# AR TARGET SHEET

The following document was too large to scan as one unit, therefore, it has been broken down into section.

DOCUMENT #: DOE/RL 92-67

EDMC#: 0025845

SECTION: 3 OF 3

THIS PAGE INTENTIONALLY
LEFT BLANK

# APPENDIX N

# EVALUATION OF REMEDIAL PROCESS OPTIONS

9 3 1 2 3 1 2 1 2 9 2

This page left intentionally blank.

9 3 1 2 3 5 2 1 2 9 3

## APPENDIX N CONTENTS


1.0 GENERAL . . . . . N-1

2.0 SOIL PROCESS OPTIONS EVALUATION . . . . . N-1
- 2.1 NO ACTION . . . . . N-1
- 2.2 INSTITUTIONAL CONTROLS . . . . . N-1
- 2.3 CONTAINMENT . . . . . N-2
- 2.4 EXCAVATION/TREATMENT/DISPOSAL . . . . . N-3
- 2.5 IN-SITU TREATMENT . . . . . N-10
- 2.6 BIOLOGICAL TREATMENT . . . . . N-10

3.0 GROUNDWATER PROCESS OPTIONS . . . . . N-12
- 3.1 NO ACTION . . . . . N-12
- 3.2 INSTITUTIONAL CONTROLS . . . . . N-13
- 3.3 EXTRACTION/TREATMENT/DISCHARGE . . . . . N-14
- 3.4 IN-SITU TREATMENT . . . . . N-19
- 3.5 BIOLOGICAL TREATMENT . . . . . N-19

4.0 REFERENCES . . . . . N-21


9 3 1 2 3 ' 2 1 2 9 4

This page left intentionally blank.

9 5 1 2 3 3 2 1 2 9 5

## 1.0 GENERAL

Soil and groundwater remedial process options remaining after the initial screening discussed in paragraphs 7.4.1 and 7.4.2 of the main report are further evaluated here based on effectiveness, implementability and cost. Summaries of this evaluation are presented in paragraph 7.5 of the main report.

## 2.0 SOIL PROCESS OPTIONS EVALUATION

Remaining process options for the remediation of contaminated soils are evaluated in the following sections.

## 2.1 NO ACTION

This alternative is required under the National Contingency Plan and is retained for comparison with other alternatives. Under this alternative, the site soils will not be disturbed and groundwater monitoring of existing wells in the Horn Rapids Landfill (HRL) would be continued to determine if potential downward percolation of soil contaminants is affecting groundwater quality. Groundwater monitoring is considered an "institutional control."

This alternative would not be effective in reducing the short- and long-term risks to human health and the environment. Risks would remain the same as those identified in the baseline risk assessments. Implementation of the plan would be difficult because applicable or relevant and appropriate requirements would not be achieved thus creating resistance from both regulatory agencies and the public. The cost of this alternative would be low.

## 2.2 INSTITUTIONAL CONTROLS

Institutional controls are actions which protect human health and the environment and assure continued effectiveness of a response action. These actions would prevent exposure to contaminated soils for onsite workers and would ensure that the contaminants are not migrating offsite. Access restrictions and long-term monitoring are the institutional controls considered.

### 2.2.1 Access Restrictions

Access controls are measures that would restrict the access to or activity in the contaminated areas. Administrative controls such as land use zoning could be utilized to restrict the use of the land. Currently, the 1100-EM-1 Operable Unit is zoned for industrial use and this land use is anticipated to continue for at least the next 20 years (appendix J). Administrative controls are retained as an option for at least the near-term future.

Restrictions limiting land use could be attached to deeds if and when the Department of Energy (DOE) relinquished ownership of parts or all of the sites. Similarly, excavation restrictions would prevent future land owners from engaging in construction activities that would disturb the sites. These restrictions are usually not effective because they are difficult to enforce. Also, they are not implementable because it is the policy of the Federal government to dispose of only those properties which have unrestricted use. Therefore, each operable subunit must be fully remediated before it can be disposed of and the need for deed restrictions would be eliminated. For this reason, deed and excavation restrictions are not considered further.

Perimeter fencing at the sites would be effective in restricting public access and reducing the potential for exposure. Fencing is readily implementable with moderate capital and low operation and maintenance (O&M) costs. Fencing is a viable process option which may be used in combination with other alternatives and is retained for consideration.

### 2.2.2 Monitoring

Monitoring of groundwater may be required whether or not remedial actions are taken. This option is used in combination with all remedial alternatives for which contaminants remain onsite and is carried forward to be evaluated in the alternative selection process.

## 2.3 CONTAINMENT

Capping is the only containment option which is retained after initial screening. A final capping system is used to minimize the long-term migration of liquids (leaching potential) through the contaminated soil site and also to prevent direct contact with soils and emissions of fugitive dust.

The Resource Conservation and Recovery Act (RCRA) cap requirement (EPA, 1989) is a multi-layered system consisting of:

- A top layer of at least 60 cm (2 ft) of soil, either vegetated or armored at the surface;
- A granular or geosynthetic drainage layer with a hydraulic transmissivity of no less than $3 \times 10^{-5}$ $cm^2/sec$ (0.0209 gal/day. ft); and,
- A two-component low-permeability layer comprised of 1) a flexible membrane liner installed directly on 2) a compacted soil component with an hydraulic conductivity no greater than $1 \times 10^{-7}$ cm/sec (0.003 ft/day).

The Washington Administrative Code (WAC) allows a municipal solid waste landfill (MSWLF) cap of reduced design for installations in arid regions such as Hanford [< 18 cm (7 inches) rainfall per year]. This cap would consist of:

- A top layer of at least 15 cm (6 inches) of soil;
- An impermeable layer consisting of a 50 mil thick geomembrane.

Installation of either cap would be effective in minimizing infiltration. The RCRA cap also provides a means for collecting water that was able to penetrate the cap. The potential for leaching of contaminants to the groundwater would be minimal for either option. However, the contaminants of concern at the UN-1100-6 [for bis (2-ethylhexyl) phthalate (BEHP)], Ephemeral Pool [for polychlorinated biphenyls (PCB's)] and the HRL (for PCB's) are insoluble and are tightly bound to the soil. Vadose zone modeling (section 6.0) has shown that there is minimal recharge at these sites to the groundwater aquifer and there is no potential for contaminant migration. This is confirmed by the fact that no soil contaminants of concern have been detected at elevated levels in groundwater at the site. Caps designed to limit infiltration are not a remedial action objective. Of these two caps, only the MSWLF cap is retained for further evaluation in the alternative selection process.

