gun tubs and possibly other industrial objects. Being an industrial area, the potential for release of other chemicals exists but is not considered to be a significant concern because of the limited operational focus of this site.

2.0 Previous Investigations

Twelve surface soil samples, including a field duplicate sample, were collected in July 2002 by NSA Crane personnel. Soil sampling locations (not shown) were distributed across the OGTSL. The samples were analyzed for potentially site related SVOCs, PCBs, cadmium, chromium, and lead. Sporadic detections of SVOCs at trace levels were observed; principally bis(2-ethylhexyl)phthalate and fluoranthene. No PCBs were detected but cadmium, chromium, and lead were detected. No planning document was prepared for the field effort, and the data were not validated; therefore, it is not known whether the data are accurate representations of site conditions. Chemical analysis detection limits were also higher than those currently achievable, which encumbered the ability to compare the 2002 results to current environmental screening criteria.

In 2005 an Environmental Indicator study was performed for several sites, including the OGTSL (Tetra Tech, 2005). The purpose of the Environmental Indicator study was to determine whether contaminants were present at concentrations which could pose health risks to workers.

Five surface soil samples (OGTSLSS001 through OGTSLSS005) were collected from the OGTSL in 2005 as part of the Environmental Investigation study. The sample locations are shown on Figure 3. These samples were analyzed for the chemicals shown in Table 1.

The proximity of the active dog kennel to the OGTSL creates a concern over potential human and canine exposure to OGSTL-related chemical contaminants. In particular, the concern is associated with exposure of dogs and their human handlers to PAHs, PCBs, and metals, which could be site-related contaminants.

Exposure of dogs (terrestrial vertebrates) to contaminated surface soil could occur via direct contact, incidental ingestion of the soil, and ingestion of small mammals and plants. However, ingestion of small mammals and plants is assumed not to be a significant exposure pathway because the dogs are routinely kept in closed pens and are cared for/fed by facility personnel. The human receptors of immediate concern are typical NSA Crane occupational worker exposed to surface soils as a result of daily work activities, a construction worker engaged in a construction project at the OGTSL, and personnel involved with maintaining the OGTSL grounds. However, a change of land use to residential use could result in exposure of more sensitive human receptors such as adult or child residents. The exposure to surface

soils for all of these human receptors could occur through dermal contact, incidental ingestion, or inhalation of soil particles suspended as dust in the air. A trespasser could be exposed in the same ways.

Canine exposure is currently the greatest concern because of the close proximity of the kennel and because dogs have more intimate contact with surface soil than do humans.

3.0 Field Investigation

Eight surface soil samples (OGTSLSS06 through OGTSLSS013) were collected from locations within the OGTSL on June 27, 2011. Figure 3 also shows the locations of these eight soil samples. Appendix A contains the field documentation. As described in the Tier II Sampling and Analyses Plan (SAP) for the site (Tetra Tech, 2011), the site was divided into eight quadrants. Per the SAP, one soil sample was collected from each quadrant at the location deemed to be the most likely impacted based on topography or visual evidence. All eight samples were analyzed for polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and metals.

4.0 Data Screening and Evaluation

The soil data was screened against both ecological and human health risk criteria. In addition, the metals data was screened against the NSA Crane Soil Type 3, 95% upper tolerance limit (UTL) background soil values (Tetra Tech, 2001). Soil Type 3 was used because of the OGTSL location within NSA Crane (i.e., depositional environment). The attached tables provide the soil data for both the 2005 and 2011 samples screened against IDEM Residential and Industrial Human Health and Background (metals only) (Table 1) and site-specific Ecological and Background (Table 2) criteria. Appendix B presents the data validation reports.

Site-specific ecological surface soil screening levels were developed for the site, since the screening levels that are typically used to evaluate ecological risks are not appropriate for this site. Most of the USEPA Region 5 Ecological Screening Levels (ESLs) for soil are based on risks to a shrew. Some of the screening levels, though, are based on risks to other receptors such as plants, soil invertebrates, or voles. For obvious reasons, screening values based on risks to plants and soil invertebrates are not appropriate to evaluate risks to dogs training at the site because they are very different receptors. Although shrews, voles, and dogs are all mammals, their exposure to chemicals in the soil will be very different from each other. The ESLs for shrews are based on them consuming earthworms, and other soil invertebrates, and incidentally ingesting soil. The ESLs for voles are based on them consuming plants and seeds, and incidentally ingesting soil. Dogs, especially those in a controlled training environment, would not be

expected to consume invertebrates or plants, and may only consume incidental amounts of soil. These dogs are also not expected to dig holes, bury food, etc., so their soil exposure would be low.

Table 3 presents the calculation of the site-specific surface soil screening levels that are protective for dogs from direct contact toxicity in the training area. Table 4 presents the source of the Toxicity Reference Values (TRVs), which were used to calculate the site-specific ecological soil screening levels. Note that the screening levels are not necessarily protective of carcinogenic risks; there are no established standard methods to calculate cancer risks for dogs. Because the specific weight and ingestion rate for the dogs using the training facility is not known, the body weight and ingestion rate for dogs as listed in Sample et al., (1996) was used (i.e., 12.7 kg, or approximately 28 pounds). The only exposure scenario that was included in the development of the screening levels was incidental ingestion of soil, and it was conservatively assumed that the dogs spend all of their time at the site (which in actuality is not the case). The incidental ingestion rate for a red fox from Beyer et al., (1994) was used as a surrogate for the dog (i.e., 0.0084 kg/day). The soil screening levels were then developed by back-calculating a chemical concentration in soil that would not result in an ecological effects quotient of greater than 1.0. The screening levels were developed based on both the no observed adverse effects level (NOAEL) and the lowest observed adverse effects level (LOAEL), but only the NOAEL-based values are used for screening purposes to ensure that the screening levels are conservative. The LOAEL-based values are just presented for information purposes.

PCBs

The only PCB detected above the laboratory detection limits in any of the samples was Aroclor-1260. It was detected at concentrations ranging from 35.7 to 390 µg/kg. The highest PCB concentrations were detected in samples OGTSLSS013 (334 µg/kg) and OGTSLSS001 (390 µg/kg). Both samples are located in the western portion of the site.

None of the concentrations were above either IDEM Residential (1,800 µg/kg) or Industrial (5,300 µg/kg) Human Health criteria.

In addition, no concentrations exceeded the site-specific mammalian (dog) ecological screening criteria established for PCBs (102,468 µg/kg).

Metals

Metals were present at elevated concentrations above Human Health (Residential) and background screening criteria in two of the eight 2011 samples (OGTSLSS007 [Lead] and OGTSLSS009 [Arsenic]),

and two of five 2005 samples (OGTSLSS001 [Cadmium and Lead] and OGTSLSS002 [Lead]). No metals exhibited concentrations above the Industrial Human Health criteria.

Only one metal concentration exceeded the ecological and background screening criteria in the 2005 soil samples. Aluminum was detected at an elevated concentration in sample OGTSLSS002. No metals concentration exceeded the ecological and background screening criteria in the 2011 soil samples.

PAHs

No PAH concentrations exceeded the IDEM Residential or Industrial Human Health or ecological screening criteria.

5.0 Conclusions

Human Health

Based on the screening evaluation, only three metals (i.e., arsenic, cadmium and lead) exhibited concentrations above IDEM Residential Human Health and background screening criteria. No metal concentrations exceeded the Industrial Human Health screening criteria.

Arsenic was detected at a concentration of 12.9 mg/kg in sample OGTSLSS09, which is slightly higher than the background value of 11.83 mg/kg. The average concentration of all 13 samples for arsenic is 7.02 mg/kg, which is well below the background value.

Cadmium was detected at a concentration of 12.2 mg/kg in sample OGTSLSS02, which is only slightly higher than the IDEM Residential Human Health criteria of 12 mg/kg. The average concentration of all 13 samples for cadmium is 4.17 mg/kg, which is well below the IDEM Residential Human Health criteria.

Lead was detected in three samples at elevated concentrations ranging from 467 mg/kg to 602 mg/kg, which are higher than the IDEM Residential Human Health criteria of 400 mg/kg. The average concentration of all 13 samples for lead is approximately 196 mg/kg, which is well below the IDEM Residential Human Health criteria.

No PAH concentrations exceeded the IDEM Residential or Industrial Human Health screening criteria.

Aroclor-1260 was the only PCB detected above laboratory detection limits in any of the samples. None of the Aroclor-1260 concentrations were above either IDEM Residential (1,800 µg/kg) or Industrial

(5,300 µg/kg) Human Health screening criteria. In addition, none of the PCB concentrations were above 1,000 µg/kg, which is the value for determination of restricted land use.

Ecological

The only metal which exceeded both the site-specific ecological screening criteria for dogs, and the background concentration, was aluminum. It was detected at a concentration of 24,200 mg/kg in sample OGTSLSS02, which is slightly higher than the background value of 19,900 mg/kg. The average concentration of all 13 samples for aluminum is 9,543 mg/kg, which is well below the background value.

No PAH concentrations exceeded the site-specific ecological screening criteria.

No samples exhibited PCB concentrations above the site-specific ecological screening criteria of 102,468 µg/kg. The highest concentrations were detected in samples OGTSLSS013 (334 µg/kg) and OGTSLSS001 (390 µg/kg), both located in the western portion of the site.

References

Tetra Tech, 2001; Basewide Soil Investigation Report, Naval Surface Warfare Center Crane, Crane, Indiana, Tetra Tech NUS, Inc., January 2001.

Tetra Tech, 2005; Environmental Indicator Report, Naval Surface Warfare Center Crane, Crane, Indiana, Tetra Tech NUS, Inc., January 2005.

Tetra Tech, 2011; Sampling and Analysis Plan, Soil Characterization Investigation for The Old Gun Storage Lot and The Spent Ammunition Casings Dump, Naval Support Activity Crane, Crane, Indiana, Tetra Tech NUS, Inc., June 2011.

Tables

Table 1
Old Gun Tub Storage Lot Soil Data
Human Health Screening
NSA Crane
Crane, Indiana

LOCATION	IDEM Residential	IDEM Industrial	BACKGROUND	OGSTLSB001	OGSTLSB002	OGTSLSB003			OGSTLSB004	OGSTLSB005	OGSTLSB006	OGSTLSB007
SAMPLE ID				OGTSLSS0010002	OGTSLSS0020002	OGTSLSS0030002	OGTSLSS0030002-AVG	OGTSLSS0030002-D	OGTSLSS0040002	OGTSLSS0050002	OGTSLSS0060002	OGTSLSS0070002
AMPLE DATE				20050124	20050124	20050124	20050124	20050124	20050124	20050124	20110627	20110627
AMPLE CODE				NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX				SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH				0	0	0	0	0	0	0	0	0
BOTTOM DEPTH				2	2	2	2	2	2	2	2	2
METALS (MG/KG)												
ALUMINUM	NC	NC	19900.00	587	24200	19100	19100	NA	7760	2780	1960	11900
ANTIMONY	140	620	6.87	28 J	6.9 J	0.65 U	0.65 U	NA	0.59 U	3.6 J	5.14	0.52 J
ARSENIC	3.9	20	11.83	5.6 J	8.1 J	9.2 J	9.2 J	NA	9.9 J	4.9 J	1.22 J	9.19
BARIUM	63000	230000	210.70	15.1 J	43 J	62.7 J	62.7 J	NA	60.8 J	26.8 J	68.5	92.4
BERYLLIUM	680	2900	0.00	0.07 U	0.32 J	0.53 J	0.53 J	NA	0.5 J	0.15 U	NA	NA
CADMIUM	12	990	6.05	12.2 J	3.6 J	0.46 J	0.46 J	NA	0.34 U	3.1 J	5.8	1.2
CALCIUM	NC	NC	0.00	339000 J	82900 J	47000 J	47000 J	NA	38700 J	182000 J	NA	NA
CHROMIUM	520000	1000000	28.72	573 J	34.9 J	12.4 J	12.4 J	NA	13.8 J	32.8 J	14.1	41.3
COBALT	NC	NC	32.36	11.1 J	4.9 J	6.1 J	6.1 J	NA	6 J	2.8 J	2.3 J	10.9
COPPER	14000	62000	17.61	99.5 J	76.6 J	13.5 J	13.5 J	NA	11.3 J	17.5 J	50.8	19.3
IRON	NC	NC	37400.00	29500 J	31400 J	20800 J	20800 J	NA	17900 J	11100 J	4420 J	19700 J
LEAD	400	1300	27.02	543 J	467 J	22 J	22 J	NA	14.7 J	74.9 J	42.5	602
MAGNESIUM	NC	NC	0.00	16400 J	16800 J	6080 J	6080 J	NA	3690 J	11000 J	NA	NA
MANGANESE	NC	NC	5700.00	765 J	209 J	562 J	562 J	NA	164 J	128 J	197	891
MERCURY	NC	NC	0.00	0.038 J	0.026 J	0.007 U	0.007 U	NA	0.009 J	0.018 J	NA	NA
NICKEL	6900	31000	22.10	442 J	23.8 J	10.4 J	10.4 J	NA	9.8 J	12.5 J	10.9	12.7
POTASSIUM	NC	NC	0.00	873 J	974 J	1300 J	1300 J	NA	1020 J	997 J	NA	NA
SELENIUM	1700	7800	0.81	0.22 J	0.36 J	0.43 J	0.43 J	NA	0.36 J	0.32 J	1.91 U	0.338 UJ
SILVER	1700	7800	0.00	0.07 U	0.12 U	0.051 U	0.051 U	NA	0.044 U	0.042 U	NA	NA
SODIUM	NC	NC	0.00	178 J	178 J	76.2 U	76.2 U	NA	68.4 U	123 U	NA	NA
THALLIUM	24	110	0.00	0.03 U	0.3 U	0.28 U	0.28 U	NA	0.29 U	0.14 U	NA	NA
TIN	NC	NC	0.00	3.8 J	6 J	0.4 U	0.4 U	NA	0.29 U	0.72 U	NA	NA
VANADIUM	NC	NC	51.21	8.3 J	22.9 J	22.7 J	22.7 J	NA	23.5 J	11.4 J	6.78	27.8
ZINC	100000	470000	65.57	1650 J	279 J	53.9 J	53.9 J	NA	64.2 J	706 J	270	158
PESTICIDES/PCBS (UG/KG)												
AROCLOR-1016	1800	5300	0.00	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ
AROCLOR-1221	1800	5300	0.00	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ
AROCLOR-1232	1800	5300	0.00	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ
AROCLOR-1242	1800	5300	0.00	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ
AROCLOR-1248	1800	5300	0.00	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ
AROCLOR-1254	1800	5300	0.00	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ
AROCLOR-1260	1800	5300	0.00	390	130	11.6 U	11.3 U	11 U	10.6 U	110	40.8	90.6 J
AROCLOR-1262	1800	5300	0.00	NA	NA	NA	NA	NA	NA	NA	12.2 U	11.2 UJ
AROCLOR-1268	1800	5300	0.00	NA	NA	NA	NA	NA	NA	NA	12.2 U	11.2 UJ
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)												
1-METHYLNAPHTHALENE	NC	NC	0.00	NA	NA	NA	NA	NA	NA	NA	3.54 J	3.02 J
2-METHYLNAPHTHALENE	630000	1600000	0.00	NA	NA	NA	NA	NA	NA	NA	4.01 J	2.32 J
ACENAPHTHENE	9500000	24000000	0.00	NA	NA	NA	NA	NA	NA	NA	6.56 J	3.58 J
ACENAPHTHYLENE	1100000	2800000	0.00	NA	NA	NA	NA	NA	NA	NA	8.47 J	4.19 J
ANTHRACENE	47000000	120000000	0.00	NA	NA	NA	NA	NA	NA	NA	9.78	4.54 J
BENZO(A)ANTHRACENE	5000	15000	0.00	NA	NA	NA	NA	NA	NA	NA	41.5 J	7.72 J
BENZO(A)PYRENE	500	1500	0.00	NA	NA	NA	NA	NA	NA	NA	65.1	12.7 J
BENZO(B)FLUORANTHENE	5000	15000	0.00	NA	NA	NA	NA	NA	NA	NA	127	28.2 J
BENZO(G,H,I)PERYLENE	NC	NC	0.00	NA	NA	NA	NA	NA	NA	NA	65.9	13.4 J
BENZO(K)FLUORANTHENE	50000	150000	0.00	NA	NA	NA	NA	NA	NA	NA	51.8	12.8 J
CHRYSENE	500000	1500000	0.00	NA	NA	NA	NA	NA	NA	NA	67.2 J	14.2 J
DIBENZO(A,H)ANTHRACENE	500	1500	0.00	NA	NA	NA	NA	NA	NA	NA	4.83 U	4.5 U
FLUORANTHENE	6300000	16000000	0.00	NA	NA	NA	NA	NA	NA	NA	139	32.6 J
FLUORENE	6300000	16000000	0.00	NA	NA	NA	NA	NA	NA	NA	7.25 J	3.2 J
INDENO(1,2,3-CD)PYRENE	5000	15000	0.00	NA	NA	NA	NA	NA	NA	NA	52.5	11.2 J
NAPHTHALENE	3200000	8000000	0.00	NA	NA	NA	NA	NA	NA	NA	5.96 J	3.51 J
PHENANTHRENE	470000	1200000	0.00	NA	NA	NA	NA	NA	NA	NA	48	14.9 U
PYRENE	4700000	12000000	0.00	NA	NA	NA	NA	NA	NA	NA	122	28.3 J
SEMIVOLATILES (UG/KG)												
1,2,4,5-TETRACHLOROBENZENE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
1,2,4-TRICHLOROBENZENE	1800000	4900000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
1,2-DICHLOROBENZENE	2800000	3900000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
1,3-DICHLOROBENZENE	420000	890000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
1,4-DICHLOROBENZENE	42000	73000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
1,4-DIOXANE	NC	NC	0.00	111 U	122 U	129 U	129 U	NA	118 U	111 U	NA	NA
1,4-NAPHTHOQUINONE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
1,4-PHENYLENEDIAMINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
1-NAPHTHYLAMINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	30000	61000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2,3,4,6-TETRACHLOROPHENOL	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2,4,5-TRICHLOROPHENOL	18000000	49000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2,4,6-TRICHLOROPHENOL	18000	49000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2,4-DICHLOROPHENOL	550000	1500000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2,4-DIMETHYLPHENOL	3700000	9800000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2,4-DINITROPHENOL	370000	980000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2,6-DICHLOROPHENOL	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2-ACETYLAMINOFLUORENE	NC	NC	0.00	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA
CHLORONAPHTHALENE	15000000	39000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
CHLOROPHENOL	360000	580000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2-METHYLNAPHTHALENE	630000	1600000	0.00	3.67 U	4.02 U	4.26 U	4.26 U	NA	3.89 U	3.65 U	NA	NA
2-METHYLPHENOL	7500000	17000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2-NAPHTHYLAMINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2-NITROANILINE	550000	1500000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA

Table 1
Old Gun Tub Storage Lot Soil Data
Human Health Screening
NSA Crane
Crane, Indiana

LOCATION	IDEM Residential	IDEM Industrial	BACKGROUND	OGSTLSB001	OGSTLSB002	OGSTLSB003			OGSTLSB004	OGSTLSB005	OGSTLSB006	OGSTLSB007
SAMPLE ID				OGTSLSS0010002	OGTSLSS0020002	OGTSLSS0030002	OGTSLSS0030002-AVG	OGTSLSS0030002-D	OGTSLSS0040002	OGTSLSS0050002	OGTSLSS0060002	OGTSLSS0070002
AMPLE DATE				20050124	20050124	20050124	20050124	20050124	20050124	20050124	20110627	20110627
AMPLE CODE				NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX				SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH				0	0	0	0	0	0	0	0	0
BOTTOM DEPTH				2	2	2	2	2	2	2	2	2
2-NITROPHENOL	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
2-PICOLINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
3&4-METHYLPHENOL	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
3,3'-DICHLOROBENZIDINE	9500	31000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
3,3'-DIMETHYLBENZIDINE	NC	NC	0.00	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA
3-METHYLCHOLANTHRENE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
3-NITROANILINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
4-AMINOBIPHENYL	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
4-BROMOPHENYL PHENYL ETHER	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
4-CHLORO-3-METHYLPHENOL	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
4-CHLOROANILINE	730000	2000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
4-NITROANILINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
4-NITROPHENOL	NC	NC	0.00	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA
4-NITROQUINOLINE-1-OXIDE	NC	NC	0.00	74.4 UR	81.7 UR	86.5 UR	86.5 UR	NA	78.9 UR	74.2 UR	NA	NA
5-NITRO-O-TOLUIDINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
7,12-DIMETHYLBENZ(A)ANTHRACENE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
A,A-DIMETHYLPHENETHYLAMINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
ACENAPHTHENE	9500000	24000000	0.00	3.67 U	4.02 U	4.26 U	4.26 U	NA	3.89 U	3.65 U	NA	NA
ACENAPHTHYLENE	1100000	2800000	0.00	28	4.02 U	4.26 U	4.26 U	NA	3.89 U	12	NA	NA
ACETOPHENONE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
ANILINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
ANTHRACENE	47000000	120000000	0.00	24	4.02 U	4.26 U	4.26 U	NA	3.89 U	9	NA	NA
ARAMITE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
BENZO(A)ANTHRACENE	5000	15000	0.00	140	18	27	27	NA	3.89 U	67	NA	NA
BENZO(A)PYRENE	500	1500	0.00	140	15	21 J	21 J	NA	3.89 U	67	NA	NA
BENZO(B)FLUORANTHENE	5000	15000	0.00	390	25	30 J	30 J	NA	3.89 U	190	NA	NA
BENZO(G,H,I)PERYLENE	NC	NC	0.00	140	23	13 J	13 J	NA	3.89 U	59	NA	NA
BENZO(K)FLUORANTHENE	50000	150000	0.00	180	21	9 J	9 J	NA	3.89 U	100	NA	NA
BENZYL ALCOHOL	55000000	150000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
BIS(2-CHLOROETHYL)ETHER	1600	3000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
S(2-ETHYLHEXYL)PHTHALATE	300000	980000	0.00	1500 J	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	140 J	NA	NA
JTYL BENZYL PHTHALATE	37000000	98000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
CHLOROBENZILATE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
CHRYSENE	500000	1500000	0.00	260	22	21	21	NA	3.89 U	130	NA	NA
DIALLATE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
DIBENZO(A,H)ANTHRACENE	500	1500	0.00	38	4.02 U	4.26 UJ	4.26 UJ	NA	3.89 U	19	NA	NA
DIBENZOFURAN	370000	980000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
DIETHYL PHTHALATE	150000000	390000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
DIMETHYL PHTHALATE	1000000000	1000000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
DI-N-BUTYL PHTHALATE	18000000	49000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
DI-N-OCTYL PHTHALATE	7300000	20000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
DIPHENYLAMINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
ETHYL METHANE SULFONATE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
FLUORANTHENE	6300000	16000000	0.00	310	35	44	44	NA	3.89 U	210	NA	NA
FLUORENE	6300000	16000000	0.00	3.67 U	4.02 U	4.26 U	4.26 U	NA	3.89 U	3.65 U	NA	NA
HEXACHLOROBENZENE	2700	8600	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
HEXACHLOROBUTADIENE	55000	150000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
HEXACHLOROCYCLOPENTADIENE	1100000	2900000	0.00	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA
HEXACHLOROETHANE	120000	240000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
HEXACHLOROPROPENE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
INDENO(1,2,3-CD)PYRENE	5000	15000	0.00	130	21	10 J	10 J	NA	3.89 U	62	NA	NA
ISODRIN	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
ISOPHORONE	4500000	14000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
ISOSAFROLE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
KEPONE	NC	NC	0.00	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA
METHAPYRILENE	NC	NC	0.00	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA
METHYL METHANE SULFONATE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
NAPHTHALENE	3200000	8000000	0.00	9	4.02 J	4.26 U	4.26 U	NA	3.89 U	4 J	NA	NA
N-NITROSODIETHYLAMINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
N-NITROSODIMETHYLAMINE	NC	NC	0.00	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA
N-NITROSO-DI-N-BUTYLAMINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	610	2000	0.00	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA
N-NITROSODIPHENYLAMINE	870000	2800000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
N-NITROSOMETHYLETHYLAMINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
N-NITROSOMORPHOLINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
N-NITROSOPIPERIDINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
N-NITROSOPYRROLIDINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
O,O,O-TRIETHYL PHOSPHOROTHIOATE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
O-TOLUIDINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
PENTACHLOROBENZENE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
ENTACHLOROETHANE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
ENTACHLORONITROBENZENE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
PHENACETIN	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
PHENANTHRENE	470000	1200000	0.00	41	10	4.26 U	4.26 U	NA	3.89 U	26	NA	NA
PHENOL	44000000	96000000	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
PRONAMIDE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA

Table 1
Old Gun Tub Storage Lot Soil Data
Human Health Screening
NSA Crane
Crane, Indiana

LOCATION	IDEM Residential	IDEM Industrial	BACKGROUND	OGSTLSB001	OGSTLSB002	OGSTLSB003			OGSTLSB004	OGSTLSB005	OGSTLSB006	OGSTLSB007
SAMPLE ID				OGTSLSS0010002	OGTSLSS0020002	OGTSLSS0030002	OGTSLSS0030002-AVG	OGTSLSS0030002-D	OGTSLSS0040002	OGTSLSS0050002	OGTSLSS0060002	OGTSLSS0070002
SAMPLE DATE				20050124	20050124	20050124	20050124	20050124	20050124	20050124	20110627	20110627
SAMPLE CODE				NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX				SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH				0	0	0	0	0	0	0	0	0
BOTTOM DEPTH				2	2	2	2	2	2	2	2	2
PYRENE	4700000	12000000	0.00	310	40	44	44	NA	3.89 U	170	NA	NA
PYRIDINE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
SAFROLE	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA
SOLVENT YELLOW 2	NC	NC	0.00	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA

NC - NO CRITERIA
"0" AS BACKGROUND VALUE = NO CRITERIA
PURPOSE OF "0" VALUE IS FOR CONDITIONAL FORMATTING PURPOSES WHERE NO BACKGROUND VALUE PRESENT
RESULT EXCEEDS IDEM IND/BACKGROUND
RESULT EXCEEDS IDEM RES/BACKGROUND

Table 1
Old Gun Tub Storage Lot Soil Data
Human Health Screening
NSA Crane
Crane, Indiana

LOCATION	IDEM Residential	IDEM Industrial	BACKGROUND	OGSTLSB008	OGSTLSB009	OGSTLSB010	OGSTLSB011	OGSTLSB012	OGSTLSB013
SAMPLE ID				OGTSLSS0080002	OGTSLSS0090002	OGTSLSS0100002	OGTSLSS0110002	OGTSLSS0120002	OGTSLSS0130002
SAMPLE DATE				20110627	20110627	20110627	20110627	20110627	20110627
SAMPLE CODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX				SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SS	SS	SS
TOP DEPTH				0	0	0	0	0	0
BOTTOM DEPTH				2	2	2	2	2	2
METALS (MG/KG)									
ALUMINUM	NC	NC	19900.00	5070	19700	11300	15700	2480	1520
ANTIMONY	140	620	6.87	5.79 U	0.481 U	0.673	0.579 J	2.96 J	26.8
ARSENIC	3.9	20	11.83	5.28 J	12.9	8.26	10	3.45 U	3.21 J
BARIUM	63000	230000	210.70	92.9	84.5	59.8	81.9	25.9	16.3 J
BERYLLIUM	680	2900	0.00	NA	NA	NA	NA	NA	NA
CADMIUM	12	990	6.05	8.42	0.12 U	1.95	4.17	4.66	8.14
CALCIUM	NC	NC	0.00	NA	NA	NA	NA	NA	NA
CHROMIUM	520000	1000000	28.72	25.5	22.1	23	29.8	34.6	63
COBALT	NC	NC	32.36	4.46 J	5.61	3.89	7.98	3.67 J	3.89 J
COPPER	14000	62000	17.61	39.1	18.6	17.7	26.7	46.5	95.9
IRON	NC	NC	37400.00	18600 J	28400 J	17800 J	26000 J	7630 J	18600 J
LEAD	400	1300	27.02	63.2	14.6	60.3	36	231	371
MAGNESIUM	NC	NC	0.00	NA	NA	NA	NA	NA	NA
MANGANESE	NC	NC	5700.00	264	120	120	306	181	184
MERCURY	NC	NC	0.00	NA	NA	NA	NA	NA	NA
NICKEL	6900	31000	22.10	19.7	15.8	12.7	27.3	30	157
POTASSIUM	NC	NC	0.00	NA	NA	NA	NA	NA	NA
SELENIUM	1700	7800	0.81	3.62 U	0.301 UJ	0.29 UJ	0.306 UJ	2.87 U	2.88 U
SILVER	1700	7800	0.00	NA	NA	NA	NA	NA	NA
SODIUM	NC	NC	0.00	NA	NA	NA	NA	NA	NA
THALLIUM	24	110	0.00	NA	NA	NA	NA	NA	NA
TIN	NC	NC	0.00	NA	NA	NA	NA	NA	NA
VANADIUM	NC	NC	51.21	13.9	37.5	26.6	31.9	9.55	9.52
ZINC	100000	470000	65.57	236	55.2	337	161	1040	612
PESTICIDES/PCBS (UG/KG)									
AROCLOR-1016	1800	5300	0.00	11.7 U	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1221	1800	5300	0.00	11.7 U	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1232	1800	5300	0.00	11.7 U	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1242	1800	5300	0.00	11.7 U	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1248	1800	5300	0.00	11.7 U	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1254	1800	5300	0.00	11.7 U	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1260	1800	5300	0.00	102 J	9.69 U	34.3 J	104 J	45	327
AROCLOR-1262	1800	5300	0.00	11.7 U	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1268	1800	5300	0.00	11.7 U	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)									
1-METHYLNAPHTHALENE	NC	NC	0.00	5.42 J	3.7 U	2.24 J	3.87 U	3.67 U	2.84 J
2-METHYLNAPHTHALENE	630000	1600000	0.00	5.44 J	1.99 J	2.07 J	3.87 U	2.99 J	3.73 J
ACENAPHTHENE	9500000	24000000	0.00	22.3	3.02 J	2.84 J	2.48 J	2.99 J	5.4 J
ACENAPHTHYLENE	1100000	2800000	0.00	9.84	3.7 U	26.2	2.07 J	38.7	42.9
ANTHRACENE	47000000	120000000	0.00	47.1	3.7 U	15	3.47 J	27.2	39
BENZO(A)ANTHRACENE	5000	15000	0.00	263 J	3.7 UJ	62 J	5.91 J	169 J	130 J
BENZO(A)PYRENE	500	1500	0.00	356	3.7 U	96.1	7.48 J	185	144
BENZO(B)FLUORANTHENE	5000	15000	0.00	534	2.95 J	267	16.7	430	343
BENZO(G,H,I)PERYLENE	NC	NC	0.00	268	3.7 U	92.2	9.78	172	178
BENZO(K)FLUORANTHENE	50000	150000	0.00	161	2.49 J	95.5	4.05 J	191	100
CHRYSENE	500000	1500000	0.00	346 J	3.7 UJ	180 J	5.54 J	274 J	204 J
DIBENZO(A,H)ANTHRACENE	500	1500	0.00	66.8	3.7 U	19.9	3.87 U	49.5	38.6
FLUORANTHENE	6300000	16000000	0.00	726	3.53 J	300	9.73	392	283
FLUORENE	6300000	16000000	0.00	20.1	3.7 U	3.76 J	2.67 J	3.81 J	5.49 J
INDENO(1,2,3-CD)PYRENE	5000	15000	0.00	252	3.7 U	80.3	7.63 J	167	154
NAPHTHALENE	3200000	8000000	0.00	10.9	3.9 J	6.42 J	3.07 J	6.62 J	10.7
PHENANTHRENE	470000	1200000	0.00	257	7.26 U	43.8	7.76 U	56.5	79
PYRENE	4700000	12000000	0.00	594	2.7 J	251	9.36	345	242
SEMIVOLATILES (UG/KG)									
1,2,4,5-TETRACHLOROBENZENE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	1800000	4900000	0.00	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	2800000	3900000	0.00	NA	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	420000	890000	0.00	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	42000	73000	0.00	NA	NA	NA	NA	NA	NA
1,4-DIOXANE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
1,4-NAPHTHOQUINONE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
1,4-PHENYLENEDIAMINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
1-NAPHTHYLAMINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	30000	61000	0.00	NA	NA	NA	NA	NA	NA
2,3,4,6-TETRACHLOROPHENOL	NC	NC	0.00	NA	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	18000000	49000000	0.00	NA	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	18000	49000	0.00	NA	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	550000	1500000	0.00	NA	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	3700000	9800000	0.00	NA	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	370000	980000	0.00	NA	NA	NA	NA	NA	NA
2,6-DICHLOROPHENOL	NC	NC	0.00	NA	NA	NA	NA	NA	NA
2-ACETYLAMINOFLUORENE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
2-CHLORONAPHTHALENE	15000000	39000000	0.00	NA	NA	NA	NA	NA	NA
2-CHLOROPHENOL	360000	580000	0.00	NA	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	630000	1600000	0.00	NA	NA	NA	NA	NA	NA
2-METHYLPHENOL	7500000	17000000	0.00	NA	NA	NA	NA	NA	NA
2-NAPHTHYLAMINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
2-NITROANILINE	550000	1500000	0.00	NA	NA	NA	NA	NA	NA

