EXCAVATING EFFLUENT POND

EFFLUENT POND EXCAVATION

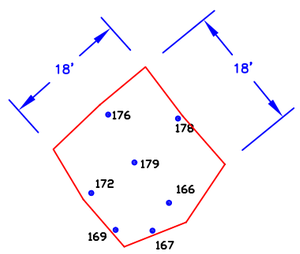
EFFLUENT POND WITH BIOMAT

EXCAVATING SEWAGE POND

SEWAGE POND EXCAVATION

SEWAGE POND WITH BIOMAT

LAUNDRY EFFLUENT POND



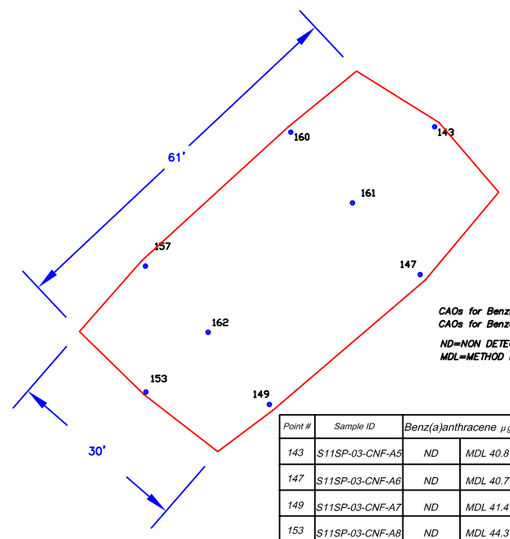

CAOs for Bis(2-Ethylhexyl)phthalate =78,000 µg/kg

ND=NON DETECT

MDL=METHOD DETECTION LIMIT

| Point # | Sample ID | bis(2-Ethylhexyl)phthalate µg/kg | |
|---|---|---|---|
| 166 | S11LP-03-CNF-A4 | 585 | MDL 67.8 |
| 167 | S11LP-03-CNF-A7 | 2530 | MDL 322 |
| 169 | S11LP-03-CNF-A6 | ND | MDL 68.2 |
| 172 | S11LP-03-CNF-A5 | 124 | MDL 67.4 |
| 176 | S11LP-03-CNF-A2 | 472 | MDL 68.3 |
| 178 | S11LP-03-CNF-A3 | 136 | MDL 62.9 |
| 179 | S11LP-03-CNF-A1 | 116 | MDL 63 |