Reducing emission of fugitive dust containing asbestos from the HRL is a remedial action objective. For inactive disposal sites containing asbestos, minimum cap requirements are either:

(1) A compacted 15 cm (6-inch), non-asbestos-containing soil cover with an established and maintained vegetative cover;

(2) A compacted 60 cm (2-foot), non-asbestos-containing soil cover maintained to prevent exposure to asbestos-containing soil; or

(3) A compacted 15 cm (6-inch), non-asbestos-containing soil cover with an additional 3-inch layer of non-asbestos-containing crushed rock to prevent erosion.

All the above options would be effective in minimizing fugitive dust emission. Option (1) would not be implementable because of the desert environment. Options (2) and (3) are both implementable with the cost of each being comparable and moderate. To simplify future alternative evaluations, option (2) will be carried forward.

## 2.4 EXCAVATION/TREATMENT/DISPOSAL

The excavation/treatment/disposal general response action encompasses all process options to remediate the contaminated soil sites ex situ. These are discussed in the following sections.

### 2.4.1 Excavation

Excavation of soils for processing will be done using conventional earthmoving equipment (backhoes, front-end loaders, dump trucks). This method is effective and implementable. A key consideration will be the control of fugitive dust during these operations to prevent short-term risks to onsite remediation workers. Safety precautions, such as the use of respirators, protective clothing and the misting of soil for dust control, may be required. The cost of the operations may increase substantially based on the level of protection determined to be protective of human health. This option is retained for further consideration.

### 2.4.2 Thermal Treatment

Thermal treatment processes use high temperatures to thermally destroy organic contaminants. Four thermal process, three of which are incinerators, were retained after initial screening and are discussed further in the following paragraphs.

**2.4.2.1 Incineration.** Rotary kiln incinerators are slightly inclined, refractory-lined cylinders used for the controlled combustion of organic waste under net oxidizing conditions [Environmental Protection Agency (EPA), 1991, and EPA, 1990]. Wastes and auxiliary fuel are fed into the high end of the kiln and passed through the combustion zone by gravity. Turbulence is created by the rotation of the combustion chamber and improves burnout of the solids. Organics which may volatilize and reside in the gases are destroyed in a secondary combustion chamber. Residuals from this process include ash, flue gases, and brine solution from the ash quench, and wet scrubber.

Infrared processing systems use electrical resistance heating elements or indirect fuel-fired radiant U-tubes to generate thermal radiation beyond the red end of the visible spectrum (EPA, 1990 and EPA, 1991). Waste is fed into the combustion chamber by conveyor belt and exposed to the radiant heat. Exhaust gases are passed through a secondary combustion chamber. Residuals are the same as those for the rotary kiln incinerator.

Circulating fluidized bed incinerators use high air velocities to suspend and circulate fuel/waste particles in a refractory-lined combustion vessel (EPA, 1990 and EPA, 1991). Fluidized beds can be operated at lower temperatures than other incinerators because the increased turbulence aids combustion. Flue gas is separated from heavier particles in a solids separation cyclone. Limestone is used to capture acid gases, thus eliminating wet scrubbers and one of the residual process waste streams.

The effectiveness of each of these incinerators in destroying organic contaminants is demonstrated by removal efficiencies of greater than 99.9 percent (EPA, 1991). Based on the 95 percent upper tolerance limit concentrations of 18,000 mg/kg BEHP at UN-1100-6, 15 mg/kg PCB's at the Ephemeral Pool, and 38 mg/kg PCB's at the HRL, residual concentrations in incinerator ash would be 18, < 0.1, and < 0.1 mg/kg, respectively, for each operable subunit. These concentrations are well below the remedial action objectives.

Rotary kiln incineration is readily implementable. Soil feed size up to 12 inches in diameter can readily be handled (EPA, 1991). Size reduction would be required for both the fluidized bed and infrared units as they require waste feed material to be less than 2 inches in diameter (EPA, 1991). Soils at the operable subunits typically contain gravels greater than 2 inches in diameter. All processes being equally effective, only the rotary kiln incinerator is retained because it does not require special handling of feed soils. Because of the small volume of contaminated material onsite, a small mobile incineration unit is required. Units which process five tons per day are available at moderate mobilization and O&M costs.

Additional costs may be required for permitting, compliance monitoring and for the disposal of residuals. Also, the public tends to take a negative view of incineration and may not accept this process option. The process is carried forward to be incorporated into alternatives, however, because it is proven effective in destroying the organic contaminants of concern.

**2.4.2.2 Vitrification.** A Joule heated ceramic melter is used to vitrify soils at temperatures up to 1500° C (2700° F). Organic contaminants present in the feed stream are destroyed by pyrolysis and/or combustion at these high operating temperatures (PNL, 1988). Final system design can assure effective destruction of BEHP and PCB's in the soil. Any inorganic contaminants in soils from the HRL would be incorporated into the glass matrix of the final product and isolated from the environment upon final disposal.

Waste materials and glass frit are fed into a high-temperature furnace where the organics decompose and any residual oxides and ash material melt to form a glass product. The glass frit typically consists of silica, soda ash, and lime. Contaminated soils are fed either on top of or below the molten glass surface of the melter. Waste particles undergo pyrolysis and organics are thermally degraded. Off gases are readily burned in the plenum space or in a secondary combustion chamber. The molten mixture is discharged into disposal containers or quenched in water to produce a granular product for bulk disposal (PNL, 1988).

The process is not readily implementable because the technology is not yet mobile. Pacific Northwest Laboratories (PNL) had planned to construct a mobile unit that could process five tons of contaminated soils per day but the project was suspended (PNL, 1992). An engineering scale vitrification plant is planned in the 300 Area, which will process 250 kg/day. This system will be permitted to process up to 1,000 kg of waste from any source. This facility could possibly be used to process a small quantity of these contaminated soils as a demonstration of the effectiveness of the technology.

If a fixed vitrification plant were operating and readily available, the cost of treatment would be moderate. However, because the technology is not yet on-line, this process option is not considered further. Vitrification should be revisited in the design phase if the DOE decides to proceed with a site-wide vitrification plant for the treatment of hazardous waste.

**2.4.3 Chemical Treatment**--Dechlorination and stabilization/solidification were the chemical treatment processes retained after initial screening and are evaluated further here.

**2.4.3.1 Dechlorination.** Chemical dechlorination is the process by which hazardous chlorinated wastes are destroyed or detoxified by substitution of the contaminant chlorine atoms with other atoms (predominantly hydrogen). This process is potentially effective for the treatment of PCB's. Contaminated soils are heated and mixed with an alkali metal hydroxide-based polyethylene glycol reagent in a mobile batch reactor (EPA, 1991).

Soils are first processed by screening to remove the large rocks and debris in order to avoid jamming of the reactor mixer blades. Reagent is then mixed well with the soil in the reactor to obtain efficient treatment. The mixture is heated to between 100° and 180° C and reactions are carried out for 1 to 5 hours depending on the type, quantity, and concentration of the contaminants. The treated mixture is then processed in a separator where the reagent is removed and recycled (EPA, 1990).