Table 1
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Human Health Screening
NSA Crane
Crane, Indiana

LOCATION	IDEM Residential	IDEM Industrial	BACKGROUND	OGSTLSB008	OGSTLSB009	OGSTLSB010	OGSTLSB011	OGSTLSB012	OGSTLSB013
SAMPLE ID				OGTSLSS0080002	OGTSLSS0090002	OGTSLSS0100002	OGTSLSS0110002	OGTSLSS0120002	OGTSLSS0130002
AMPLE DATE				20110627	20110627	20110627	20110627	20110627	20110627
AMPLE CODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX				SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SS	SS	SS
TOP DEPTH				0	0	0	0	0	0
BOTTOM DEPTH				2	2	2	2	2	2
2-NITROPHENOL	NC	NC	0.00	NA	NA	NA	NA	NA	NA
2-PICOLINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
3&4-METHYLPHENOL	NC	NC	0.00	NA	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	9500	31000	0.00	NA	NA	NA	NA	NA	NA
3,3'-DIMETHYLBENZIDINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
3-METHYLCHOLANTHRENE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
3-NITROANILINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NC	NC	0.00	NA	NA	NA	NA	NA	NA
4-AMINOBIPHENYL	NC	NC	0.00	NA	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NC	NC	0.00	NA	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NC	NC	0.00	NA	NA	NA	NA	NA	NA
4-CHLOROANILINE	730000	2000000	0.00	NA	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NC	NC	0.00	NA	NA	NA	NA	NA	NA
4-NITROANILINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
4-NITROPHENOL	NC	NC	0.00	NA	NA	NA	NA	NA	NA
4-NITROQUINOLINE-1-OXIDE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
5-NITRO-O-TOLUIDINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
7,12-DIMETHYLBENZ(A)ANTHRACENE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
A,A-DIMETHYLPHENETHYLAMINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
ACENAPHTHENE	9500000	24000000	0.00	NA	NA	NA	NA	NA	NA
ACENAPHTHYLENE	1100000	2800000	0.00	NA	NA	NA	NA	NA	NA
ACETOPHENONE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
ANILINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
ANTHRACENE	47000000	120000000	0.00	NA	NA	NA	NA	NA	NA
ARAMITE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	5000	15000	0.00	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	500	1500	0.00	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	5000	15000	0.00	NA	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	50000	150000	0.00	NA	NA	NA	NA	NA	NA
BENZYL ALCOHOL	55000000	150000000	0.00	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	1600	3000	0.00	NA	NA	NA	NA	NA	NA
IS(2-ETHYLHEXYL)PHTHALATE	300000	980000	0.00	NA	NA	NA	NA	NA	NA
UTYL BENZYL PHTHALATE	37000000	98000000	0.00	NA	NA	NA	NA	NA	NA
CHLOROBENZILATE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
CHRYSENE	500000	1500000	0.00	NA	NA	NA	NA	NA	NA
DIALLATE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	500	1500	0.00	NA	NA	NA	NA	NA	NA
DIBENZOFURAN	370000	980000	0.00	NA	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	150000000	390000000	0.00	NA	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	1000000000	1000000000	0.00	NA	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	18000000	49000000	0.00	NA	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	7300000	20000000	0.00	NA	NA	NA	NA	NA	NA
DIPHENYLAMINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
ETHYL METHANE SULFONATE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
FLUORANTHENE	6300000	16000000	0.00	NA	NA	NA	NA	NA	NA
FLUORENE	6300000	16000000	0.00	NA	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	2700	8600	0.00	NA	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	55000	150000	0.00	NA	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	1100000	2900000	0.00	NA	NA	NA	NA	NA	NA
HEXACHLOROETHANE	120000	240000	0.00	NA	NA	NA	NA	NA	NA
HEXACHLOROPROPENE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	5000	15000	0.00	NA	NA	NA	NA	NA	NA
ISODRIN	NC	NC	0.00	NA	NA	NA	NA	NA	NA
ISOPHORONE	4500000	14000000	0.00	NA	NA	NA	NA	NA	NA
ISOSAFROLE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
KEPONE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
METHAPYRILENE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
METHYL METHANE SULFONATE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
NAPHTHALENE	3200000	8000000	0.00	NA	NA	NA	NA	NA	NA
N-NITROSODIETHYLAMINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
N-NITROSODIMETHYLAMINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-BUTYLAMINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	610	2000	0.00	NA	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	870000	2800000	0.00	NA	NA	NA	NA	NA	NA
N-NITROSOMETHYLETHYLAMINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
N-NITROSOMORPHOLINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
N-NITROSOPIPERIDINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
N-NITROSOPYRROLIDINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
O,O,O-TRIETHYL PHOSPHOROTHIOATE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
O-TOLUIDINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
PENTACHLOROBENZENE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
ENTACHLOROETHANE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
ENTACHLORONITROBENZENE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
PHENACETIN	NC	NC	0.00	NA	NA	NA	NA	NA	NA
PHENANTHRENE	470000	1200000	0.00	NA	NA	NA	NA	NA	NA
PHENOL	44000000	96000000	0.00	NA	NA	NA	NA	NA	NA
PRONAMIDE	NC	NC	0.00	NA	NA	NA	NA	NA	NA

Table 1
Old Gun Tub Storage Lot Soil Data
Human Health Screening
NSA Crane
Crane, Indiana

LOCATION	IDEM Residential	IDEM Industrial	BACKGROUND	OGSTLSB008	OGSTLSB009	OGSTLSB010	OGSTLSB011	OGSTLSB012	OGSTLSB013
SAMPLE ID				OGTSLSS0080002	OGTSLSS0090002	OGTSLSS0100002	OGTSLSS0110002	OGTSLSS0120002	OGTSLSS0130002
SAMPLE DATE				20110627	20110627	20110627	20110627	20110627	20110627
SAMPLE CODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX				SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SS	SS	SS
TOP DEPTH				0	0	0	0	0	0
BOTTOM DEPTH				2	2	2	2	2	2
PYRENE	4700000	12000000	0.00	NA	NA	NA	NA	NA	NA
PYRIDINE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
SAFROLE	NC	NC	0.00	NA	NA	NA	NA	NA	NA
SOLVENT YELLOW 2	NC	NC	0.00	NA	NA	NA	NA	NA	NA

NC - NO CRITERIA
"0" AS BACKGROUND VALUE = NO CRITERIA
PURPOSE OF "0" VALUE IS FOR CONDITIONAL FORMATTING PURPOSES WHERE NO BACKGROUND VALUE
RESULT EXCEEDS IDEM IND/BACKGROUND
RESULT EXCEEDS IDEM RES/BACKGROUND

Table 2
Old Gun Tub Storage Lot Soil Data
Ecological Screening
NSA Crane
Crane, Indiana

LOCATION	Ecological	BACKGROUND	OGSTLSB001	OGSTLSB002	OGSTLSB003			OGSTLSB004	OGSTLSB005	OGSTLSB006	OGSTLSB007	OGSTLSB008
SAMPLE ID	(Dog SSL)		OGTSLSS0010002	OGTSLSS0020002	OGTSLSS0030002	OGTSLSS0030002-AVG	OGTSLSS0030002-D	OGTSLSS0040002	OGTSLSS0050002	OGTSLSS0060002	OGTSLSS0070002	OGTSLSS0080002
SAMPLE DATE			20050124	20050124	20050124	20050124	20050124	20050124	20050124	20110627	20110627	20110627
SAMPLE CODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH			2	2	2	2	2	2	2	2	2	2
METALS (MG/KG)												
ALUMINUM	2908	19900	587	24200	19100	19100	NA	7760	2780	1960	11900	5070
ANTIMONY	89	6.87	28 J	6.9 J	0.65 U	0.65 U	NA	0.59 U	3.6 J	5.14	0.52 J	5.79 U
ARSENIC	1567	11.83	5.6 J	8.1 J	9.2 J	9.2 J	NA	9.9 J	4.9 J	1.22 J	9.19	5.28 J
BARIUM	78056	210.70	15.1 J	43 J	62.7 J	62.7 J	NA	60.8 J	26.8 J	68.5	92.4	92.9
BERYLLIUM	802	0	0.07 U	0.32 J	0.53 J	0.53 J	NA	0.5 J	0.15 U	NA	NA	NA
CADMIUM	1160	6.05	12.2 J	3.6 J	0.46 J	0.46 J	NA	0.34 U	3.1 J	5.8	1.2	8.42
CALCIUM	NC	0	339000 J	82900 J	47000 J	47000 J	NA	38700 J	182000 J	NA	NA	NA
CHROMIUM	3617	28.72	573 J	34.9 J	12.4 J	12.4 J	NA	13.8 J	32.8 J	14.1	41.3	25.5
COBALT	11045	32.36	11.1 J	4.9 J	6.1 J	6.1 J	NA	6 J	2.8 J	2.3 J	10.9	4.46 J
COPPER	8439	17.61	99.5 J	76.6 J	13.5 J	13.5 J	NA	11.3 J	17.5 J	50.8	19.3	39.1
IRON	75344	37400	29500 J	31400 J	20800 J	20800 J	NA	17900 J	11100 J	4420 J	19700 J	18600 J
LEAD	7082	27.02	543 J	467 J	22 J	22 J	NA	14.7 J	74.9 J	42.5	602	63.2
MAGNESIUM	NC	0	16400 J	16800 J	6080 J	6080 J	NA	3690 J	11000 J	NA	NA	NA
MANGANESE	77604	5700	765 J	209 J	562 J	562 J	NA	164 J	128 J	197	891	264
MERCURY	48	0	0.038 J	0.026 J	0.007 U	0.007 U	NA	0.009 J	0.018 J	NA	NA	NA
NICKEL	2562	22.10	442 J	23.8 J	10.4 J	10.4 J	NA	9.8 J	12.5 J	10.9	12.7	19.7
POTASSIUM	NC	0	873 J	974 J	1300 J	1300 J	NA	1020 J	997 J	NA	NA	NA
SELENIUM	215	0.81	0.22 J	0.36 J	0.43 J	0.43 J	NA	0.36 J	0.32 J	1.91 U	0.338 UJ	3.62 U
SILVER	NC	0	0.07 U	0.12 U	0.051 U	0.051 U	NA	0.044 U	0.042 U	NA	NA	NA
SODIUM	NC	0	178 J	178 J	76.2 U	76.2 U	NA	68.4 U	123 U	NA	NA	NA
THALLIUM	NC	0	0.03 U	0.3 U	0.28 U	0.28 U	NA	0.29 U	0.14 U	NA	NA	NA
TIN	35261	0	3.8 J	6 J	0.4 U	0.4 U	NA	0.29 U	0.72 U	NA	NA	NA
VANADIUM	6269	51.21	8.3 J	22.9 J	22.7 J	22.7 J	NA	23.5 J	11.4 J	6.78	27.8	13.9
ZINC	113619	65.57	1650 J	279 J	53.9 J	53.9 J	NA	64.2 J	706 J	270	158	236
PESTICIDES/PCBS (UG/KG)												
AROCLOR-1016	NC	0	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ	11.7 U
AROCLOR-1221	NC	0	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ	11.7 U
AROCLOR-1232	NC	0	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ	11.7 U
AROCLOR-1242	NC	0	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ	11.7 U
AROCLOR-1248	NC	0	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ	11.7 U
AROCLOR-1254	NC	0	10 U	11 U	11.6 U	11.3 U	11 U	10.6 U	9.97 U	12.2 U	11.2 UJ	11.7 U
AROCLOR-1260	102468	0	390	130	11.6 U	11.3 U	11 U	10.6 U	110	40.8	90.6 J	102 J
AROCLOR-1262	NC	0	NA	NA	NA	NA	NA	NA	NA	12.2 U	11.2 UJ	11.7 U
AROCLOR-1268	NC	0	NA	NA	NA	NA	NA	NA	NA	12.2 U	11.2 UJ	11.7 U
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)												
1-METHYLNAPHTHALENE	98851448	0	NA	NA	NA	NA	NA	NA	NA	3.54 J	3.02 J	5.42 J
2-METHYLNAPHTHALENE	98851448	0	NA	NA	NA	NA	NA	NA	NA	4.01 J	2.32 J	5.44 J
ACENAPHTHENE	98851448	0	NA	NA	NA	NA	NA	NA	NA	6.56 J	3.58 J	22.3
ACENAPHTHYLENE	98851448	0	NA	NA	NA	NA	NA	NA	NA	8.47 J	4.19 J	9.84
ANTHRACENE	98851448	0	NA	NA	NA	NA	NA	NA	NA	9.78	4.54 J	47.1
BENZO(A)ANTHRACENE	926732	0	NA	NA	NA	NA	NA	NA	NA	41.5 J	7.72 J	263 J
BENZO(A)PYRENE	926732	0	NA	NA	NA	NA	NA	NA	NA	65.1	12.7 J	356
BENZO(B)FLUORANTHENE	926732	0	NA	NA	NA	NA	NA	NA	NA	127	28.2 J	534
BENZO(G,H,I)PERYLENE	926732	0	NA	NA	NA	NA	NA	NA	NA	65.9	13.4 J	268
BENZO(K)FLUORANTHENE	926732	0	NA	NA	NA	NA	NA	NA	NA	51.8	12.8 J	161
CHRYSENE	926732	0	NA	NA	NA	NA	NA	NA	NA	67.2 J	14.2 J	346 J
DIBENZO(A,H)ANTHRACENE	926732	0	NA	NA	NA	NA	NA	NA	NA	4.83 U	4.5 U	66.8
FLUORANTHENE	98851448	0	NA	NA	NA	NA	NA	NA	NA	139	32.6 J	726
FLUORENE	98851448	0	NA	NA	NA	NA	NA	NA	NA	7.25 J	3.2 J	20.1
INDENO(1,2,3-CD)PYRENE	926732	0	NA	NA	NA	NA	NA	NA	NA	52.5	11.2 J	252
NAPHTHALENE	98851448	0	NA	NA	NA	NA	NA	NA	NA	5.96 J	3.51 J	10.9
PHENANTHRENE	98851448	0	NA	NA	NA	NA	NA	NA	NA	48	14.9 U	257
PYRENE	926732	0	NA	NA	NA	NA	NA	NA	NA	122	28.3 J	594
SEMIVOLATILES (UG/KG)												
1,2,4,5-TETRACHLOROBENZENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
1,2-DICHLOROBENZENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
1,3-DICHLOROBENZENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
1,4-DICHLOROBENZENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
1,4-DIOXANE	NC	0	111 U	122 U	129 U	129 U	NA	118 U	111 U	NA	NA	NA
1,4-NAPHTHOQUINONE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
1,4-PHENYLENEDIAMINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
1-NAPHTHYLAMINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2,3,4,6-TETRACHLOROPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2,4-DICHLOROPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2,4-DIMETHYLPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2,4-DINITROPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
6-DICHLOROPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
ACETYLAMINOFLUORENE	NC	0	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA	NA
CHLORONAPHTHALENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2-CHLOROPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2-METHYLNAPHTHALENE	98851448	0	3.67 U	4.02 U	4.26 U	4.26 U	NA	3.89 U	3.65 U	NA	NA	NA
2-METHYLPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA

Table 2
Old Gun Tub Storage Lot Soil Data
Ecological Screening
NSA Crane
Crane, Indiana