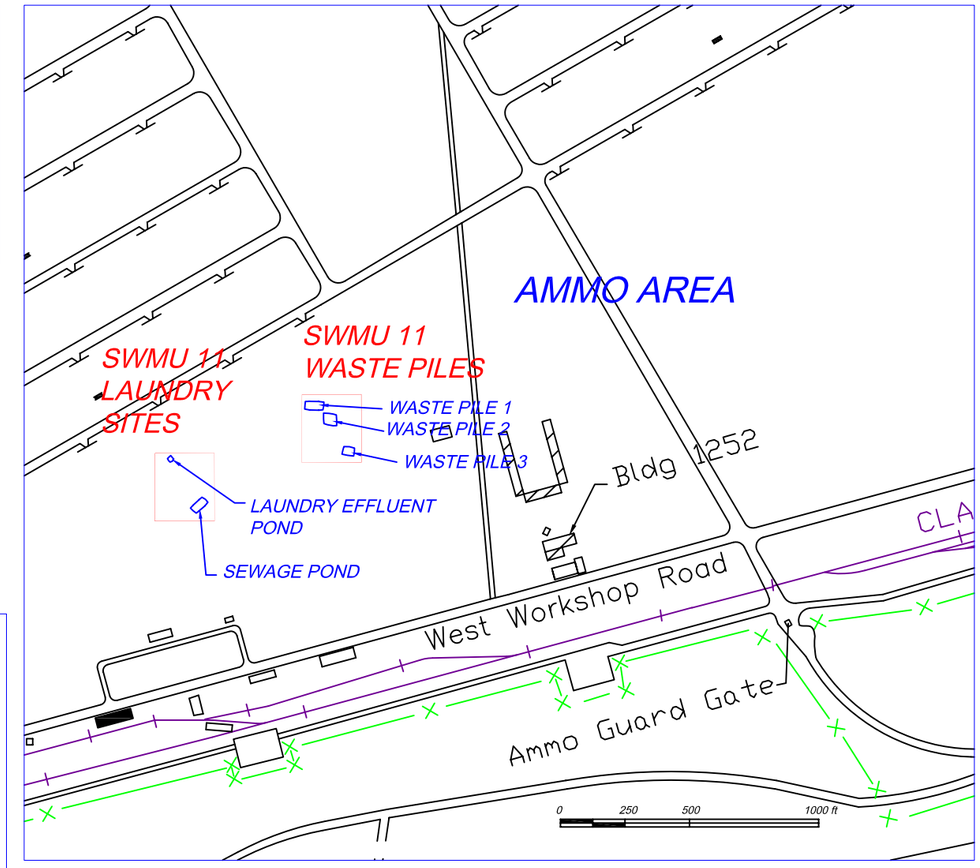
SEWAGE POND




CAOs for Benz(a)anthracene=2,200 µg/kg
CAOs for Benzo(b)fluranthene=2,200 µg/kg

ND=NON DETECT
MDL=METHOD DETECTION LIMIT

| Point # | Sample ID | Benz(a)anthracene µg/kg | | Benzo(b)fluranthene µg/kg | |
|---|---|---|---|---|---|
| 143 | S11SP-03-CNF-A5 | ND | MDL 40.8 | ND | MDL 81.6 |
| 147 | S11SP-03-CNF-A6 | ND | MDL 40.7 | ND | MDL 81.4 |
| 149 | S11SP-03-CNF-A7 | ND | MDL 41.4 | ND | MDL 82.8 |
| 153 | S11SP-03-CNF-A8 | ND | MDL 44.3 | ND | MDL 88.7 |
| 157 | S11SP-03-CNF-A3 | ND | MDL 44.3 | ND | MDL 88.7 |
| 160 | S11SP-03-CNF-A4 | ND | MDL 40.6 | ND | MDL 81.3 |
| 161 | S11SP-03-CNF-A1 | ND | MDL 42.5 | ND | MDL 85 |
| 162 | S11SP-03-CNF-A2 | ND | MDL 45.1 | ND | MDL 90.3 |




SAMPLE COORDINATES FOR SWMU-11 SEWAGE POND
UTAH STATE PLANE PROJECTION NAD 83

| POINT # | N (ft) | E (ft) |
|---|---|---|
| 143 | 7354400 | 1391045 |
| 147 | 7354376 | 1391042 |
| 149 | 7354355 | 1391018 |
| 153 | 7354357 | 1390998 |
| 157 | 7354377 | 1390999 |
| 160 | 7354399 | 1391021 |
| 161 | 7354387 | 1391031 |
| 162 | 7354366 | 1391008 |

SAMPLE COORDINATES FOR SWMU-11 LAUNDRY EFFLUENT POND
UTAH STATE PLANE PROJECTION NAD 83

| POINT # | N (ft) | E (ft) |
|---|---|---|
| 166 | 7354550 | 1390915 |
| 167 | 7354546 | 1390912 |
| 168 | 7354546 | 1390909 |
| 169 | 7354546 | 1390907 |
| 172 | 7354551 | 1390904 |
| 176 | 7354563 | 1390906 |
| 178 | 7354562 | 1390916 |
| 179 | 7354556 | 1390910 |

DESCRIPTION SWMU 11 SITE

The laundry effluent and sewage ponds received laundry and shower discharges, boiler blow-down and may have received flows from a leach field associated with a septic tank. Soil at these sites was previously found to be contaminated with polynuclear aromatic hydrocarbons above health based standards. This corrective action involved excavation and off site disposal of the contaminated soil. Sample results confirmed that the sites have been remediated to meet corrective action objectives