Vaporized water resulting from the reaction is condensed and collected for further treatment or recycled through the washing process. Carbon filters are used to capture volatile organics that are not condensed. The treated soil is washed and neutralized by the addition of acid, dewatered, and then disposed of onsite if regulatory requirements are met.

A key process residual that may effect the overall cost of the treatment is the waste washwater. Typically, this residual contains only trace amounts of contaminants and reagents, and is expected to meet discharge standards that would allow it to be discharged to a publicly-owned treatment works. If the washwater does require treatment, typical methods are carbon adsorption, chemical oxidation, biodegradation and/or precipitation.

Field performance data suggests that dechlorination is effective in reducing PCB concentrations to below 2 parts per million (ppm) in treated soil (EPA, 1991 and EPA, 1990). Initial soil concentrations cited were much higher than the PCB concentrations at the 1100-EM-1 Operable Unit. It is expected that by adjusting batch mixing time, temperature, and reagent ratio, soils can be treated to below the 1 ppm level.

The process is readily implementable with a number of vendors able to provide treatment units. Costs are moderate in comparison to other technologies which treat PCB's (*i.e.*, incineration). However, information from one vendor suggests that these systems are cost effective only when at least 10,000 tons of soil are processed (Galson, 1992). Because of the limited amount of material to be processed at the site, dechlorination as an innovative and cost-effective technology is not carried forward in the evaluation process.

**2.4.3.2 Stabilization/Solidification**. Stabilization and solidification processes achieve one or more of the following results (EPA, 1986):

- Improve the handling and physical characteristics of the waste;
- Decrease the surface area of the waste mass across which transfer or loss of contaminants can occur; and/or,
- Limit the solubility of any hazardous constituents of the waste such as by pH adjustment or sorption phenomena.

Stabilization limits the solubility or mobility of the contaminants without necessarily changing the physical characteristic of the waste. The process usually involves the addition of a reagent that maintains the hazardous contaminant in its least mobile or toxic form.

Solidification produces a solid block of waste material with high structural integrity. The contaminants are mechanically locked in the solidified matrix. Migration of the contaminant is limited by the reduction of surface area exposed to the environment and/or by isolating the contaminants by microencapsulation.

Typically, portland cement and pozzolan materials (*e.g.*, fly ash) are blended with contaminated soils to produce a stronger waste/concrete composite. Contaminants are contained in the concrete matrix by microencapsulation. Other reagents are also used; however, most reagents have been found to be ineffective in immobilizing organic constituents (EPA, 1990). A 1988 evaluation of a proprietary reagent gave inconclusive evidence on its ability to immobilize PCB's (EPA, 1991).

While this process option is readily implementable at a moderate cost, its effectiveness in stabilizing the organic soil contaminants is questionable. The process is proven to be effective in immobilizing metals. Because leaching of contaminants to the groundwater aquifer at the HRL is not a pathway of concern at this site, stabilization/ solidification methods are not pursued further.

### 2.4.4 Physical Treatment

Physical treatment processes involve the separation of the contaminant from the soil. Three process options were retained after initial screening and each is evaluated further here.

**2.4.4.1 Solvent Extraction.** In this process, hazardous contaminants are extracted from soils using an organic solvent. A solvent, which preferentially removes organic contaminants, is mixed with contaminated media, and transfer of the contaminants from the media to the solvent phase occurs. A change in temperature or pressure is then used to separate the contaminant from the solvent. This process is one of waste reduction; contaminants are not destroyed but are concentrated in their liquid forms. This concentrate will require further treatment. Processed soils can be redeposited onsite if they meet regulatory criteria.

The process has demonstrated effectiveness in removing PCB's from sediments at an efficiency rate of between 84 to 98 percent (EPA, 1991). It should be noted that removal efficiencies increased with the increase in number of passes made through the reactor. It is reasonable to expect that 99 percent removal efficiencies can be achieved; however, the costs associated with this level of treatment will be comparatively high. The effectiveness of the process on BEHP removal is not proven, but the process is demonstrated to be effective on nonhalogenated semivolatile compounds.

The process is readily implementable with a number of vendors who are able to provide treatment units. Special material handling is required because units can only process materials 1/8 to 1 inch in diameter.

Because of the many passes required to increase removal efficiencies, the material handling considerations, and the requirement for post treatment of the extract, the cost of solvent extraction relative to other treatments for the small amount of contaminated soil is high. For these reasons, solvent extraction is not considered further.

**2.4.4.2 Supercritical $CO_2$ Extraction.** This extraction process uses supercritical carbon dioxide as the solvent to extract organic constituents from soils. The process operates at the critical temperature and pressure of carbon dioxide. At these conditions, carbon dioxide is at its critical density. The process is extractive and further treatment of the extract is required to destroy hazardous contaminants.

Near the critical point, the density of a supercritical fluid is typically $10^2$ to $10^3$ times greater than that of the gas at ambient temperatures. By increasing the density, the solvent strength of the supercritical fluid increases. Because carbon dioxide has a low critical temperature (31.1°C), extractions are performed at thermally mild conditions and the soil structure is not destroyed. Also, because carbon dioxide is a gas at room temperature, concentration of the extract is simplified.

Supercritical fluids have higher solute diffusivities than solvents used in conventional extraction techniques. Thus, removal efficiency is increased. This eliminates the multiple passes required in conventional systems.

The Westinghouse Hanford Corporation (WHC) has recently completed initial bench scale studies evaluating this process (WHC, 1992). In these studies, contaminated soils from the UN-1100-6 and from the HRL were used. Preliminary results indicate that BEHP can be extracted from the UN-1100-6 soil at efficiencies of about 97 percent. While this is not sufficient enough to remediate soils to meet Model Toxics Control Act levels, these results are encouraging. Further bench scale studies that alter either the pressure or temperature under which the reactions are carried out will be conducted to determine optimal removal efficiencies. Removal efficiencies for the HRL soils containing PCB's were greater than 99 percent.

Although this technology is not yet available on a full scale for soil remediation, it is carried forward to the next step in the process because it is an innovative technology.

**2.4.4.3 Soil Washing.** Soil washing is a volume reduction process used for pretreatment. The process is applicable to contaminants that are concentrated in the fine fraction of the soil (silt, clay, and soil organic matter) and to contaminants associated with the coarse soil fraction (sand and gravel), which are surficial. The goal of this separation process is to concentrate the contaminants in a smaller volume of material separate from a washed soil product. The washed product will meet cleanup standards and can be redeposited at the cleanup site.