LOCATION	Ecological	BACKGROUND	OGSTLSB001	OGSTLSB002	OGSTLSB003			OGSTLSB004	OGSTLSB005	OGSTLSB006	OGSTLSB007	OGSTLSB008
SAMPLE ID	(Dog SSL)		OGTSLSS0010002	OGTSLSS0020002	OGTSLSS0030002	OGTSLSS0030002-AVG	OGTSLSS0030002-D	OGTSLSS0040002	OGTSLSS0050002	OGTSLSS0060002	OGTSLSS0070002	OGTSLSS0080002
SAMPLE DATE			20050124	20050124	20050124	20050124	20050124	20050124	20050124	20110627	20110627	20110627
SAMPLE CODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH			2	2	2	2	2	2	2	2	2	2
2-NAPHTHYLAMINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2-NITROANILINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2-NITROPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
2-PICOLINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
3&4-METHYLPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
3,3'-DIMETHYLBENZIDINE	NC	0	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA	NA
3-METHYLCHOLANTHRENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
3-NITROANILINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
4-AMINOBIPHENYL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
4-CHLOROANILINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
4-NITROANILINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
4-NITROPHENOL	NC	0	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA	NA
4-NITROQUINOLINE-1-OXIDE	NC	0	74.4 UR	81.7 UR	86.5 UR	86.5 UR	NA	78.9 UR	74.2 UR	NA	NA	NA
5-NITRO-O-TOLUIDINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
7,12-DIMETHYLBENZ(A)ANTHRACENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
A,A-DIMETHYLPHENETHYLAMINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
ACENAPHTHENE	98851448	0	3.67 U	4.02 U	4.26 U	4.26 U	NA	3.89 U	3.65 U	NA	NA	NA
ACENAPHTHYLENE	98851448	0	28	4.02 U	4.26 U	4.26 U	NA	3.89 U	12	NA	NA	NA
ACETOPHENONE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
ANILINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
ANTHRACENE	98851448	0	24	4.02 U	4.26 U	4.26 U	NA	3.89 U	9	NA	NA	NA
ARAMITE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
BENZO(A)ANTHRACENE	926732	0	140	18	27	27	NA	3.89 U	67	NA	NA	NA
BENZO(A)PYRENE	926732	0	140	15	21 J	21 J	NA	3.89 U	67	NA	NA	NA
BENZO(B)FLUORANTHENE	926732	0	390	25	30 J	30 J	NA	3.89 U	190	NA	NA	NA
BENZO(G,H,I)PERYLENE	926732	0	140	23	13 J	13 J	NA	3.89 U	59	NA	NA	NA
BENZO(K)FLUORANTHENE	926732	0	180	21	9 J	9 J	NA	3.89 U	100	NA	NA	NA
BENZYL ALCOHOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
BIS(2-CHLOROETHOXY)METHANE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	27575937	0	1500 J	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	140 J	NA	NA	NA
BUTYL BENZYL PHTHALATE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
CHLOROBENZILATE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
CHRYSENE	926732	0	260	22	21	21	NA	3.89 U	130	NA	NA	NA
DIALLATE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	926732	0	38	4.02 U	4.26 UJ	4.26 UJ	NA	3.89 U	19	NA	NA	NA
DIBENZOFURAN	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
DIETHYL PHTHALATE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
DIMETHYL PHTHALATE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
DI-N-BUTYL PHTHALATE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
DI-N-OCTYL PHTHALATE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
DIPHENYLAMINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
ETHYL METHANE SULFONATE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
FLUORANTHENE	98851448	0	310	35	44	44	NA	3.89 U	210	NA	NA	NA
FLUORENE	98851448	0	3.67 U	4.02 U	4.26 U	4.26 U	NA	3.89 U	3.65 U	NA	NA	NA
HEXACHLOROBENZENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
HEXACHLOROBUTADIENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NC	0	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA	NA
HEXACHLOROETHANE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
HEXACHLOROPROPENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	926732	0	130	21	10 J	10 J	NA	3.89 U	62	NA	NA	NA
ISODRIN	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
ISOPHORONE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
ISOSAFROLE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
KEPONE	NC	0	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA	NA
METHAPYRILENE	NC	0	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA	NA
METHYL METHANE SULFONATE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
NAPHTHALENE	98851448	0	9	4.02 J	4.26 U	4.26 U	NA	3.89 U	4 J	NA	NA	NA
N-NITROSODIETHYLAMINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
N-NITROSODIMETHYLAMINE	NC	0	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA	NA
N-NITROSO-DI-N-BUTYLAMINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NC	0	74.4 UJ	81.7 UJ	86.5 UJ	86.5 UJ	NA	78.9 UJ	74.2 UJ	NA	NA	NA
N-NITROSODIPHENYLAMINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
N-NITROSOMETHYLETHYLAMINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
N-NITROSOMORPHOLINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
N-NITROSOPIPERIDINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
N-NITROSOPYRROLIDINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
O,O-TRIETHYL PHOSPHOROTHIOATE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
O-TOLUIDINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
PENTACHLOROBENZENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
PENTACHLOROETHANE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
PENTACHLORONITROBENZENE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA

Table 2
Old Gun Tub Storage Lot Soil Data
Ecological Screening
NSA Crane
Crane, Indiana

LOCATION	Ecological	BACKGROUND	OGSTLSB001	OGSTLSB002	OGSTLSB003			OGSTLSB004	OGSTLSB005	OGSTLSB006	OGSTLSB007	OGSTLSB008
SAMPLE ID	(Dog SSL)		OGTSLSS0010002	OGTSLSS0020002	OGTSLSS0030002	OGTSLSS0030002-AVG	OGTSLSS0030002-D	OGTSLSS0040002	OGTSLSS0050002	OGTSLSS0060002	OGTSLSS0070002	OGTSLSS0080002
SAMPLE DATE			20050124	20050124	20050124	20050124	20050124	20050124	20050124	20110627	20110627	20110627
SAMPLE CODE			NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH			2	2	2	2	2	2	2	2	2	2
PHENACETIN	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
PHENANTHRENE	98851448	0	41	10	4.26 U	4.26 U	NA	3.89 U	26	NA	NA	NA
PHENOL	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
PRONAMIDE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
PYRENE	926732	0	310	40	44	44	NA	3.89 U	170	NA	NA	NA
PYRIDINE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
SAFROLE	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA
SOLVENT YELLOW 2	NC	0	74.4 U	81.7 U	86.5 U	86.5 U	NA	78.9 U	74.2 U	NA	NA	NA

NC - NO CRITERIA
EXCEEDS ECO AND BACKGROUND VALUES
"0" AS BACKGROUND VALUE = NO CRITERIA
PURPOSE OF "0" VALUE IS FOR CONDITIONAL FORMATTING PURPOSES WHERE NO BACKGROUND VALUE PRESENT

Table 2
Old Gun Tub Storage Lot Soil Data
Ecological Screening
NSA Crane
Crane, Indiana

LOCATION	Ecological	BACKGROUND	OGSTLSB009	OGSTLSB010	OGSTLSB011	OGSTLSB012	OGSTLSB013
SAMPLE ID	(Dog SSL)		OGTSLSS0090002	OGTSLSS0100002	OGTSLSS0110002	OGTSLSS0120002	OGTSLSS0130002
SAMPLE DATE			20110627	20110627	20110627	20110627	20110627
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0
BOTTOM DEPTH			2	2	2	2	2
METALS (MG/KG)							
ALUMINUM	2908	19900	19700	11300	15700	2480	1520
ANTIMONY	89	6.87	0.481 U	0.673	0.579 J	2.96 J	26.8
ARSENIC	1567	11.83	12.9	8.26	10	3.45 U	3.21 J
BARIUM	78056	210.70	84.5	59.8	81.9	25.9	16.3 J
BERYLLIUM	802	0	NA	NA	NA	NA	NA
CADMIUM	1160	6.05	0.12 U	1.95	4.17	4.66	8.14
CALCIUM	NC	0	NA	NA	NA	NA	NA
CHROMIUM	3617	28.72	22.1	23	29.8	34.6	63
COBALT	11045	32.36	5.61	3.89	7.98	3.67 J	3.89 J
COPPER	8439	17.61	18.6	17.7	26.7	46.5	95.9
IRON	75344	37400	28400 J	17800 J	26000 J	7630 J	18600 J
LEAD	7082	27.02	14.6	60.3	36	231	371
MAGNESIUM	NC	0	NA	NA	NA	NA	NA
MANGANESE	77604	5700	120	120	306	181	184
MERCURY	48	0	NA	NA	NA	NA	NA
NICKEL	2562	22.10	15.8	12.7	27.3	30	157
POTASSIUM	NC	0	NA	NA	NA	NA	NA
SELENIUM	215	0.81	0.301 UJ	0.29 UJ	0.306 UJ	2.87 U	2.88 U
SILVER	NC	0	NA	NA	NA	NA	NA
SODIUM	NC	0	NA	NA	NA	NA	NA
THALLIUM	NC	0	NA	NA	NA	NA	NA
TIN	35261	0	NA	NA	NA	NA	NA
VANADIUM	6269	51.21	37.5	26.6	31.9	9.55	9.52
ZINC	113619	65.57	55.2	337	161	1040	612
PESTICIDES/PCBS (UG/KG)							
AROCLOR-1016	NC	0	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1221	NC	0	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1232	NC	0	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1242	NC	0	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1248	NC	0	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1254	NC	0	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
ROCLOR-1260	102468	0	9.69 U	34.3 J	104 J	45	327
AROCLOR-1262	NC	0	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
AROCLOR-1268	NC	0	9.69 U	9.26 U	10.1 UJ	9.35 U	9.83 U
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)							
1-METHYLNAPHTHALENE	98851448	0	3.7 U	2.24 J	3.87 U	3.67 U	2.84 J
2-METHYLNAPHTHALENE	98851448	0	1.99 J	2.07 J	3.87 U	2.99 J	3.73 J
ACENAPHTHENE	98851448	0	3.02 J	2.84 J	2.48 J	2.99 J	5.4 J
ACENAPHTHYLENE	98851448	0	3.7 U	26.2	2.07 J	38.7	42.9
ANTHRACENE	98851448	0	3.7 U	15	3.47 J	27.2	39
BENZO(A)ANTHRACENE	926732	0	3.7 UJ	62 J	5.91 J	169 J	130 J
BENZO(A)PYRENE	926732	0	3.7 U	96.1	7.48 J	185	144
BENZO(B)FLUORANTHENE	926732	0	2.95 J	267	16.7	430	343
BENZO(G,H,I)PERYLENE	926732	0	3.7 U	92.2	9.78	172	178
BENZO(K)FLUORANTHENE	926732	0	2.49 J	95.5	4.05 J	191	100
CHRYSENE	926732	0	3.7 UJ	180 J	5.54 J	274 J	204 J
DIBENZO(A,H)ANTHRACENE	926732	0	3.7 U	19.9	3.87 U	49.5	38.6
FLUORANTHENE	98851448	0	3.53 J	300	9.73	392	283
FLUORENE	98851448	0	3.7 U	3.76 J	2.67 J	3.81 J	5.49 J
INDENO(1,2,3-CD)PYRENE	926732	0	3.7 U	80.3	7.63 J	167	154
NAPHTHALENE	98851448	0	3.9 J	6.42 J	3.07 J	6.62 J	10.7
PHENANTHRENE	98851448	0	7.26 U	43.8	7.76 U	56.5	79
PYRENE	926732	0	2.7 J	251	9.36	345	242
SEMIVOLATILES (UG/KG)							
1,2,4,5-TETRACHLOROBENZENE	NC	0	NA	NA	NA	NA	NA
1,2,4-TRICHLOROBENZENE	NC	0	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NC	0	NA	NA	NA	NA	NA
1,3-DICHLOROBENZENE	NC	0	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NC	0	NA	NA	NA	NA	NA
1,4-DIOXANE	NC	0	NA	NA	NA	NA	NA
1,4-NAPHTHOQUINONE	NC	0	NA	NA	NA	NA	NA
1,4-PHENYLENEDIAMINE	NC	0	NA	NA	NA	NA	NA
1-NAPHTHYLAMINE	NC	0	NA	NA	NA	NA	NA
2,2'-OXYBIS(1-CHLOROPROPANE)	NC	0	NA	NA	NA	NA	NA
2,3,4,6-TETRACHLOROPHENOL	NC	0	NA	NA	NA	NA	NA
2,4,5-TRICHLOROPHENOL	NC	0	NA	NA	NA	NA	NA
2,4,6-TRICHLOROPHENOL	NC	0	NA	NA	NA	NA	NA
2,4-DICHLOROPHENOL	NC	0	NA	NA	NA	NA	NA
2,4-DIMETHYLPHENOL	NC	0	NA	NA	NA	NA	NA
2,4-DINITROPHENOL	NC	0	NA	NA	NA	NA	NA
,6-DICHLOROPHENOL	NC	0	NA	NA	NA	NA	NA
ACETYLAMINOFLUORENE	NC	0	NA	NA	NA	NA	NA
-CHLORONAPHTHALENE	NC	0	NA	NA	NA	NA	NA
2-CHLOROPHENOL	NC	0	NA	NA	NA	NA	NA
2-METHYLNAPHTHALENE	98851448	0	NA	NA	NA	NA	NA
2-METHYLPHENOL	NC	0	NA	NA	NA	NA	NA

Table 2
Old Gun Tub Storage Lot Soil Data
Ecological Screening
NSA Crane
Crane, Indiana