REVISIONS

| No. | DATE | BY | REVISION |
|---|---|---|---|
| 1 | 12-8-2003 | TF | 1 |

DRAWN BY: TF
DESIGN BY: TF
CHECKED BY: AA
DATE: 12-9-2003

CLIENT: USACE SACRAMENTO
DWG: SWMU 11 PROJECT
JOB No: 2052.004

NORTH WIND INC.
545 SHOUP SUITE 200
IDAHO FALLS, ID 83402
(208)528-8718

North Wind

SWMU 11 CORRECTIVE MEASURES
TOOELE ARMY DEPOT
LAUNDRY FACILITY

SHEET: 1 OF 2

Figure 2. SWMU 11 Laundry Ponds Excavation Boundaries and Sample Locations

TYPICAL WASTE PILE EXCAVATION

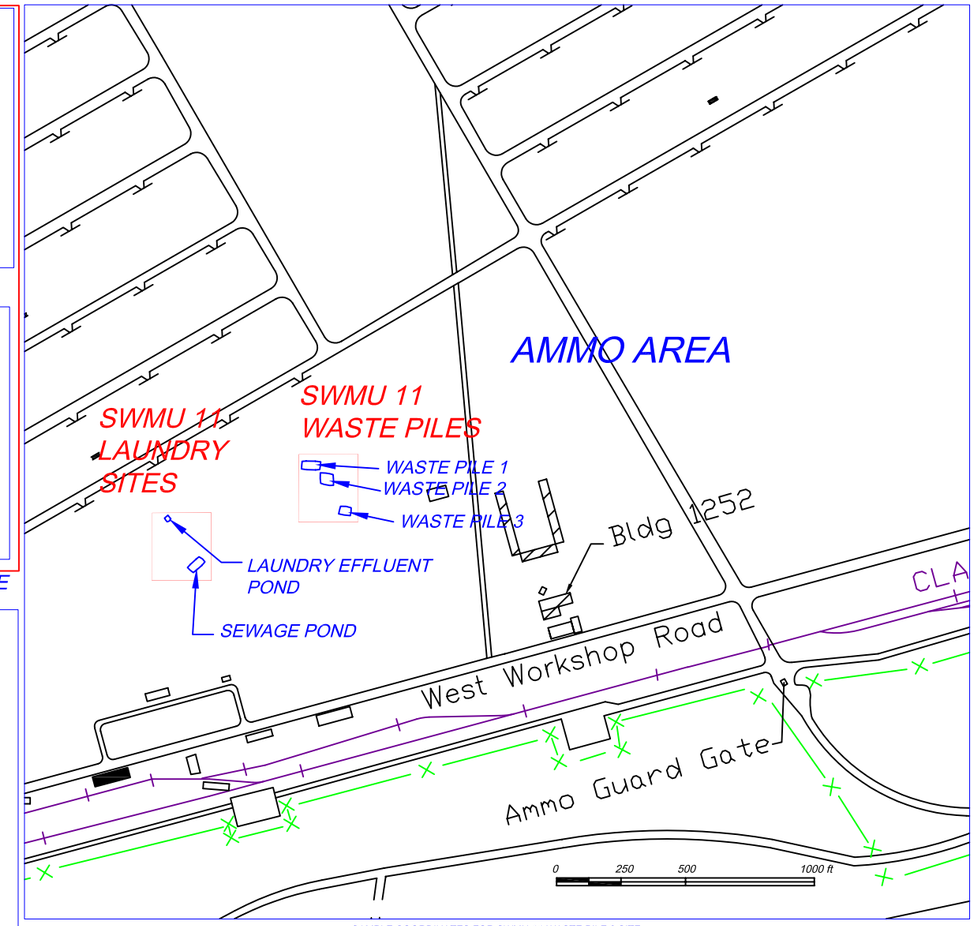
DISPOSAL OF CONTAMINATED SOIL

NEARLY COMPLETED EXCAVATION

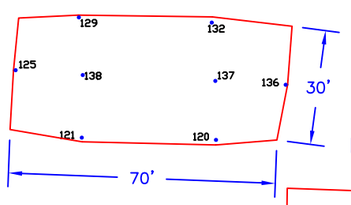
WASTE PILE EXCAVATION COMPLETED

SURVEYING LOCATION AND DEPTH

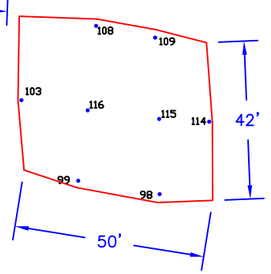
TYPICAL RECONTOURED WASTE PILE




## WASTE PILE 1




## WASTE PILE 2



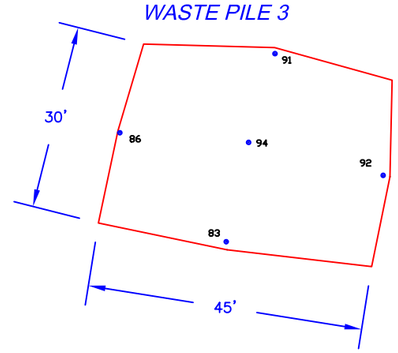

| Point # | Sample ID | Arsenic (mg/kg) | | Lead (mg/kg) | |
|---|---|---|---|---|---|
| 137 | S11WP1-03-CNF-A1 | ND | MDL 1.54 | 2.88 | MDL 1.54 |
| 138 | S11WP1-03-CNF-A2 | 1.79 | MDL 1.69 | 3.06 | MDL 1.69 |