Many of the unit processes are common to that of the mineral processing industry. Soils are first screened to remove the large debris (> 2 inches). Process steps can include mixing trommels, pug mills, vibrating screens, froth flotation cells, attrition scrubbing machines, hydrocyclones, screw classifiers, and various dewatering operations (Biotrol, 1992). The soils are mixed with washwaters to remove contaminants from the soil. Sometimes, organic solvents, chelating compounds, surfactants, acids, or bases are used to enhance the extraction of the contaminant from the soil. The soil and washwater are then separated, and the soil is rinsed with clean water resulting in a clean soil as a product. Suspended soil particles in the washwater are recovered as a sludge by discrete settling using gravity or by flocculation through the use of a polymer. This sludge consists of the fine fraction of the original soil and should contain most of the contaminants. The sludge is dewatered and then sent on for further treatment to destroy the contaminants. Processed washwater is usually recycled after biological or physical treatment.

The soil washing process has proven to be effective in reducing the volume of soils contaminated with PCB's. Although not directly cited in literature, its effectiveness for BEHP removal should be similar. Destruction of these contaminants would require additional treatment.

Soil washing would be readily implementable for the soils at the 1100-EM-1 sites. The technology is available from various vendors, and the process is seen as favorable by the public.

For sites with a small volume of contaminated soil, the costs of soil washing are high. One vendor reports that for sites with less than 10,000 tons of contaminated soils, the process is not cost effective (Biotrol, 1992). These high costs are only associated with volume reduction of the soils and do not take into account added costs for treatment and destruction of the contaminant. For these reasons, soil washing is deemed not to be cost effective at this site and is not carried forward for further consideration.

### 2.4.5 Disposal

Both onsite and offsite disposal options were retained after initial screening and are evaluated further in the following sections.

**2.4.5.1 Onsite Disposal.** Onsite disposal is considered for all soils treated by onsite process options. These soils will be subject to the RCRA Land Disposal Restrictions that require treatment of wastes to the best demonstrated available technology (BDAT) levels prior to land disposal. The ability to meet these requirements is dependent on the treatment process option chosen. In some instances, as in the use of innovative technologies, alternative treatment levels may be selected if a treatability variance establishing these levels is obtained.

The site remediation goal is to meet BDAT levels and redeposit treated soils at the respective subunits. The treated soils would then be capped with 2 feet of random fill material and regraded. This process is effective in handling treated soils and should not

increase risks to human health or the environment. It is easily implementable, has a relatively low cost, and will be considered for inclusion in the remedial action alternatives.

**2.4.5.2 Offsite Disposal.** The use of a Toxic Substance Control Act (TSCA)-approved disposal facility is considered for disposal of untreated PCB soils. Under TSCA, PCB-contaminated soils with concentrations up to 500 ppm may be disposed of in a licensed hazardous waste landfill.

This method is not effective in destroying the contaminant. PCB's are immobilized by containerization and the containers are deposited in the landfill. The landfill is built to specific requirements that prevent future migration of the contaminant. This disposal method is implementable with an approved facility within 180 miles of the site. The cost of this disposal option is moderate. This process option will be used in the development of alternatives.

## 2.5 IN-SITU TREATMENT

Stabilization/Solidification is the only in-situ process option retained after initial screening. This process is similar to the ex-situ process except that soil cutting and mixing blades are used to blend soils in situ while stabilizing agents are being injected. Soils to depths of 9 m (30 ft) can easily be stabilized. The process is proven for the immobilization of metal soil contaminants; its effectiveness on organic contaminants is not well documented and treatability studies would be required to determine its ability to immobilize PCB's and BEHP.

Deep soil mixing augers and pressurized slurry-injection systems specifically built for this type of work are readily available. This equipment is most effective where there are sandy, relatively dry soils. Buried debris and concrete rubble, as might be encountered at the HRL, significantly hamper the process and may make the use of this technology infeasible for this site. The cost of the process is moderate.

This process is not carried on for further consideration because it may not easily be implemented at the HRL and its effectiveness on organic contaminants is uncertain. Additionally, contaminant migration from the vadose zone to the groundwater has been dismissed as an operative pathway making further immobilization of the contaminants unwarranted.

## 2.6 BIOLOGICAL TREATMENT

Biological treatment refers to the use of microorganisms to decompose contaminants. This occurs under both aerobic conditions (in the presence of oxygen) and anaerobic conditions (devoid of oxygen), depending on the nature of the microbes. Sometimes decomposition is direct (the microbe consumes the contaminant as a source of carbon or other nutrient needed for growth) or the microbe may produce enzymes that catalyze a chemical change in the contaminant (cometabolism). The presence of existing microbes in

the soil, suited to the decomposition of the contaminant, is beneficial. Otherwise, the microbes that are needed can be genetically derived or isolated in the laboratory. Regardless of the microbial origin, treatability studies are conducted to be sure that the desired decomposition of the contaminant can be achieved without the production of hazardous byproducts.

In order to stimulate the growth of the decomposing organisms, air and nutrients (aerobic biodegradation) or methane and nutrients (anaerobic biodegradation), must be supplied. The quantities of these inducers are determined stoichiometrically.

Contaminated soil can be treated in place or excavated and treated at a remote location. In-situ treatment of contaminated soil promotes and accelerates the natural biodegradation process in the undisturbed soil. Generally, it consists of a water recirculation system with above-groundwater treatment and conditioning of the infiltration water with nutrients and an oxygen source. The system is usually designed to allow uncontaminated groundwater to enter the zone of contamination, but prevents groundwater from leaving the contaminated zone (EPA, October 1991).

Ex-situ biological treatment of contaminated soil includes three general technologies: 1) slurry phase, 2) land treatment, and 3) contained land solid phase. In the slurry phase, the soil is excavated, mixed with water, and slurried to the bioreactor where the biological conversion takes place. Once treated, the soil is dewatered and disposed.

Land treatment is also called land farming. Using this method, the soil is excavated and placed in a prepared, lined treatment bed. Using standard farm equipment, a large area can be treated.

Contained solid phase generally refers to above-ground composting of the soil with appropriate soil amendments to stimulate microbial decomposition of the contaminant.

There is some evidence that in-situ bioremediation of BEHP may be possible. Waste Stream Technology (WST) has reported that they have isolated a microbe that can obtain energy for growth from BEHP. WST has also reported that BEHP was among several contaminants biotreated in situ at the Pittsburgh Airport in Allegheny County, Pennsylvania. During construction of the Pittsburgh Airport expansion project, an abandoned garbage dump was discovered. BEHP was among the contaminants of concern at the site. The concentrations of BEHP were on the order of 1,000 to 2,000 mg/kg. After biotreatment, the concentrations of BEHP were below the target levels.