LOCATION	Ecological	BACKGROUND	OGSTLSB009	OGSTLSB010	OGSTLSB011	OGSTLSB012	OGSTLSB013
SAMPLE ID	(Dog SSL)		OGTSLSS0090002	OGTSLSS0100002	OGTSLSS0110002	OGTSLSS0120002	OGTSLSS0130002
SAMPLE DATE			20110627	20110627	20110627	20110627	20110627
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0
BOTTOM DEPTH			2	2	2	2	2
2-NAPHTHYLAMINE	NC	0	NA	NA	NA	NA	NA
2-NITROANILINE	NC	0	NA	NA	NA	NA	NA
2-NITROPHENOL	NC	0	NA	NA	NA	NA	NA
2-PICOLINE	NC	0	NA	NA	NA	NA	NA
3&4-METHYLPHENOL	NC	0	NA	NA	NA	NA	NA
3,3'-DICHLOROBENZIDINE	NC	0	NA	NA	NA	NA	NA
3,3'-DIMETHYLBENZIDINE	NC	0	NA	NA	NA	NA	NA
3-METHYLCHOLANTHRENE	NC	0	NA	NA	NA	NA	NA
3-NITROANILINE	NC	0	NA	NA	NA	NA	NA
4,6-DINITRO-2-METHYLPHENOL	NC	0	NA	NA	NA	NA	NA
4-AMINOBIPHENYL	NC	0	NA	NA	NA	NA	NA
4-BROMOPHENYL PHENYL ETHER	NC	0	NA	NA	NA	NA	NA
4-CHLORO-3-METHYLPHENOL	NC	0	NA	NA	NA	NA	NA
4-CHLOROANILINE	NC	0	NA	NA	NA	NA	NA
4-CHLOROPHENYL PHENYL ETHER	NC	0	NA	NA	NA	NA	NA
4-NITROANILINE	NC	0	NA	NA	NA	NA	NA
4-NITROPHENOL	NC	0	NA	NA	NA	NA	NA
4-NITROQUINOLINE-1-OXIDE	NC	0	NA	NA	NA	NA	NA
5-NITRO-O-TOLUIDINE	NC	0	NA	NA	NA	NA	NA
7,12-DIMETHYLBENZ(A)ANTHRACENE	NC	0	NA	NA	NA	NA	NA
A,A-DIMETHYLPHENETHYLAMINE	NC	0	NA	NA	NA	NA	NA
ACENAPHTHENE	98851448	0	NA	NA	NA	NA	NA
ACENAPHTHYLENE	98851448	0	NA	NA	NA	NA	NA
ACETOPHENONE	NC	0	NA	NA	NA	NA	NA
ANILINE	NC	0	NA	NA	NA	NA	NA
ANTHRACENE	98851448	0	NA	NA	NA	NA	NA
ARAMITE	NC	0	NA	NA	NA	NA	NA
BENZO(A)ANTHRACENE	926732	0	NA	NA	NA	NA	NA
BENZO(A)PYRENE	926732	0	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	926732	0	NA	NA	NA	NA	NA
BENZO(G,H,I)PERYLENE	926732	0	NA	NA	NA	NA	NA
BENZO(K)FLUORANTHENE	926732	0	NA	NA	NA	NA	NA
ENZYL ALCOHOL	NC	0	NA	NA	NA	NA	NA
IS(2-CHLOROETHOXY)METHANE	NC	0	NA	NA	NA	NA	NA
BIS(2-CHLOROETHYL)ETHER	NC	0	NA	NA	NA	NA	NA
BIS(2-ETHYLHEXYL)PHTHALATE	27575937	0	NA	NA	NA	NA	NA
BUTYL BENZYL PHTHALATE	NC	0	NA	NA	NA	NA	NA
CHLOROBENZILATE	NC	0	NA	NA	NA	NA	NA
CHRYSENE	926732	0	NA	NA	NA	NA	NA
DIALLATE	NC	0	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	926732	0	NA	NA	NA	NA	NA
DIBENZOFURAN	NC	0	NA	NA	NA	NA	NA
DIETHYL PHTHALATE	NC	0	NA	NA	NA	NA	NA
DIMETHYL PHTHALATE	NC	0	NA	NA	NA	NA	NA
DI-N-BUTYL PHTHALATE	NC	0	NA	NA	NA	NA	NA
DI-N-OCTYL PHTHALATE	NC	0	NA	NA	NA	NA	NA
DIPHENYLAMINE	NC	0	NA	NA	NA	NA	NA
ETHYL METHANE SULFONATE	NC	0	NA	NA	NA	NA	NA
FLUORANTHENE	98851448	0	NA	NA	NA	NA	NA
FLUORENE	98851448	0	NA	NA	NA	NA	NA
HEXACHLOROBENZENE	NC	0	NA	NA	NA	NA	NA
HEXACHLOROBUTADIENE	NC	0	NA	NA	NA	NA	NA
HEXACHLOROCYCLOPENTADIENE	NC	0	NA	NA	NA	NA	NA
HEXACHLOROETHANE	NC	0	NA	NA	NA	NA	NA
HEXACHLOROPROPENE	NC	0	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	926732	0	NA	NA	NA	NA	NA
ISODRIN	NC	0	NA	NA	NA	NA	NA
ISOPHORONE	NC	0	NA	NA	NA	NA	NA
ISOSAFROLE	NC	0	NA	NA	NA	NA	NA
KEPONE	NC	0	NA	NA	NA	NA	NA
METHAPYRILENE	NC	0	NA	NA	NA	NA	NA
METHYL METHANE SULFONATE	NC	0	NA	NA	NA	NA	NA
NAPHTHALENE	98851448	0	NA	NA	NA	NA	NA
N-NITROSODIETHYLAMINE	NC	0	NA	NA	NA	NA	NA
N-NITROSODIMETHYLAMINE	NC	0	NA	NA	NA	NA	NA
N-NITROSO-DI-N-BUTYLAMINE	NC	0	NA	NA	NA	NA	NA
N-NITROSO-DI-N-PROPYLAMINE	NC	0	NA	NA	NA	NA	NA
N-NITROSODIPHENYLAMINE	NC	0	NA	NA	NA	NA	NA
N-NITROSOMETHYLETHYLAMINE	NC	0	NA	NA	NA	NA	NA
N-NITROSOMORPHOLINE	NC	0	NA	NA	NA	NA	NA
N-NITROSOPIPERIDINE	NC	0	NA	NA	NA	NA	NA
N-NITROSOPYRROLIDINE	NC	0	NA	NA	NA	NA	NA
,O,O-TRIETHYL PHOSPHOROTHIOATE	NC	0	NA	NA	NA	NA	NA
-TOLUIDINE	NC	0	NA	NA	NA	NA	NA
PENTACHLOROBENZENE	NC	0	NA	NA	NA	NA	NA
PENTACHLOROETHANE	NC	0	NA	NA	NA	NA	NA
PENTACHLORONITROBENZENE	NC	0	NA	NA	NA	NA	NA

Table 2
Old Gun Tub Storage Lot Soil Data
Ecological Screening
NSA Crane
Crane, Indiana

LOCATION	Ecological	BACKGROUND	OGSTLSB009	OGSTLSB010	OGSTLSB011	OGSTLSB012	OGSTLSB013
SAMPLE ID	(Dog SSL)		OGTSLSS0090002	OGTSLSS0100002	OGTSLSS0110002	OGTSLSS0120002	OGTSLSS0130002
SAMPLE DATE			20110627	20110627	20110627	20110627	20110627
SAMPLE CODE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX			SO	SO	SO	SO	SO
SAMPLE TYPE			NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX			SS	SS	SS	SS	SS
TOP DEPTH			0	0	0	0	0
BOTTOM DEPTH			2	2	2	2	2
PHENACETIN	NC	0	NA	NA	NA	NA	NA
PHENANTHRENE	98851448	0	NA	NA	NA	NA	NA
PHENOL	NC	0	NA	NA	NA	NA	NA
PRONAMIDE	NC	0	NA	NA	NA	NA	NA
PYRENE	926732	0	NA	NA	NA	NA	NA
PYRIDINE	NC	0	NA	NA	NA	NA	NA
SAFROLE	NC	0	NA	NA	NA	NA	NA
SOLVENT YELLOW 2	NC	0	NA	NA	NA	NA	NA

NC - NO CRITERIA
EXCEEDS ECO AND BACKGROUND VALUES
"0" AS BACKGROUND VALUE = NO CRITERIA
PURPOSE OF "0" VALUE IS FOR CONDITIONAL FORMATTING PURPOSES WHERE NO B

TABLE 3
CALCULATION OF SOIL SCREENING LEVEL FOR DOGS
OLD GUN STORAGE LOT
NSA CRANE, INDIANA

Chemical	Mammal TRVs[1]		Soil Screening Levels[2]	
	NOAEL (mg/kg-day)	LOAEL (mg/kg-day)	NOAEL-based (mg/kg)	LOAEL-based (mg/kg)
METALS				
ALUMINUM	1.93	19.3	2,908	29,083
ANTIMONY	0.059	2.76	89	4,159
ARSENIC	1.04	4.55	1,567	6,856
BARIUM	51.8	82.7	78,056	124,619
BERYLLIUM	0.532	0.673	802	1,014
CADMIUM	0.77	6.9	1,160	10,397
CALCIUM	NA	NA	NA	NA
CHROMIUM	2.4	58.17	3,617	87,655
COBALT	7.33	18.9	11,045	28,480
COPPER	5.6	82.7	8,439	124,619
IRON	50	500	75,344	753,441
LEAD	4.7	186.4	7,082	280,883
MAGNESIUM	NA	NA	NA	NA
MANGANESE	51.5	145.67	77,604	219,507
MERCURY	0.032	0.16	48	241
NICKEL	1.7	14.77	2,562	22,257
POTASSIUM	NA	NA	NA	NA
SELENIUM	0.143	0.661	215	996
SODIUM	NA	NA	NA	NA
TIN	23.4	35	35,261	52,741
VANADIUM	4.16	9.436	6,269	14,219
ZINC	75.4	297.58	113,619	448,418
POLYCHLORINATED BIPHENYLS				
AROCLOR-1260	0.068	0.68	102	1,025
POLYCYCLIC AROMATIC HYDROCARBONS				
1-METHYLNAPHTHALENE	65.6	356	98,851	536,450
2-METHYLNAPHTHALENE	65.6	356	98,851	536,450
ACENAPHTHENE	65.6	356	98,851	536,450
ACENAPHTHYLENE	65.6	356	98,851	536,450
ANTHRACENE	65.6	356	98,851	536,450
BENZO(A)ANTHRACENE	0.615	38.4	927	57,864
BENZO(A)PYRENE	0.615	38.4	927	57,864
BENZO(B)FLUORANTHENE	0.615	38.4	927	57,864
BENZO(G,H,I)PERYLENE	0.615	38.4	927	57,864
BENZO(K)FLUORANTHENE	0.615	38.4	927	57,864
CHRYSENE	0.615	38.4	927	57,864
DIBENZO(A,H)ANTHRACENE	0.615	38.4	927	57,864
FLUORANTHENE	65.6	356	98,851	536,450
FLUORENE	65.6	356	98,851	536,450
INDENO(1,2,3-CD)PYRENE	0.615	38.4	927	57,864
NAPHTHALENE	65.6	356	98,851	536,450
PHENANTHRENE	65.6	356	98,851	536,450
PYRENE	0.615	38.4	927	57,864
SEMIVOLATILES				
BIS(2-ETHYLHEXYL)PHTHALATE	18.3	183	27,576	275,759

1 - The sources of the toxicity reference values are presented in Table 2.
2 - The screening levels were calculated using the below equation.

$$\text{Screening Level (mg/kg)} = \frac{BW * TRV * EEQ}{Is * AUF}$$

Exposure Inputs	Average Values	Units	
Body Weight = BW	12.7	kg	Sample et al., (1996)
Food Ingestion Rate = If	0.301	kg/day	Sample et al., (1996)
Percent soil ingestion rate	2.8	percent	Based on the value for a fox from Beyer et al., (1994)
Soil Ingestion Rate = Is	0.0084	kg/day	(If * percent soil ingestion rate)
Home Range = HR	1.0		

AUF - Area Use Factor (assumed 100%)
BW - Body Weight
EEQ - Ecological Effects Quotient (equals 1.0)
If - Food Ingestion Rate
Is - Incidental Surface Soil Ingestion Rate
LOAEL - Lowest Observed Adverse Effects Level
NOAEL - No Observed Adverse Effects Level
TRV - Toxicity Reference Value

TABLE 4
SOURCES AND ENDPOINTS FOR NOAELS AND LOAELS FOR TERRESTRIAL WILDLIFE
OLD GUN TUB STORAGE LOT
NSA CRANE, INDIANA

Parameters	Concentration (mg/kg-day)	Endpoint	Effect	Chronic/ Subchronic	Species	Primary Reference	Source of Reference
Semivolatiles							
Bis(2-ethylhexyl)phthalate	183.3	LOAEL	reproductive	chronic	mouse	Lamb et al., 1987	Sample et.al., 1996
Bis(2-ethylhexyl)phthalate	18.33	NOAEL	reproductive	chronic	mouse	Lamb et al., 1987	Sample et.al., 1996
High Molecular Weight PAHs	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
High Molecular Weight PAHs	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Low Molecular Weight PAHs	356	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Low Molecular Weight PAHs	65.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Polychlorinated Biphenyls							
Aroclor-1254	0.68	LOAEL	reproduction	chronic	mouse	McCoy et al., 1995	Sample et.al., 1996
Inorganics							
Aluminum	19.3	LOAEL	reproductive	chronic	mouse	Ondreicka et al., 1966	Sample et.al., 1996
Antimony	2.76	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Antimony	0.059	NOAEL	reproduction & growth	chronic	rat	USEPA, 2005	
Arsenic	4.55	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Arsenic	1.04	NOAEL	reproduction & growth	chronic	dog	USEPA, 2005	
Barium	82.7	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Barium	51.8	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Beryllium	0.673	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Beryllium	0.532	NOAEL	Survival	chronic	rat	USEPA, 2005	
Cadmium	6.9	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Cadmium	0.77	NOAEL	reproduction & growth	chronic	rat	USEPA, 2005	
Chromium(III)	58.17	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2008	
Chromium(III)	2.4	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2008	
Cobalt	18.9	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Cobalt	7.33	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Copper	82.7	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Copper	5.6	NOAEL	reproduction & growth	chronic	pig	USEPA, 2007	
Iron	500	LOAEL	unknown	chronic	rabbit	NAS, 1980	
Lead	186.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Lead	4.7	NOAEL	reproduction & growth	chronic	rat	USEPA, 2005	
Manganese	145.67	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Manganese	51.5	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Mercury	0.16	LOAEL	reproductive	chronic	rat	Verschuuren et al., 1976	Sample et.al., 1996
Mercury	0.032	NOAEL	reproductive	chronic	rat	Verschuuren et al., 1976	Sample et.al., 1996
Nickel	14.77	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Nickel	1.7	NOAEL	reproduction & growth	chronic	mouse	USEPA, 2007	
Selenium	0.661	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Selenium	0.143	NOAEL	reproduction & growth	chronic	pig	USEPA, 2007	
Tin	23.4	NOAEL	reproductive	chronic	mouse	Davis et al., 1987	Sample et.al., 1996
Tin	35	LOAEL	reproductive	chronic	mouse	Davis et al., 1987	Sample et.al., 1996
Vanadium	9.436	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Vanadium	4.16	NOAEL	reproduction & growth	chronic	mouse	USEPA, 2005	
Zinc	297.58	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Zinc	75.4	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	

Notes:

NOAEL = No Observed Adverse Effects Level

LOAEL = Lowest Observed Adverse Effects Level

The NOAELS and LOAELS for the following PAHs are based on the Low Molecular Weight PAH values: acenapthylene, acenaphthene, anthracene, fluoranthene, fluorene, phenanthrene, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene.

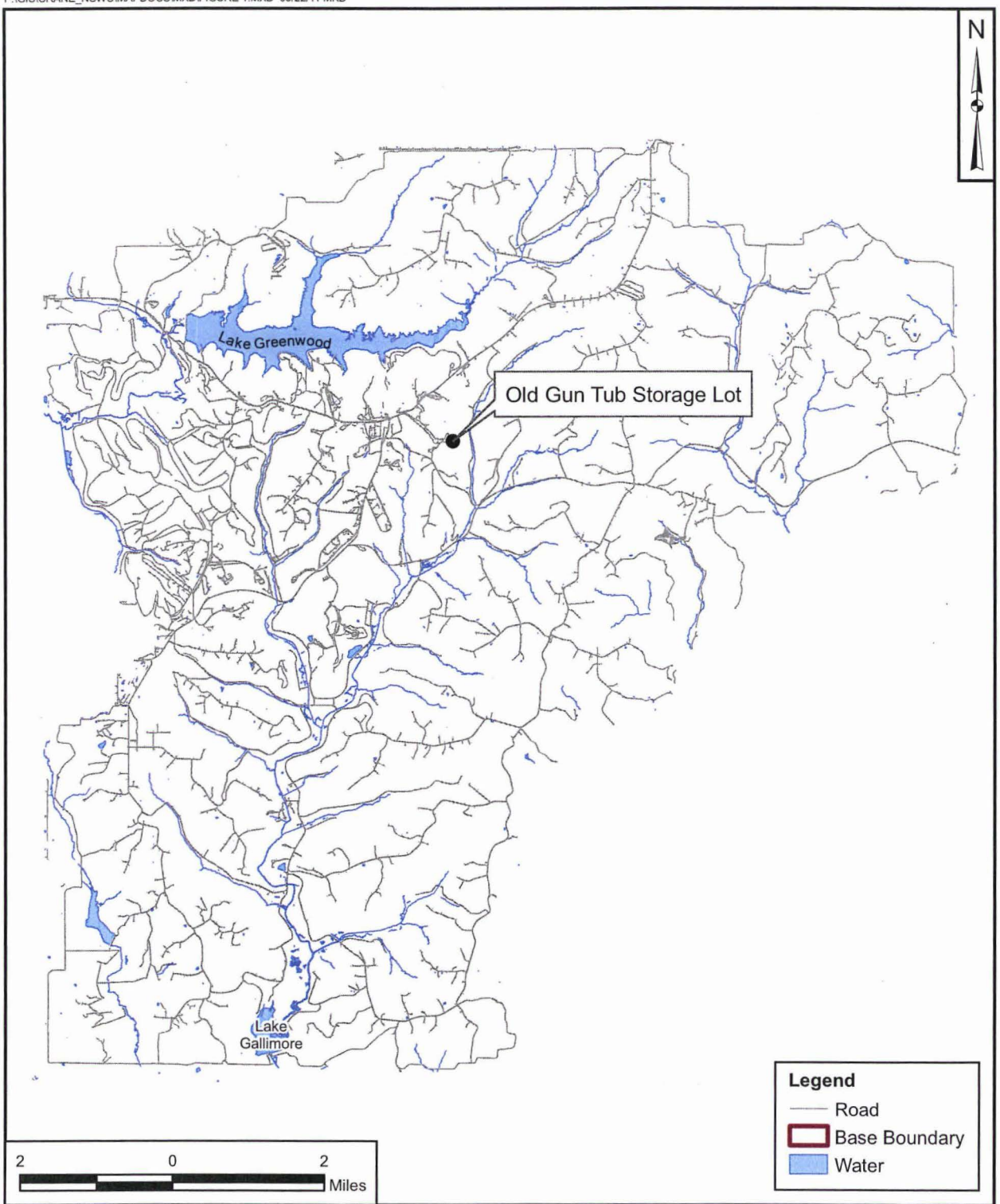
The NOAELS and LOAELS for the following PAHs are based on the High Molecular Weight PAH values: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenzo(a,h)anthracene, dibenzofuran, indeno(1,2,3-c,d)pyrene, and pyrene.