| 129 | S11WP1-03-CNF-A3 | 3.73 | MDL 1.76 | 2.75 | MDL 1.76 |
| 132 | S11WP1-03-CNF-A4 | 2.23 | MDL 1.52 | 2.84 | MDL 1.52 |
| 136 | S11WP1-03-CNF-A5 | 2.11 | MDL 1.51 | 2.51 | MDL 1.51 |
| 120 | S11WP1-03-CNF-A6 | 2.82 | MDL 1.57 | 3.24 | MDL 1.57 |
| 121 | S11WP1-03-CNF-A7 | 1.73 | MDL 1.62 | 3.65 | MDL 1.62 |
| 125 | S11WP1-03-CNF-A8 | 3.53 | MDL 1.51 | 2.72 | MDL 1.51 |

CAOs= Arsenic 32 mg/kg, Lead 1,800 mg/kg

ND=NON DETECT
MDL=METHOD DETECTION LIMIT

| Point # | Sample ID | Arsenic (mg/kg) | | Lead (mg/kg) | |
|---|---|---|---|---|---|
| 115 | S11WP2-03-CNF-A1 | 4.20 | MDL 1.57 | 2.41 | MDL 1.57 |
| 116 | S11WP2-03-CNF-A2 | 6.40 | MDL 1.57 | 28.0 | MDL 1.57 |
| 108 | S11WP2-03-CNF-A3 | 3.42 | MDL 1.61 | 2.57 | MDL 1.61 |
| 109 | S11WP2-03-CNF-A4 | 5.53 | MDL 1.7 | 7.12 | MDL 1.7 |
| 114 | S11WP2-03-CNF-A5 | 3.96 | MDL 1.52 | 2.74 | MDL 1.52 |
| 98 | S11WP2-03-CNF-A6 | 6.77 | MDL 1.59 | 10.3 | MDL 1.59 |
| 99 | S11WP2-03-CNF-A7 | 3.24 | MDL 1.57 | 2.30 | MDL 1.57 |
| 103 | S11WP2-03-CNF-A8 | 4.48 | MDL 1.53 | 2.24 | MDL 1.53 |