The potential effectiveness of biotreatment on the BEHP at this Pennsylvania site is unclear. There is reason to suggest that dilution by mixing, rather than biotreatment may explain the reduced concentrations in post treatment samples. The dump area was excavated and placed in a temporary stockpile where it was biologically treated. Since only isolated samples taken at the dump site contained concentrations of BEHP, it is possible that the BEHP was diluted during excavation, transport, and placement in the stockpile.

The fact that microbes have been isolated that utilize BEHP as their energy source is encouraging. A treatability study would be required to confirm that in-situ biotreatment of BEHP is feasible at the UN-1100-6 site. Bioremediation of BEHP is carried forward as an innovative technology.

Biodegradation of PCB's in both aerobic and anaerobic realms has been investigated. Positive results have been achieved in bench scale testing of the biotreatability of PCB's. In a series of studies, soil from New York State contaminated with Aroclor 1242 (similar to Aroclor 1248) was sampled for biodegradation testing. Resting cell studies using the contaminated soil have shown substantial PCB biodegradation (Unterman *et al.*, 1988). There has also been work on genetically engineered bacteria designed specifically for biodegradation of Aroclor 1242-contaminated soil. Unterman *et al.* have also isolated PCB-degrading bacteria.

Dechlorination of Aroclor 1242 under anaerobic conditions has been attempted. At a project on the upper Hudson River, New York, PCB- (Aroclor 1242) contaminated sediments were dechlorinated by microorganisms under anaerobic conditions in a bench scale test (ATTIC-RM00468, 1992). Dechlorination occurred primarily from the para and meta positions; congeners that were substituted only in the ortho positions were accumulated (ATTIC-RM00468, 1992). These dechlorination products are both less toxic and more readily degraded by aerobic bacteria (ATTIC-RM00468, 1992). Again, treatability studies would be required to confirm biodegradation of PCB's at the 1100 sites is possible.

Successful PCB degradation in field studies has not been documented in the literature surveyed. To date, degradation has only been demonstrated in bench scale studies where input variables were closely controlled. Although bioremediation of PCB's in the field is an emerging technology, it has not been demonstrated and its use is not considered further.

## 3.0 GROUNDWATER PROCESS OPTIONS

Groundwater process options remaining after initial screening are evaluated further in the following sections.

### 3.1 NO ACTION

Under this scenario, no remedial action would be taken on the HRL groundwater and contaminant levels would be naturally attenuated by dispersion, diffusion, and dilution. This alternative is required under the National Contingency Plan to establish a baseline condition to compare to other alternatives and will be considered in the development of alternatives.

Currently, there is no use of this groundwater as a drinking water source. Domestic water is supplied through the City of Richland distribution network. Therefore, there is no current risk to human health or the environment. This alternative still may not be acceptable to regulators or the public because contaminants are left in place and are not actively remediated.

## 3.2 INSTITUTIONAL CONTROLS

Institutional controls are actions that reduce the exposure of receptors to contaminated groundwater and that monitor the spread and level of contamination. Process options were retained after initial screening in the four technology types and are evaluated here.

### 3.2.1 Alternate Water Supplies and Point of Entry/Point of Use Treatment

For domestic consumption, alternate water supplies would be provided through the City of Richland's distribution network or by commercially supplied (bottled) water. The City's distribution network already serves the current industrial user in the area and can be readily accessed at low cost. It is the only alternate water supply that will be carried forward.

Point of entry/point of use treatment would be used by domestic consumers to purify water prior to ingestion. These systems would require maintenance and monitoring to ensure their effectiveness. Again, since the city's distribution network is available, these types of process options are not considered further.

### 3.2.2 Access Restrictions

Access restrictions are actions that would prevent consumption of the contaminated water until it is remediated. Administrative controls would consist of regulations that would require owners to abandon wells or prevent the use of these wells. These controls are usually difficult to implement. There are currently no domestic consumers downgradient of the contaminated plume and the need for these restrictions is nonexistent. Deed restrictions could be imposed that would prohibit development of wells by new owners, upon disposal of the land by DOE. If this land would come under private ownership, deed restrictions would be difficult to implement. Deed restrictions are not pursued further.

Future use and the development of new wells can be controlled by both DOE, who owns the land, and Ecology, through which water well permits must be attained. These administrative controls are easily implementable and should be used until the groundwater is remediated. The cost of this alternative is low.

### 3.2.3 Monitoring

Monitoring wells are valuable in identifying the extent, spread, and concentration of contaminants. Additionally, they are used to evaluate the effectiveness of the remedial activity. Installation of wells involves standard practices. Initial capital costs, O&M costs, and sampling and analytical costs are high when compared to other institutional controls. Monitoring is carried forward to the development of alternatives.

## 3.3 EXTRACTION/TREATMENT/DISCHARGE

This is the group of active remediation scenarios that would withdraw and treat contaminants prior to discharge. Extraction is by the use of a variety of wells and well configurations. Treatment includes physical, chemical, and biological processes. Also several discharge scenarios are evaluated.

### 3.3.1 Extraction

Deep well pumps have their impellers close enough to the water surface to avoid cavitation. The motor may be at ground level with a long shaft connecting it to the impellers, or it may be at the bottom of the well, below and directly adjacent to the impellers. These pumps efficiently move large volumes of water and are effective in aquifers with high hydraulic conductivities. Ejector well pumps are primarily used in aquifers with low hydraulic conductivity. They are designed to be operated intermittently and generally have lower efficiencies than deep well pumps. The HRL aquifer has a high hydraulic conductivity and the use of deep well pumps is most appropriate. This extraction method will be used for the development of alternatives.

Installation of well casing and pumps is readily implementable. Initial capital costs and O&M costs for a deep well pumping system are relatively low.

Enhanced extraction is the process where water is discharged to the aquifer in order to increase its hydraulic gradient and, thus, increase its capacity to flush contaminants. This procedure is most appropriately used where there is a known source area. The contaminants at HRL are widely dispersed and the benefits of this method would be minimal. Its use is not considered further.

### 3.3.2 Physical Treatment

Physical processes involve the separation of the contaminant from the groundwater. These processes exploit various physicochemical phenomena to remove the undesirable constituents. Five physical processes were retained following initial screening. Each is described and evaluated here. Viable physical processes are compared against each other in paragraph 2.3.2.6.

**3.3.2.1 Adsorption.** Organics that are refractory and that are difficult to remove by conventional biological treatment processes are frequently removed by adsorption onto an active solid surface. Activated carbon is the most widely used adsorbent in these processes (Eckenfelder, 1989).

The underlying principle of adsorption is the mass transfer of an organic molecule from a liquid onto a solid surface. Adsorption occurs because there are forces that attract the organics to the solid surface from solution. In the case of activated carbon, the porous structure of the carbon attracts and holds (adsorbs) the organic contaminant. The

contaminants are attracted either because: 1) they have a low solubility in the water; 2) they have a greater affinity for the carbon than for the water; or 3) a combination of the two (GII, 1991).