The LOAEL for Aroclor-1254 wAS used as surrogates for Aroclor-1260.

The LOAELs used for several metals were calculated as the geometric mean of growth and reproduction data from the Ecological Soil Screening Levels (U.S. EPA, 2005, 2006, 2007).

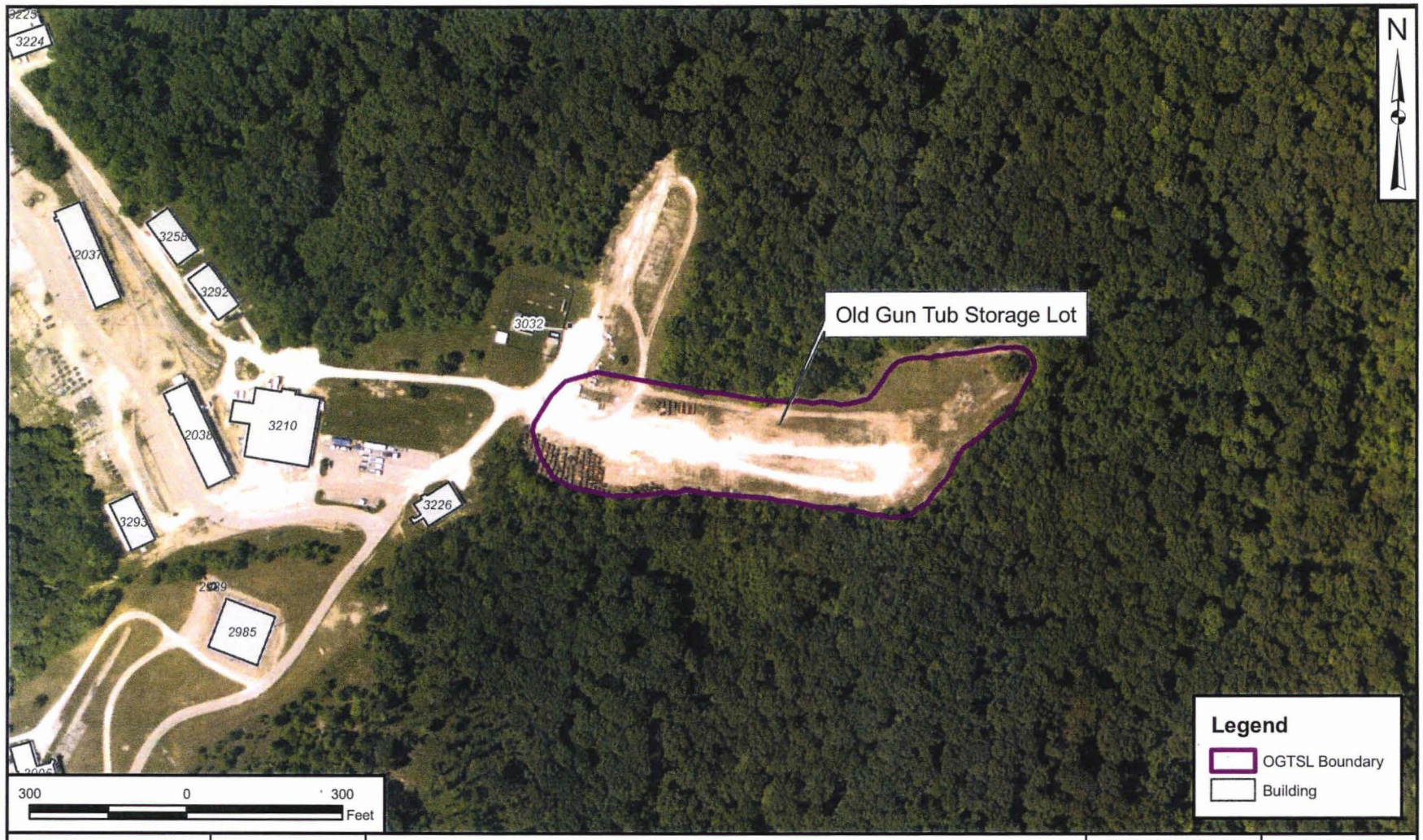
References for the NOAELS and LOAELs are presented in "TRV Source and Endpoint References".

P:\GIS\CRANE_NSWC\MAPDOCS\MXD\FIGURE 1.MXD 09/22/11 MKB



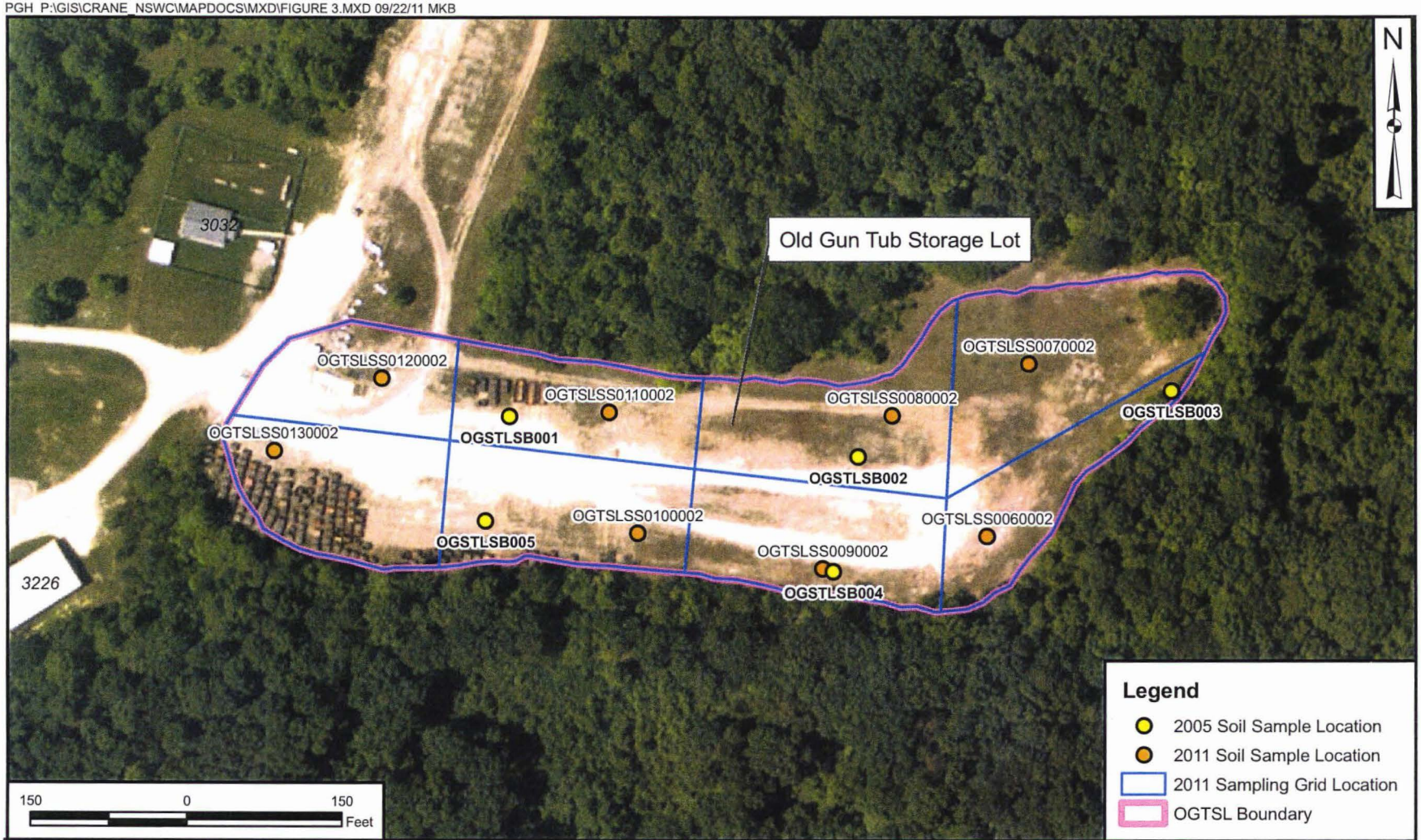
DRAWN BY S. STROZ	DATE 05/17/11	NAVFAC	SITE LOCATION MAP OLD GUN TUB STORAGE LOT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER CTO F276
CHECKED BY J. DUCAR	DATE 06/07/11			APPROVED BY S. RUFFING — DATE 03/02/11
REVISED BY MK BOND	DATE 09/22/11			APPROVED BY — DATE —
SCALE AS NOTED				FIGURE NO. FIGURE 1 — REV 0

P:\GIS\CRANE_NSWC\MAPDOCS\MXD\FIGURE 2.MXD 09/22/11 MKB



DRAWN BY S. STROZ	DATE 06/01/11	OLD GUN TUB STORAGE LOT LOCATION NSA CRANE CRANE, INDIANA	CONTRACT NUMBER — / CTO NUMBER F276
CHECKED BY K. LOSEKAMP	DATE 09/13/11		APPROVED BY — / DATE —
REVISED BY MK BOND	DATE 09/22/11		APPROVED BY — / DATE —
SCALE AS NOTED			FIGURE NO. FIGURE 2 / REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\FIGURE 3.MXD 09/22/11 MKB



DRAWN BY	DATE
K. MOORE	7/8/11
CHECKED BY	DATE
J. DUCAR	7/8/11
REVISED BY	DATE
MK BOND	09/22/11
SCALE	
AS NOTED	

NAVFAC

OLD GUN TUB STORAGE LOT
SOIL SAMPLING LOCATIONS
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
—	F276
APPROVED BY	DATE
—	—
APPROVED BY	DATE
—	—
FIGURE NO.	REV
FIGURE 3	0

Appendix A

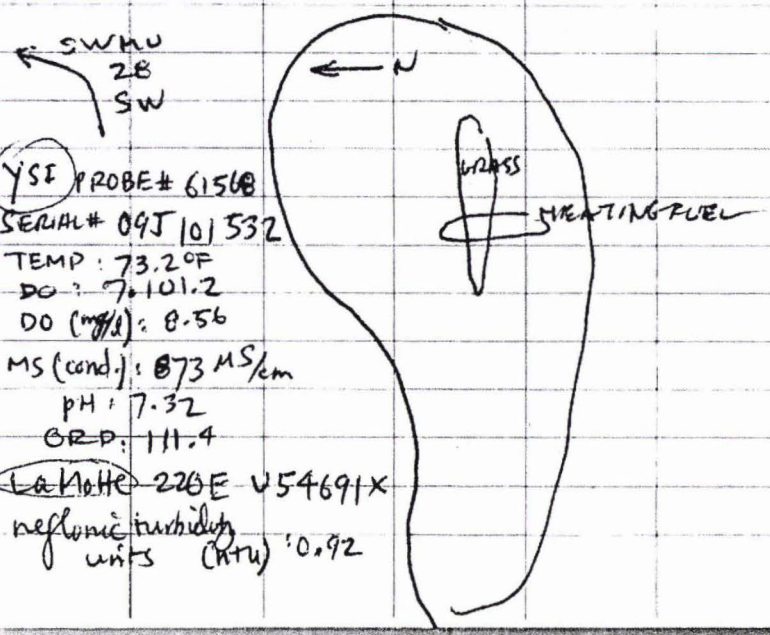
Field Documentation

6/22/11 OGTSL / ~~SACD~~

OGTSL – MARK FOR UTILITIES
– MARKED ENTIRE PERIMETER W/ WHITE MARKER/FLAGGING TAPE AND WHITE SPRAY PAINT

T. BRENT – FOCUS ON "ACCESSIBLE SOIL" IN/AROUND GRAVEL
– MAY NEED PICKAX

~~FROM T-L TRAILER~~
TURN LEFT AT B3226
TURN RET @ B3032 (MP Dog Bldg)



YSI PROBE# 61568
SERIAL# 09J101532
TEMP: 73.2°F
DO: 7.101.2
DO (mg/l): 8.56
MS (cond.): 873 µS/cm
pH: 7.32
ORP: 111.4
~~LaMotte~~ 2020E V54691X
neflonic turbidity units (NTU) 0.92

06/23/2011 SWMU 28

MID 80°FS – 30% RAIN
ONSITE: SMITH / FLOYD / LOSEKAMP
STAFFORD / CAUDILL (MICAH)

0800 OPS/SAFETY BRIEFING
SACD take 45 south past SWMU 13
rgt on 101 (truckscales sign)
left @ B2078/79/
lft @ 1st warehouse ("no commercial vehicles")
– mark borders with white pin flags
– fire hydrant west of "northwest area" (bring pickax)

COLLECTED
0930 28SB/SS11 CoC# ED00000163-3

1200 28SB/SS12-15
28SB FD062311-02
28SS FD062311-01

WELL LEVEL @ SWMU26 (03105)
– NONE

1100 T. BRENT – relayed Scott (High Voltage) concerns RE: drilling – instructed to proceed

06/24/2011 SWMU 28
HIGH 80°s
ONSITE — FLOYD/LOSEKAMP/SMITH
STAFFORD/CANDIL
OPS/SAFETY BRIEFING

~~0000~~ SAMPLES

28SB 35 36 21
37 22
38 23
1230 39
40

28SSFD062411-01

— Mark "Saturday Delivery" on coolers
— Mark "RUSH GRO/DRO/ERO only" on CoC
CoC# ED00000-163-4

Demob for the week
Return ~~1000~~ HOURS MONDAY JUNE 27

06/27/2011 SWMU28
MID 80°FS — LIGHT RAIN
ONSITE: SMITH/LOSEKAMP/FLOYD
BEN BORTH/Philip Candill (MICAH)
0915 OPS/SAFETY BRIEFING
CALL FROM PITTSBURGH, COLLECT
OGTSL SAMPLES ASAP

1130 OGTSLSS006-130002 CoC# 0352
COLLECTED
PICKAX USED FOR SAMPLE LOCATIONS
09/10/12 — REST COLLECTED
AT SURFACE

1030 SWMU 28 COLLECTED
28SS16-2050002
CoC# ED00000163-5

1300 SWMU 28 COLLECTED
28SB27-29S0204
28SBFD062711-01

SACD
SWMU 28

06/28/2011

MID 80°F'S — SUNNY

ON SITE: FLOYD/LOSEKAMP/SMITH
BORTH/CAUDILL (MICAH)

0805 OPS/SAFETY BRIEFING

- COLLECT SACD SAMPLES TODAY
- SPOKE WITH R. TURCHE @ B2713, PLAN TO DO SAMPLE LOCATIONS NEXT TO BLDG/HIGH TRAFFIC AREAS AFTER 1700 HR

1045 SACD SAMPLES COLLECTED:
SACD SS001-005 0002 CoC#0353
- SACD 3 — vegetative mat in "red stained soil" area
- SACD 5 — used pickax to 0-2'

1300 SWMU28 SAMPLES
CoC# ED00000163-6
28 SB04-05 0002 AND 0204 INTERVALS
28 SB 06-10 0002

1800 SWMU28 "AFTER HOURS"
28SB 01-03 0002 AND 0204 INTERVALS
28SB24 [redacted] through 26 0204
CoC# ED00000163-7

06/29/2011 SWMU28

HIGH 84°F — SUNNY

ONSITE: FLOYD/SMITH/LOSEKAMP
BORTH/CAUDILL

0815 OPS/SAFETY BRIEF

- RESAMPLE LOCATIONS

28SB 21 SO 0204
22 0406
23 0204
SS 35 0002 → 28FD(SS35 0002)
SB 35 0204 → 28FD062911-01
SS 36 0002
SB 36 0406
SS 37 0002
SB 37 0204
38 0204
39 0204
40 0204

TURBIDITY METER — LaMOTTE MODEL # 2020e
PN-26858 SN-ME12983
ZERO: -0.09 TEN: 10.29 ONE: 1.01

YSI PROFESSIONAL PLUS # 09J101532
DO = 100.1% @ 760 mm Hg (8.97 mg/L)
PROBE # 09J100946
pH = 7.02/3.97/10.02
specific conductance = 1001