## WASTE PILE 3




CAOs=Arsenic 32mg/kg, Lead 1,800 mg/kg

ND=NON DETECT
MDL=METHOD DETECTION LIMIT

| Point # | Sample ID | Arsenic (mg/kg) | | Lead (mg/kg) | |
|---|---|---|---|---|---|
| 94 | S11WP3-03-CNF-A1 | 5.89 | MDL 1.55 | 3.31 | MDL 1.55 |
| 91 | S11WP3-03-CNF-A2 | 4.62 | MDL 1.54 | 3.18 | MDL 1.54 |
| 92 | S11WP3-03-CNF-A3 | 3.26 | MDL 1.53 | 3.97 | MDL 1.53 |
| 83 | S11WP3-03-CNF-A4 | 4.45 | MDL 1.52 | 2.53 | MDL 1.52 |
| 86 | S11WP3-03-CNF-A5 | 5.18 | MDL 1.55 | 3.11 | MDL 1.55 |

SAMPLE COORDINATES FOR SWMU-11 WASTE PILE 1 SITE
UTAH STATE PLANE PROJECTION NAD 83

| POINT # | N (ft) | E (ft) |
|---|---|---|
| 137 | 7354874 | 1391739 |
| 138 | 7354876 | 1391704 |
| 129 | 7354892 | 1391704 |
| 132 | 7354890 | 1391739 |
| 136 | 7354874 | 1391758 |
| 120 | 7354859 | 1391740 |
| 121 | 7354860 | 1391704 |
| 125 | 7354878 | 1391687 |

SAMPLE COORDINATES FOR SWMU-11 WASTE PILE 2 SITE
UTAH STATE PLANE PROJECTION NAD 83

| POINT # | N (ft) | E (ft) |
|---|---|---|
| 115 | 7354819 | 1391795 |
| 116 | 7354822 | 1391777 |
| 108 | 7354844 | 1391779 |
| 109 | 7354841 | 1391794 |
| 114 | 7354819 | 1391809 |
| 98 | 7354800 | 1391795 |
| 99 | 7354803 | 1391774 |
| 103 | 7354825 | 1391759 |

SAMPLE COORDINATES FOR SWMU-11 WASTE PILE 3 SITE
UTAH STATE PLANE PROJECTION NAD 83

| POINT # | N (ft) | E (ft) |
|---|---|---|
| 94 | 7354701 | 1391854 |
| 91 | 7354715 | 1391859 |
| 92 | 7354695 | 1391876 |
| 83 | 7354685 | 1391851 |
| 86 | 7354703 | 1391833 |

## DESCRIPTION SWMU 11 SITE

The waste pile area was originally identified by numerous piles of debris (wood, scrap metal, wiring, metal shavings, automobile parts, etc.) in an undeveloped area east of the SWMU 11 Laundry Ponds. Much of the surface debris was removed during the spring of 1993. Soil sampling in the waste pile areas found lead and arsenic concentrations above health based standards. This corrective action involved excavation and off site disposal of the contaminated soil from three areas as defined by the USACE. Sample results confirmed that the sites have been remediated to meet corrective action objectives.

REVISIONS

| No. | DATE | BY | REVISION |
|---|---|---|---|
| 1 | 1-9-2004 | TF | 1 |

DRAWN BY: TF
DESIGN BY: TF
CHECKED BY: AA
DATE: 1-9-2004

CLIENT: USACE SACRAMENTO
DWG: SWMU 11 PROJECT
JOB No: 2052.004

NORTH WIND INC.
545 SHOUP SUITE 200
IDAHO FALLS, ID 83402
(208)528-8718

North Wind

SWMU 11 CORRECTIVE MEASURES
TOOELE ARMY DEPOT
WASTE PILES

SHEET: 2 OF 2

Figure 3. *SWMU Waste Ponds Excavation Boundaries and Sample Locations.*