The carbon adsorption process usually consists of a series of columns that are packed with carbon. The contaminated water is passed through the vertical beds with either an upward or downward flow. The contaminants are most rapidly and effectively adsorbed by the carbon closest to the inlet of the bed. This carbon is in contact with the highest concentrations of the contaminated water. As treatment progresses, these carbon sites lose their adsorptive capacity and the adsorption zone progresses up or down the column. As this zone approaches the end of the carbon bed, effluent concentration approaches that of the influent. This is termed breakthrough. At this point the carbon bed is spent and no additional removal of the contaminant occurs. The carbon bed is then taken off line and the carbon is regenerated by thermal methods or replaced.

Carbon adsorption is demonstrated to reduce trichloroethene (TCE) concentrations in contaminated waters to below 1 $\mu$g/L. Systems to handle the range of flows anticipated for this site are available from several vendors. Initial capital costs and annual O&M costs are typically high for these systems when compared to other physical processes.

**3.3.2.2 Air Stripping.** Air stripping is the physical process of transferring a volatile organic contaminant (VOC) from water into the air. This is normally done by passing water through a packed column countercurrent to a flow of air. The packing is usually an open structured, chemically inert material (plastic) that is selected to provide high surface areas that facilitate mass transfer of the contaminant from the water to the gas phase. This process is affected by the contact area, the solubility of the contaminant, the diffusivity of the contaminant in air and water, and the temperature (Eckenfelder, 1989). Besides the diffusivity and temperature, these parameters are dependent on the air- and water-flow rates and the packing media selected. The efficiency of the process in removing a contaminant is directly related to the Henry's Law constant of the organic compound and the mass transfer coefficient of the packing.

TCE has a Henry's Law constant of 0.01 atm·m$^3$/gmole. Air stripping is usually applicable to contaminants with Henry's Law constants greater than 0.003 atm·m$^3$/gmole. Generally the greater the Henry's Law constant, the easier the contaminant is removed from the liquid phase.

Typically a process unit consists of a cylindrical tower containing packing which disrupts the flow of the liquid thus renewing the air and water interface. Water is pumped to the top of the unit and flows countercurrent to a forced draft provided by a blower. The system is characterized by high interfacial area compared to the volume of water in the column. Principal design parameters are the volumetric air flow ratio, the packing type, size and depth, column diameter, water and air loading rates, and the gas pressure drop.

One consideration with stripping towers is the emission of the stripped VOC's to the atmosphere. VOCs are designated air pollutants whose emissions are controlled. However,

because of the low concentration of TCE at the site, attaining air quality standards is not anticipated to be a problem.

Air stripping technology is readily available from multiple vendors. The process has been proven to remove TCE to below maximum contaminant levels (MCL's). The capital and O&M costs of a stripping system are moderate compared to other physical processes.

**3.3.2.3 Steam Stripping.** Steam stripping is generally used to increase the efficiency of a stripping process. Heating of the contaminated water raises the Henry's Law constant of the contaminant thus making it more strippable. TCE is readily stripped at temperatures of 20° C. Steam stripping is an energy intensive process that would not be of great benefit for use at this site. This process is not considered further.

**3.3.2.4 Reverse Osmosis.** Reverse osmosis (RO) is a membrane process in which hydrostatic pressure is used to drive the feedwater through a semipermeable membrane while a major portion of the contaminant remains behind and is discharged as waste (reject). The process has shown some promise in removing VOC's, however, removal efficiencies for TCE were found to be between 30 and 69 percent (Clark *et al.*, 1984). New membranes are being developed that may increase these removal efficiencies.

RO is also applicable to the removal of nitrates. The development of tin filmed composite spiral wound membranes have made this process cost effective. Additionally, the reject can be flash evaporated leaving behind a solid residual that can easily be handled and disposed. This has advantages over other nitrate removal processes that have treatment residuals that are costly to treat (Culligan, 1992). RO is retained for further consideration for these reasons.

**3.3.2.5 Electrodialysis.** Electrodialysis (ED) is a membrane process that is used to transfer ions from the contaminated water through the membrane, leaving behind a purified water. Use of ED for removal of organics is not documented in the literature; there is little documentation on its use solely for nitrate removal. ED processes remove nitrate-nitrogen at efficiencies of less than 50 percent (Sorg, 1978). Costs for ED processes are typically high compared to other nitrate removal options. ED is not considered further.

**3.3.2.6 Comparison of Physical Processes for TCE Removal.** The remaining physical processes are carbon adsorption and air stripping. Both processes have demonstrated high removal efficiencies from 90 to 99 percent. For the removal of TCE only, air stripping has proven to be far more economical over a wide range of influent concentrations and treatment flows (Clark *et al.*, 1984). As treatment flows increase, the difference in capital costs between the two processes gets larger because the carbon-adsorption system must operate under high pressures that require special pressure vessels for the carbon beds (Westates Carbon, 1992). While these systems provide equivalent treatment, air stripping is carried forward because of the economics.

### 3.3.3 Chemical Treatment

Four chemical treatment processes for the treatment of TCE or nitrates in groundwater were retained after initial screening and are evaluated in greater detail here.

**3.3.3.1 Chemical Oxidation and Ultraviolet (UV) Radiation.** In this process oxidants are added to contaminated groundwater to oxidize pollutants to terminal end products or to intermediate products that are more readily biodegradable or more readily removed by adsorption. Common oxidants used are chlorine, ozone, hydrogen peroxide, and potassium permanganate. Of these, only ozone and hydrogen peroxide are reported to oxidize refractory organic compounds. However, under normal conditions, complete degradation of these compounds does not occur; and, research has shown that using an additional energy source in conjunction with these oxidants (*i.e.*, UV radiation) readily decomposes these refractory compounds (Eckenfelder, 1989). It is believed that the UV activates the oxidant molecule and that it may also activate the organic substrate. The processes described below use UV in conjunction with either ozone or hydrogen peroxide or both.

Ozone is usually generated onsite from dry air or oxygen by a high-voltage electric discharge. Oxygen usually yields twice the ozone concentration (0.5 to 10 wt percent) as air. Ozone oxidation systems typically mix ozone with the contaminated water in a reaction chamber. At the same time, the mixture is exposed to UV radiation. Ozone off gases are treated in a catalytic ozone decomposer and released to the air. The terminal end products of this reaction are $CO_2$ and $H_2O$. Similarly, hydrogen peroxide is mixed with the contaminated water in a reactor and irradiated with UV light.