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NAS CRANE OGTSL (SWMU 34)
Project No.: 112G03588

Sample ID No.: OGTSLSS0060002
Sample Location: SS006
Sampled By: K. LOSEKAMP
C.O.C. No.: 0352

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 06/27/2011 Time: 1130 Method: SOIL TROWEL Monitor Reading (ppm): NA	0" TO 6"	TAN TO LIGHT BROWN	DRY GRAVEL, SOME SAND (GW)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of___

Project Site Name: NAS CRANE OGTSL (SWMU 34)
Project No.: 112G03588

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: OGTSLSS0070002
Sample Location: SS007
Sampled By: K. LOSEKAMP
C.O.C. No.: 0352

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 06/27/2011 Time: 1130 Method: SOIL TROWEL Monitor Reading (ppm): NA	0" TO 6"	TAN TO LIGHT BROWN	DRY GRAVEL, SOME SAND (GW)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other

OBSERVATIONS / NOTES:

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NAS CRANE OGTSL (SWMU 34)
Project No.: 112G03588

Sample ID No.: OGTSLSS0008000 2
Sample Location: SS008
Sampled By: K. LOSEKAMP
C.O.C. No.: 0352

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 06/27/2011 Time: 1130 Method: SOIL TROWEL Monitor Reading (ppm): NA	0" TO 6"	TAN TO LIGHT BROWN	DRY GRAVEL, SOME SAND (GW)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date:				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other

OBSERVATIONS / NOTES:

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NAS CRANE OGTSL (SWMU 34)
Project No.: 112G03588

Sample ID No.: OGTSLSS009 0002
Sample Location: SS009
Sampled By: K. LOSEKAMP
C.O.C. No.: 0352

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 06/27/2011 Time: 1130 Method: SOIL TROWEL Monitor Reading (ppm): NA	0' TO 2'	TAN TO LIGHT BROWN	DRY GRAVEL, SOME SAND (GW)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NAS CRANE OGTSL (SWMU 34)
Project No.: 112G03588

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: OGTSLSS010 0002
Sample Location: SS010
Sampled By: K. LOSEKAMP
C.O.C. No.: 0352

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 06/27/2011 Time: 1130 Method: SOIL TROWEL Monitor Reading (ppm): NA	0' TO 2'	TAN TO LIGHT BROWN	DRY GRAVEL, SOME SAND (GW)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NAS CRANE OGTSL (SWMU 34)
Project No.: 112G03580

Sample ID No.: OGTSLSS011 0002
Sample Location: SS011
Sampled By: K. LOSEKAMP
C.O.C. No.: 0352

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 06/27/2011 Time: 1130 Method: SOIL TROWEL Monitor Reading (ppm): NA	0" TO 6"	TAN TO LIGHT BROWN	DRY GRAVEL, SOME SAND (GW)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date:				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of___

Project Site Name: NAS CRANE OGTSL (SWMU 34)
Project No.: 112G03588

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: OGTSLSS0120002
Sample Location: SS012
Sampled By: K. LOSEKAMP
C.O.C. No.: 0352

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 06/27/2011 Time: 1130 Method: SOIL TROWEL Monitor Reading (ppm): NA	0' TO 2'	TAN TO LIGHT BROWN	DRY GRAVEL, SOME SAND (GW)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NAS CRANE, OGTSL (SWMU 34)
Project No.: 112G03588

Sample ID No.: OGTSLSS0130002
Sample Location: SS013
Sampled By: K. LOSEKAMP
C.O.C. No.: 0352

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 06/27/2011 Time: 1130 Method: SOIL TROWEL Monitor Reading (ppm): NA	0" TO 6"	TAN TO LIGHT BROWN	DRY GRAVEL, SOME SAND (GW)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER № 0352 | PAGE 1 OF 1

PROJECT NO:	FACILITY: CRANE – OGTSL	PROJECT MANAGER: RALPH BASINSKI	PHONE NUMBER: (412) 921-7090	LABORATORY NAME AND CONTACT: EMPIRICAL / BRIAN RICHARD
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER: JOHN T. FLOYD	PHONE NUMBER: (502) 693-1417	ADDRESS: 621 MAINSTREAM DRIVE SUITE 270
		CARRIER/WAYBILL NUMBER		CITY, STATE: NASHVILLE, TN 37228

STANDARD TAT ☐
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G
PRESERVATIVE USED: ICE ICE ICE

DATE YEAR 2011	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	PCB's	METALS	PAH's							COMMENTS 1106261	
6/27	1130	OGTSLSS006 0002	SB006	0	2	SO	G	3	X	X	X							JM	-01
		" 007 "	" 7																-02
		" 008 "	" 8																-03
		" 009 "	" 9																-04
		" 010 "	" 10																-05
		" 011 "	" 11																-06
		" 012 "	" 12																-07
		" 013 "	" 13																-08

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	6/27/11	17:00	1. RECEIVED BY		
2. RELINQUISHED BY			2. RECEIVED BY		
3. RELINQUISHED BY			3. RECEIVED BY 2.5°C	6-28-11	09:00

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

FORM NO. TINUS

Appendix B

Data Validation Report

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**R. BASINSKI**	**DATE:**	**AUGUST 16, 2011**
FROM:	**TERRI L. SOLOMON**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –SELECT METALS**
CTO F276 NSA CRANE
SAMPLE DELIVERY GROUP (SDG) – 1106261

SAMPLES: 8/Soils/

OGTSLSS0060002	OGTSLSS0070002	OGTSLSS0080002
OGTSLSS0090002	OGTSLSS0100002	OGTSLSS0110002
OGTSLSS0120002	OGTSLSS0130002	

Overview

The sample set for NSA Crane, CTO F276, SDG 1106261 consists of eight (8) soil environmental samples. No field duplicate pairs were included within this data package.

All samples were analyzed for select metals including aluminum, antimony, arsenic, barium, cadmium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, vanadium and zinc. The samples were collected on June 27, 2011 and analyzed by Empirical Laboratories under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Metals analyses were conducted using SW-846 methods 6010C.

These data were evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Initial and Continuing Calibrations
• Laboratory Method / Preparation Blank Analyses
• ICP Interference Results
• Laboratory Control Sample Recoveries
* • Detection Limits
* • Analyte Quantitation

* - All quality control criteria were met for this parameter.

ICP Interference Results

The interfering analytes aluminum and iron were present in sample OGTSLSS0090002 at concentrations comparable to the concentrations of aluminum and iron in the interference check sample (ICS) solution. Copper, lead, manganese, nickel, selenium and zinc were present in the ICS solution at concentrations that exceeded the absolute value of the instrument detection limit (IDL). Interference effects exist for selenium in the affected sample. The nondetected result reported for selenium was qualified as estimated, "UJ".

The interfering analyte iron was present in sample OGTSLSS0070002 at a concentration comparable to the concentration of iron in the interference check sample (ICS) solution. Copper,

lead, nickel, selenium and zinc were present in the ICS solution at concentrations that exceeded the absolute value of the instrument detection limit (IDL). Interference effects exist for selenium in the affected sample. The nondetected result reported for selenium was qualified as estimated, "UJ".

The interfering analyte iron was present in samples OGTSLSS0100002 and OGTSLSS0110002 at a concentration comparable to the concentration of iron in the interference check sample (ICS) solution. Copper, manganese, nickel and selenium were present in the ICS solution at concentrations that exceeded the absolute value of the instrument detection limit (IDL). Interference effects exist for selenium in the affected samples. The nondetected results reported for selenium were qualified as estimated, "UJ".

Laboratory Control Sample Recoveries

The laboratory control sample recovery for iron was > 120% quality control limit affecting all samples. The positive results reported for iron were qualified as estimated, "J".

Notes

Positive results reported greater than the detection limit but below the limit of quantitation were qualified as estimated, "J".

The nondetected results are reported to the limit of detection.

The laboratory did not analyze matrix spike / matrix spike duplicate, laboratory duplicate or ICP serial dilution samples.

The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum[1]	4.98 mg/kg	24.9 mg/kg
Iron	53.0 ug/L	13.25 mg/kg

[1] Maximum concentration present in a preparation blank.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. No validation actions were warranted as all sample results were greater than the action level.

Executive Summary

Laboratory Performance: The laboratory control sample recovery for iron was > 120% quality control limit.

Other Factors Affecting Data Quality: The interfering analytes aluminum and/or iron were present in several samples. Positive results reported greater than the detection limit but below the limit of quantitation were qualified as estimated.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", October 2004, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", April 2009.

The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Terri L. Solomon
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS-GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O - Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DOT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 02126	NSAMPLE	OGTSLSS0060002			OGTSLSS0070002			OGTSLSS0080002			OGTSLSS0090002		
SDG: 1106261	LAB_ID	1106261-01RE1			1106261-02			1106261-03RE1			1106261-04		
FRACTION: M	SAMP_DATE	6/27/2011			6/27/2011			6/27/2011			6/27/2011		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	67.2			72.6			68.7			84.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		1960			11900			5070			19700		
ANTIMONY		5.14			0.52	J	P	5.79	U		0.481	U	
ARSENIC		1.22	J	P	9.19			5.28	J	P	12.9		
BARIUM		68.5			92.4			92.9			84.5		
CADMIUM		5.8			1.2			8.42			0.12	U	
CHROMIUM		14.1			41.3			25.5			22.1		
COBALT		2.3	J	P	10.9			4.46	J	P	5.61		
COPPER		50.8			19.3			39.1			18.6		
IRON		4420	J	E	19700	J	E	18600	J	E	28400	J	E
LEAD		42.5			602			63.2			14.6		
MANGANESE		197			891			264			120		
NICKEL		10.9			12.7			19.7			15.8		
SELENIUM		1.91	U		0.338	UJ	K	3.62	U		0.301	UJ	K
VANADIUM		6.78			27.8			13.9			37.5		
ZINC		270			158			236			55.2		

PROJ_NO: 02126	NSAMPLE	OGTSLSS0100002			OGTSLSS0110002			OGTSLSS0120002			OGTSLSS0130002		
SDG: 1106261	LAB_ID	1106261-05			1106261-06			1106261-07RE1			1106261-08RE1		
FRACTION: M	SAMP_DATE	6/27/2011			6/27/2011			6/27/2011			6/27/2011		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	86.5			81.7			87.9			83.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		11300			15700			2480			1520		
ANTIMONY		0.673			0.579	J	P	2.96	J	P	26.8		
ARSENIC		8.26			10			3.45	U		3.21	J	P
BARIUM		59.8			81.9			25.9			16.3	J	P
CADMIUM		1.95			4.17			4.66			8.14		
CHROMIUM		23			29.8			34.6			63		
COBALT		3.89			7.98			3.67	J	P	3.89	J	P
COPPER		17.7			26.7			46.5			95.9		
IRON		17800	J	E	26000	J	E	7630	J	E	18600	J	E
LEAD		60.3			36			231			371		
MANGANESE		120			306			181			184		
NICKEL		12.7			27.3			30			157		
SELENIUM		0.29	UJ	K	0.306	UJ	K	2.87	U		2.88	U	
VANADIUM		26.6			31.9			9.55			9.52		
ZINC		337			161			1040			612		

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**R. BASINSKI**	**DATE:**	**SEPTEMBER 8, 2011**
FROM:	**EDWARD SEDLMYER**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION: PAH / DRO / EXP / SELECT METALS**
NSWC CRANE, CTO F276
SDG 1106264

SAMPLES: 5 / Soil / PAH / DRO / EXP

SACDSS0010002 SACDSS0020002 SACDSS0030002
SACDSS0040002 SACDSS0050002

OVERVIEW

The sample set for NSWC Crane, CTO F276, SDG 1106264 consisted of five (5) soil samples. All samples were analyzed for polynuclear aromatic hydrocarbons (PAHs), diesel range organics (DRO), and explosives (EXP).

The samples were collected by TetraTech NUS on June 28, 2011 and analyzed by Empirical Laboratories, LLC. All analyses were conducted using USEPA SW-846 Methods 8270C, 8015B, and 8330B analytical and reporting protocols.

The data contained in this SDG were fully validated with regard to the following parameters:

* • Data Completeness
* • Holding Times
* • GC/MS Tuning
• Initial and Continuing Calibration
• Laboratory Blank Analyses
• Surrogate Recoveries
* • Blank Spike/Blank Spike Duplicate Results
* • Matrix Spike/Matrix Spike Duplicate Results
* • Internal Standard Recoveries
* • Compound Quantitation
• Compound Identification
* • Detection Limits

The symbol (*) indicates that quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

PAH

The following compounds were detected in the method blanks at the maximum concentrations indicated below:

Compound	Concentration	Action Level
Phenanthrene[1]	2.04 ug.kg	10.2 ug/kg
Benzo(g,h,i)perylene[2]	9.2 ug/kg	46 ug/kg
Dibenz(a,h)anthracene[2]	7.03 ug/kg	35.15 ug/kg
Indeno(1,2,3-cd)pyrene[2]	6.3 ug/kg	31.5 ug/kg

1 – Method blank 1F30019 and associated with sample SACDSS0030002.
2 – Method blank 1G07013 and associated with samples SACDSS0010002, SACDSS0020002, SACDSS0040002, and SACDSS0050002.

An action level of 5X the maximum contaminant concentration was established for phenanthrene, benzo(g,h,i)perylene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene to evaluate laboratory contamination. Dilution factors, percent solids, and sample aliquots were taken into consideration during the application of all action levels. Positive results less than the action level were qualified (U) due to blank contamination.

DRO

No qualification of the data was necessary.

EXP

The CCV1, CCV2, and CCV4 percent differences (%Ds) were greater than the 20% quality control limit for 2,4,6-trinitrotoluene on instrument GL-HPLC1 affecting all samples. The nondetected 2,4,6-trinitrotoluene results were qualified as estimated (UJ) for all samples.

The surrogate percent recovery for 1-chloro-3-nitrobenzene was less than the quality control limit for sample SACDSS0020002 on the secondary detector. All positive results were reported from the secondary detector and the results have been qualified as estimated. No action was taken on the nondetected results because the primary detector had an acceptable surrogate recovery.

The percent difference between detectors exceeded 40% for the following compounds. The positive results were reported as estimated (J), for the compounds below:

Sample	Compound	%D
SACDSS0020002	2-Nitrotoluene	99.0%
	4-Nitrotoluene	69.0%
SACDSS0050002	Nitrobenzene	178%

ADDITIONAL COMMENTS

Positive results less than the limit of quantitation (LOQ) but greater than the method detection limit (MDL) were qualified as estimated, (J), due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Laboratory blank contamination in the PAH fraction resulted in qualification

of the data. Continuing calibration %D noncompliances resulted in the qualification of data for the EXP fraction. Surrogate recovery noncompliances resulted in the qualification of EXP data. Percent difference between columns noncompliance resulted in the qualification of EXP data.

Other factors affecting data quality: Positive results less than the limit of quantitation (LOQ) but greater than the method detection limit (MDL) were qualified as estimated, (J), due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October 1999) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009). The text of this report has been formulated to address only those problem areas affecting data quality.