In a third oxidation process, ozone and hydrogen peroxide are added to the contaminated water in a reactor and the water is subjected to UV light. This process was demonstrated in the field in 1989 as part of the Superfund Innovative Technology Evaluation (SITE) program. Results from this demonstration showed that the process removed 98 to 99 percent of the TCE present in the influent groundwater (EPA, 1990). Some of the TCE removal was due to stripping (10 percent).

Of the three oxidation processes, the ozone, hydrogen peroxide and UV system will be considered further. The system is available at moderate capital cost. O&M for the system is high.

**3.3.3.2 Irradiation.** Irradiation as a means of chemically decomposing organic compounds has been found to require longer reaction times and by itself, has not been demonstrated with high efficiencies. Irradiation is not considered further.

**3.3.3.3 Ion Exchange.** Ion exchange systems are commonly used in municipal water treatment systems for the removal of nitrates. In this process, negatively charged nitrate anions are removed by an insoluble, strong base resin, which exchanges other like charged anions into the solution. This exchange occurs with no structural changes in the resin. The nitrates in solution rapidly diffuse into the network of the resin where exchange occurs. The exchanged ions proceed by the same path into solution. At some point an ion exchange equilibrium is reached and the resin must be regenerated (Benefield *et al.*, 1982).

Various operational modes of ion exchange systems exist. The fixed-bed system is the most common of these. The operating cycle for a fixed-bed system consists of four steps: service, backwash, regeneration, and rinse.

Fixed-bed systems for nitrate removal by strong base resins are operated in the upflow or downflow mode for service, and vice versa for regeneration. This is known as countercurrent operation. Typically for these systems the resin has a high affinity for the exchanged ion and requires a considerable excess of regenerant to regenerate the resin bed. The column typically experiences leakage at the start of the next service run (Benefield *et al.*, 1982).

Ion exchange systems are readily available from a number of water treatment equipment vendors and are an effective treatment method for nitrate removal. The operational requirements for handling the strong base regenerant (NaOH), and the column rinsate are great, which make the O&M costs for these systems high. Based on a comparative study for treatment of site groundwater for nitrate, reverse osmosis was determined to be the most economical method (Culligan, 1992). While both methods are equal in effectiveness, ion exchange is dropped from further consideration because of its higher cost.

### 3.3.5 Discharge

Three discharge alternatives were retained and are evaluated below.

**3.3.5.1 Surface Water.** Discharge to the Columbia River would entail the construction of a 1.61 km (1 mile) pipeline. Installation of a gravity-driven system would require extensive excavation. A pumped system would reduce excavation, but increase O&M costs. This system would have high initial capital costs when compared to other discharge systems and is not considered further.

**3.3.5.2 Reuse/Recycle.** After treatment, the water will meet MCL's and would be available for reuse or recycle. However, there currently is no demand for water and there is no expected future demand. Therefore, this discharge option is not pursued.

**3.3.5.3 Recharge.** Subsurface drains consist of perforated distribution pipes placed in a trench and surrounded by clean sand. Treated groundwater would by gravity fed or pumped to the pipes and the system would be sized to ensure that the flow out of each orifice would be equal to assure even distribution of the discharge. After being discharged, the effluent would percolate through site gravels and eventually would return to the aquifer. This system is readily implementable and very effective in homogenous aquifers with high permeability such as found at the site. The cost of this system is low compared to other discharge systems and is retained for consideration.

## 3.4 IN-SITU TREATMENT

Two physical in-situ treatments were retained after initial screening and are discussed below. In-situ biological methods are discussed in paragraph 3.5.

### 3.4.1 Aeration

In-situ aeration involves the pumping of air into the aquifer to induce the mass transfer of volatile organics to the gas phase. Typically this is done in vertical wells that are used as air strippers. Horizontal wells have been used to strip air in situ along a leaking pipeline. These systems can only treat limited areas of the plume (source or hot spots) efficiently. As the areal extent of the plume gets larger and the contaminant more dispersed, the number of wells required to effectively treat the area would be cost prohibitive. For these reasons this process option is not considered further.

### 3.4.2 Heating

In-situ heating would involve the injection of steam and air into the aquifer, again to induce the mass transfer of the organic contaminant into the gas phase. The principal here is that the contaminant is more readily strippable at higher temperatures. TCE is readily strippable without heating. This process option is dropped from consideration for the same reason as was in-situ aeration, which is that the areal extent of the plume is too great to economically employ this process.

## 3.5 BIOLOGICAL TREATMENT

Biological treatment refers to the use of microorganisms to decompose contaminants. This occurs both under aerobic conditions (in the presence of oxygen) and anaerobic or anoxic conditions (devoid of oxygen), depending on the nature of the microbes. Sometimes decomposition is direct, in that the microbe consumes the contaminant as a source of carbon, or other nutrient needed for growth. Or the microbe may produce enzymes that catalyze a chemical change in the contaminant (cometabolism). It is beneficial if the microbes needed for decomposition already exist in the aquifer (indigenous). Otherwise the microbes that are needed can be genetically derived or isolated in the laboratory. Regardless of the microbial origin, treatability studies are almost always conducted to be sure that the desired decomposition of the contaminant can be achieved without the production of hazardous byproducts.

In order to stimulate the growth of the decomposing organisms, air and nutrients (aerobic) or methane and nutrients (anaerobic), must be supplied. The quantities of these inducers are determined stoichiometrically. When biological treatment is conducted in situ, these materials are injected into the aquifer. A dilemma that is almost always faced in in-situ treatment is the potential for fouling the injection well. The microorganisms tend to flourish at the injection point resulting in clogged injectors and/or aquifer pores. Another problem

encountered is that the contaminant is forced away from the injection point, as the aquifer makes room for the injected materials.

Ex situ treatment requires that the aquifer be pumped, treated and then re-injected. Ex situ biological treatment is performed in a bioreactor. Similar to in-situ treatment, the inducers are injected into the reactor, which provides adequate mixing and detention time for decomposition of the contaminant to occur. Sludge is produced in the process. Consequently sludge handling facilities must be considered in the ex situ scenario.

In-situ biological treatment of TCE under aerobic conditions shows some promise. Research has determined that TCE can be completely mineralized to carbon dioxide, water, and chlorine in an aerobic environment. Aerobic processes require the presence of an inducing compound (an aromatic compound such as toluene or phenol), which may not be present. TCE is epoxidated by the enzyme methane monooxygenase, emitted by methylotrophic bacteria as they consume methane for energy (Russell *et al.*, 1992). Epoxidated TCE is very unstable, so hydrolization to various by-products is rapid (half life = 12 seconds in phosphate buffer with pH 7.7) (Miller and Guengerich, 1982).

One concern in an aerobic in-situ scenario is that the methane needed to stimulate the methylotrophs may be inhibitory to the TCE epoxidation (Russell *et al.*, 1992). Potentially, only a portion of the TCE would be epoxidated before being transported away in a flow situation.