Edward Sedlmyer
Tetra Tech NUS
Edward Sedlmyer
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$ / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 02126	NSAMPLE	SACDSS0010002			SACDSS0020002			SACDSS0030002			SACDSS0040002		
SDG: 1106264	LAB_ID	1106264-01			1106264-02			1106264-03			1106264-04		
FRACTION: EXP	SAMP_DATE	6/28/2011			6/28/2011			6/28/2011			6/28/2011		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	79.8			50.4			83.3			72.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,3,5-TRINITROBENZENE		0.0755	U		0.0748	U		0.0777	U		0.0784	U	
1,3-DINITROBENZENE		0.0755	U		0.0748	U		0.0777	U		0.0784	U	
2,4,6-TRINITROTOLUENE		0.0755	UJ	C	0.748	UJ	C	0.0777	UJ	C	0.0784	UJ	C
2,4-DINITROTOLUENE		0.0755	U		0.0748	U		0.0777	U		0.0784	U	
2,6-DINITROTOLUENE		0.0755	U		0.0748	U		0.0777	U		0.0784	U	
2-AMINO-4,6-DINITROTOLUENE		0.0755	U		0.0748	U		0.0777	U		0.0784	U	
2-NITROTOLUENE		0.0755	U		0.13	J	RU	0.0777	U		0.0784	U	
3,5-DINITROANILINE		0.0755	U		0.0748	U		0.0777	U		0.0784	U	
3-NITROTOLUENE		0.0755	U		0.0748	U		0.0777	U		0.0784	U	
4-AMINO-2,6-DINITROTOLUENE		0.0755	U		0.0256	J	PR	0.0777	U		0.0784	U	
4-NITROTOLUENE		0.0755	U		0.0569	J	PRU	0.0777	U		0.0784	U	
HMX		0.0755	U		0.0748	U		0.0777	U		0.0784	U	
NITROBENZENE		0.0755	U		0.0748	U		0.0777	U		0.0784	U	
NITROGLYCERIN		0.377	U		0.374	U		0.388	U		0.392	U	
PETN		0.377	U		0.374	U		0.388	U		0.392	U	
RDX		0.0755	U		0.0748	U		0.0777	U		0.0784	U	
TETRYL		0.0755	U		0.0748	U		0.0777	U		0.0784	U	

PROJ_NO: 02126	NSAMPLE	SACDSS0050002		
SDG: 1106264	LAB_ID	1106264-05		
FRACTION: EXP	SAMP_DATE	6/28/2011		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	81.9		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
1,3,5-TRINITROBENZENE		0.0755	U	
1,3-DINITROBENZENE		0.0755	U	
2,4,6-TRINITROTOLUENE		0.0755	UJ	C
2,4-DINITROTOLUENE		0.0755	U	
2,6-DINITROTOLUENE		0.0755	U	
2-AMINO-4,6-DINITROTOLUENE		0.0755	U	
2-NITROTOLUENE		0.0755	U	
3,5-DINITROANILINE		0.0755	U	
3-NITROTOLUENE		0.0755	U	
4-AMINO-2,6-DINITROTOLUENE		0.0755	U	
4-NITROTOLUENE		0.0755	U	
HMX		0.0755	U	
NITROBENZENE		0.029	J	PU
NITROGLYCERIN		0.377	U	
PETN		0.377	U	
RDX		0.0755	U	
TETRYL		0.0755	U	

PROJ_NO: 02126	NSAMPLE	SACDSS0010002			SACDSS0020002			SACDSS0030002			SACDSS0040002		
SDG: 1106264	LAB_ID	1106264-01			1106264-02			1106264-03			1106264-04		
FRACTION: PAH	SAMP_DATE	6/28/2011			6/28/2011			6/28/2011			6/28/2011		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	79.8			50.4			83.3			72.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1-METHYLNAPHTHALENE		7.93	U		7.56	J	P	7.75	U		9.03	U	
2-METHYLNAPHTHALENE		7.93	U		8.2	J	P	7.75	U		9.03	U	
ACENAPHTHENE		7.93	U		7.36	J	P	7.75	U		9.03	U	
ACENAPHTHYLENE		7.93	U		5.45	J	P	7.75	U		9.03	U	
ANTHRACENE		7.93	U		6.38	J	P	7.75	U		9.03	U	
BENZO(A)ANTHRACENE		7.93	U		5.16	J	P	7.75	U		3.32	J	P
BENZO(A)PYRENE		7.93	U		11.6	J	P	7.75	U		9.03	U	
BENZO(B)FLUORANTHENE		7.93	U		8.16	J	P	7.75	U		4.34	J	P
BENZO(G,H,I)PERYLENE		7.93	U		35.2	U	A	7.75	U		15.7	U	A
BENZO(K)FLUORANTHENE		7.93	U		8.23	J	P	7.75	U		4.32	J	P
CHRYSENE		7.93	U		7.1	J	P	7.75	U		5.99	J	P
DIBENZO(A,H)ANTHRACENE		7.93	U		41.3			7.75	U		13.6	U	A
FLUORANTHENE		3.52	J	P	7.86	J	P	3.15	J	P	3.98	J	P
FLUORENE		1.99	J	P	7	J	P	7.75	U		9.03	U	
INDENO(1,2,3-CD)PYRENE		7.93	U		34.4			7.75	U		14.3	U	A
NAPHTHALENE		2.48	J	P	12.6	J	P	7.75	U		9.03	U	
PHENANTHRENE		7.6	J	P	13.6			7	U	A	7.91	J	P
PYRENE		2.62	J	P	7.28	J	P	7.75	U		3.22	J	P

PROJ_NO: 02126	NSAMPLE	SACDSS0050002		
SDG: 1106264	LAB_ID	1106264-05		
FRACTION: PAH	SAMP_DATE	6/28/2011		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	81.9		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
1-METHYLNAPHTHALENE		8.04	U	
2-METHYLNAPHTHALENE		2.07	J	P
ACENAPHTHENE		8.04	U	
ACENAPHTHYLENE		4.06	J	P
ANTHRACENE		6.04	J	P
BENZO(A)ANTHRACENE		10.1		
BENZO(A)PYRENE		20.3		
BENZO(B)FLUORANTHENE		53.8		
BENZO(G,H,I)PERYLENE		25.7	U	A
BENZO(K)FLUORANTHENE		16.7		
CHRYSENE		29.7		
DIBENZO(A,H)ANTHRACENE		10.2	U	A
FLUORANTHENE		15.5		
FLUORENE		2.78	J	P
INDENO(1,2,3-CD)PYRENE		18.9	U	A
NAPHTHALENE		4.55	J	P
PHENANTHRENE		9.23		
PYRENE		16.5		

PROJ_NO: 02126	NSAMPLE	SACDSS0010002			SACDSS0020002			SACDSS0030002			SACDSS0040002		
SDG: 1106264	LAB_ID	1106264-01			1106264-02			1106264-03			1106264-04		
FRACTION: PET	SAMP_DATE	6/28/2011			6/28/2011			6/28/2011			6/28/2011		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	79.8			50.4			83.3			72.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		10.1			39			10.4			27.8		

PROJ_NO: 02126	NSAMPLE	SACDSS0050002		
SDG: 1106264	LAB_ID	1106264-05		
FRACTION: PET	SAMP_DATE	6/28/2011		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	81.9		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
DIESEL RANGE ORGANICS		23.8		

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**R. BASINSKI**	**DATE:**	**AUGUST 16, 2011**
FROM:	**MICHELLE L. ALLEN**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION - PAH/PCB**
NSA (NAVAL SUPPORT ACTIVITY) CRANE, CTO F276
SDG 1106261

SAMPLES: 8/Soil/PAH/PCB

OGTSLSS0060002	OGTSLSS0070002	OGTSLSS0080002
OGTSLSS0090002	OGTSLSS0100002	OGTSLSS0110002
OGTSLSS0120002	OGTSLSS0130002	

Overview

The sample set for NSA Crane, SDG 1106261 consisted of eight (8) soil environmental samples. All eight (8) soil samples were analyzed for polycyclic aromatic hydrocarbons (PAH) and polychlorinated biphenyls (PCB). No field duplicate sample pairs were included in the sample delivery group (SDG).

The samples were collected by Tetra Tech on June 27, 2011 and analyzed by Empirical Laboratories, LLC. All analyses were conducted in accordance with SW-846 Methods 8270C and 8082A analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters:

* • Data Completeness
* • Holding Times/Sample Preservation
* • GC System Performance
• Initial and Continuing Calibration Results
• Laboratory Method Blank Results
• Surrogate Spike Percent Recoveries
* • Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
* • Detection Limits
* • Compound Identification
* • Analyte Quantitation

* - All quality control criteria were met for this parameter.

Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

PAH

The continuing calibration performed on instrument MSBNA-4 on 07/02/11 @ 07:55 had Percent Differences (%Ds) for benzo(a)anthracene and chrysene greater than the 20% quality control limit. All samples were affected. The positive and non-detected results reported for these compounds in the affected samples were qualified as estimated, (J) and (UJ), respectively.

The following PAH contaminant was detected in the laboratory method blank at the following maximum concentration:

Compound	Maximum Concentration (µg/Kg)	Action Level (µg/Kg)
Phenanthrene [1]	2.51	12.55

1 Maximum concentration detected in the laboratory method blank (batch #1F29021) affecting all samples.

An action level of 5X the maximum concentration for phenanthrene was used to evaluate the affected samples for blank contamination. Percent moisture, sample aliquot, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. The positive results reported for phenanthrene below the established action level were qualified as non-detected, (U), due to laboratory method blank contamination.

Sample OGTSLSS0070002 had Percent Recoveries (%Rs) for the surrogate spike compounds, 2-fluorobiphenyl and terphenyl-d14, above the upper quality control limits. As stated in the laboratory's case narrative, the sample was spiked 2X with the surrogates. The sample was not re-extracted/reanalyzed by the laboratory. The positive results reported for the target compounds in this sample were qualified as estimated, (J).

PCB

The %Rs for the surrogate spike compound, tetrachloro-m-xylene, were below the lower quality control limit on both GC columns in samples OGTSLSS0070002 and OGTSLSS0110002. The positive and non-detected PCB results were reported in these samples were qualified as estimated, (J) and (UJ), respectively.

The %Rs for the surrogate spike compound, decachlorobiphenyl, were above the upper quality control limit on both GC columns in samples OGTSLSS0080002 and OGTSLSS0100002. The positive results reported for Aroclor 1260 in these samples were qualified as estimated, (J). Non-detected results were not affected.

Notes

Positive results reported above the Method Detection Limit (MDL) and below the Limit of Quantitation were qualified as estimated, (J). Non-detected results were reported to the Limit of Detection (LOD).

The positive PCB results were reported from GC column 1.

Executive Summary

Laboratory Performance: Continuing calibration %Ds were greater than the quality control limit for two PAH compounds. Phenanthrene was detected in the laboratory method blank.

Other Factors Affecting Data Quality: Some surrogate spike %Rs were outside the quality control limits in the PAH and PCB fractions.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (10/99), SW-846 Methods 8270C and 8082A analytical and reporting protocols, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Michelle L. Allen
Chemist/Data Validator

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$ / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 02126	NSAMPLE	OGTSLSS0060002			OGTSLSS0070002			OGTSLSS0080002			OGTSLSS0090002		
SDG: 1106261	LAB_ID	1106261-01			1106261-02			1106261-03			1106261-04		
FRACTION: PAH	SAMP_DATE	6/27/2011			6/27/2011			6/27/2011			6/27/2011		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	67.2			72.6			68.7			84.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1-METHYLNAPHTHALENE		3.54	J	P	3.02	J	PR	5.42	J	P	3.7	U	
2-METHYLNAPHTHALENE		4.01	J	P	2.32	J	PR	5.44	J	P	1.99	J	P
ACENAPHTHENE		6.56	J	P	3.58	J	PR	22.3			3.02	J	P
ACENAPHTHYLENE		8.47	J	P	4.19	J	PR	9.84			3.7	U	
ANTHRACENE		9.78			4.54	J	PR	47.1			3.7	U	
BENZO(A)ANTHRACENE		41.5	J	C	7.72	J	CPR	263	J	C	3.7	UJ	C
BENZO(A)PYRENE		65.1			12.7	J	R	356			3.7	U	
BENZO(B)FLUORANTHENE		127			28.2	J	R	534			2.95	J	P
BENZO(G,H,I)PERYLENE		65.9			13.4	J	R	268			3.7	U	
BENZO(K)FLUORANTHENE		51.8			12.8	J	R	161			2.49	J	P
CHRYSENE		67.2	J	C	14.2	J	CR	346	J	C	3.7	UJ	C
DIBENZO(A,H)ANTHRACENE		4.83	U		4.5	U		66.8			3.7	U	
FLUORANTHENE		139			32.6	J	R	726			3.53	J	P
FLUORENE		7.25	J	P	3.2	J	PR	20.1			3.7	U	
INDENO(1,2,3-CD)PYRENE		52.5			11.2	J	R	252			3.7	U	
NAPHTHALENE		5.96	J	P	3.51	J	PR	10.9			3.9	J	P
PHENANTHRENE		48			14.9	U	A	257			7.26	U	A
PYRENE		122			28.3	J	R	594			2.7	J	P

PROJ_NO: 02126	NSAMPLE	OGTSLSS0100002			OGTSLSS0110002			OGTSLSS0120002			OGTSLSS0130002		
SDG: 1106261	LAB_ID	1106261-05			1106261-06			1106261-07			1106261-08		
FRACTION: PAH	SAMP_DATE	6/27/2011			6/27/2011			6/27/2011			6/27/2011		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.5			81.7			87.9			83.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1-METHYLNAPHTHALENE		2.24	J	P	3.87	U		3.67	U		2.84	J	P
2-METHYLNAPHTHALENE		2.07	J	P	3.87	U		2.99	J	P	3.73	J	P
ACENAPHTHENE		2.84	J	P	2.48	J	P	2.99	J	P	5.4	J	P
ACENAPHTHYLENE		26.2			2.07	J	P	38.7			42.9		
ANTHRACENE		15			3.47	J	P	27.2			39		
BENZO(A)ANTHRACENE		62	J	C	5.91	J	CP	169	J	C	130	J	C
BENZO(A)PYRENE		96.1			7.48	J	P	185			144		
BENZO(B)FLUORANTHENE		267			16.7			430			343		
BENZO(G,H,I)PERYLENE		92.2			9.78			172			178		
BENZO(K)FLUORANTHENE		95.5			4.05	J	P	191			100		
CHRYSENE		180	J	C	5.54	J	CP	274	J	C	204	J	C
DIBENZO(A,H)ANTHRACENE		19.9			3.87	U		49.5			38.6		
FLUORANTHENE		300			9.73			392			283		
FLUORENE		3.76	J	P	2.67	J	P	3.81	J	P	5.49	J	P
INDENO(1,2,3-CD)PYRENE		80.3			7.63	J	P	167			154		
NAPHTHALENE		6.42	J	P	3.07	J	P	6.62	J	P	10.7		
PHENANTHRENE		43.8			7.76		A	56.5			79		
PYRENE		251			9.36			345			242		

PROJ_NO: 02126	NSAMPLE	OGTSLSS0060002			OGTSLSS0070002			OGTSLSS0080002			OGTSLSS0090002		
SDG: 1106261	LAB_ID	1106261-01			1106261-02			1106261-03			1106261-04		
FRACTION: PCB	SAMP_DATE	6/27/2011			6/27/2011			6/27/2011			6/27/2011		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	67.2			72.6			68.7			84.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
AROCLOR-1016		12.2	U		11.2	UJ	R	11.7	U		9.69	U	
AROCLOR-1221		12.2	U		11.2	UJ	R	11.7	U		9.69	U	
AROCLOR-1232		12.2	U		11.2	UJ	R	11.7	U		9.69	U	
AROCLOR-1242		12.2	U		11.2	UJ	R	11.7	U		9.69	U	
AROCLOR-1248		12.2	U		11.2	UJ	R	11.7	U		9.69	U	
AROCLOR-1254		12.2	U		11.2	UJ	R	11.7	U		9.69	U	
AROCLOR-1260		40.8			90.6	J	R	102	J	R	9.69	U	
AROCLOR-1262		12.2	U		11.2	UJ	R	11.7	U		9.69	U	
AROCLOR-1268		12.2	U		11.2	UJ	R	11.7	U		9.69	U	

PROJ_NO: 02126	NSAMPLE	OGTSLSS0100002			OGTSLSS0110002			OGTSLSS0120002			OGTSLSS0130002		
SDG: 1106261	LAB_ID	1106261-05			1106261-06			1106261-07			1106261-08		
FRACTION: PCB	SAMP_DATE	6/27/2011			6/27/2011			6/27/2011			6/27/2011		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.5			81.7			87.9			83.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
AROCLOR-1016		9.26	U		10.1	UJ	R	9.35	U		9.83	U	
AROCLOR-1221		9.26	U		10.1	UJ	R	9.35	U		9.83	U	
AROCLOR-1232		9.26	U		10.1	UJ	R	9.35	U		9.83	U	
AROCLOR-1242		9.26	U		10.1	UJ	R	9.35	U		9.83	U	
AROCLOR-1248		9.26	U		10.1	UJ	R	9.35	U		9.83	U	
AROCLOR-1254		9.26	U		10.1	UJ	R	9.35	U		9.83	U	
AROCLOR-1260		34.3	J	R	104	J	R	45			327		
AROCLOR-1262		9.26	U		10.1	UJ	R	9.35	U		9.83	U	
AROCLOR-1268		9.26	U		10.1	UJ	R	9.35	U		9.83	U	