Decomposition of TCE under anaerobic conditions is described as reductive dehalogenation. Under anaerobic conditions, TCE can function as an electron sink and is readily reduced by electrons (or reducing equivalents) formed as a result of the metabolism (oxidation) of the organic electron donors by members of the methanogenic consortia (Russell *et al.*, 1990/91). By introducing electron donors into the contaminated environment, TCE can be reduced. However, in the absence of adequate oxidizable organic compounds (*e.g.*, toluene), there is the potential to produce dichloroethylene and vinyl chloride (Bouwer and McCarty, 1983, and Bouwer *et al.*, 1981). Dichloroethylene is a suspected carcinogen and vinyl chloride is a known carcinogen. Therefore, if in-situ biological treatment in the anaerobic realm was selected, careful monitoring would be required to ensure that these compounds, particularly vinyl chloride are not produced.

Based on the discussion above, biologically treating TCE is not recommended at this time. Although evidence indicates that TCE can be biologically destroyed (cometabolized in an aerobic environment; reduced in an anaerobic environment), the practicality of providing the needed nutrients and inducers necessary for biological treatment in an in-situ environment is uncertain. Further, the inducers necessary for biological treatment, such as toluene or phenol in an aerobic environment, and toluene or acetone in an anaerobic environment, are themselves toxic. These organic contaminants are not present in the groundwater at this site, and injecting them for removal of TCE is not recommended. Also, in the anaerobic environment, there is potential to produce dichloroethylene and vinyl chloride as by-products (Russell *et al.*, 1990/91; Bouwer and McCarty, 1983; Bouwer *et al.*, 1981). As noted above, dichloroethylene is a suspected carcinogen and vinyl chloride is a known carcinogen.

Nitrate is reduced by a process known as denitrification. Denitrification is accomplished by facultative anaerobic microorganisms in an anoxic environment (Metcalf and Eddy, 1991). Denitrification is a two step process: 1) the conversion of nitrate to nitrite, and 2) production of nitric oxide, nitrous oxide and nitrogen gas. The last three compounds are gaseous compounds that can be released to the atmosphere.

An ex situ demonstration project at Hanford was performed to investigate denitrification of nitrates (Broun *et al.*, 1991). Both a continuous stirred-tank bioreactor and a fluidized bed bioreactor were used in the pilot scale test. Results of the study indicate that microorganisms native to the Hanford site are capable of reducing nitrates to below the drinking water standard when supplied with an electron donor such as acetate (Broun, *et al.*, 1991). In-situ denitrification is being investigated. A pilot scale study has been initiated at Hanford but no results have been reported to date.

The use of biological treatment for in-situ treatment of nitrates is still experimental. An organic inducer would be required to stimulate denitrification. Ex situ treatment has been investigated with positive results. Should the aquifer be treated ex situ, bioremediation of nitrate may be possible. A pilot test has been completed at Hanford using both continuous stirred tank and fluidized bed reactors (Broun *et al.*, 1991). Both reactors were able to reduce the influent nitrate concentration to below the drinking water standard (10 mg/L), with the fluidized bed reactor showing the best results. However, biological denitrification has several undesirable features. First, the process requires careful control to prevent bacterial and organic inducer breakthrough. Commonly the inducer itself is a hazardous chemical and even though low concentrations would be needed, system failure could result in the discharge of this substance to the environment. Secondly, the biological mass takes considerable time to develop and stabilize; system upsets in which this mass is lost would cause extended shutdowns of the system. For these reasons, biological nitrate removal is not considered further.

## 4.0 REFERENCES

ATTIC - No. RM00468, *Reductive Dechloriniation of Polychlorinated Biphenyls by Anaerobic Microorganisms from Sediments*, 1992.

Benefield, L.D., J.F. Judkins, and B.L. Weand, *Process Chemistry for Water and Wastewater Treatment*, Prentice-Hall Inc., Englewood Cliffs, New Jersey, 1982.

Biotrol , 1992, Personal communications with Pamela Sheehan, Biotrol, Inc., Chaska, Minnesota, August, 1992.

Bouwer and McCarty, 1983, *Transformations of 1- and 2- Carbon Halogenated Aliphatic Organic Compounds Under Methanogenic Conditions,* Applied Environmental Microbiology, 45:1286-1294.

Bouwer *et al.*, 1981, *Anaerobic Degradation of Halogenated 1- and 2- Carbon Organic Compounds*, Environmental Science and Technology, 15:596-599.

Brouns et al, *Biological Treatment of Hanford Ground Water: Development of an Ex-Situ Treatment Process*, Gov. Doc. DE91010008, March 1991.

Clark, R.M., R.G. Eilers, and J.A. Goodrich; *VOCs in Drinking Water: Cost of Removal*; Journal of Environmental Engineering; Vol. 110, No. 6; December 1984.

Clark, R.M., G.A. Frank, and B.W. Lykins, Jr.; *Removing Organic Contaminants from Groundwater*; Environmental Science and Technology; Vol. 22, No. 10; 1988.

Culligan, September and October 1992, Personal communications with Frank Rouse from Culligan of Yakima, Washington.

Eckenfelder, W.W., Jr., 1989, *Industrial Water Pollution Control*, McGraw-Hill Book Company, New York, New York.

EPA, 1989, *Final Covers on Hazardous Waste Landfills and Surface Impoundments*, U.S. Environmental Protection Agency EPA 530-SW-89-047, Washington, D.C.

EPA, 1990a, *Chemical Dehalogenation Treatment: APEF Treatment*, U.S. Environmental Protection Agency EPA/540/2-90/015, Washington D.C.

EPA, 1990b, *Handbook on In-situ Treatment of Hazardous Waste-Contaminated Soils*, U.S. Environmental Protection Agency EPA/540/2-90/002, Washington, D.C.

EPA, 1990c, *Site Technology Profile - ULTROX International*, U.S. Environmental Protection Agency EPA/540/5-90/006, Washington, D.C.

EPA, 1991a, *Innovative Treatment Technologies: Overview and Guide to Information Sources*, U.S. Environmental Protection Agency EPA/540/9-91/002, Washington, D.C.

EPA, 1991b, *Mobile/Transportable Incinerator Equipment*, U.S. Environmental Protection Agency EPA/540/2-90/014, Washington, D.C.

Galson, 1992, Personal Communication with Robert Peterson, Galson Remediation Corporation, East Syracuse, New York, September 1992.

GII, 1991, *Treatment Technologies Second Edition*, Government Institutes, Inc., Rockville, Maryland.

Miller, G. C., and F.P. Guengerich, 1982. *Oxidation of Trichlorethylene by Liver Micorsinak Cytochronc P-450: Evidence for Chlorine Migration in a Transition State Involving Trichlorethylene Oxide*, Biochemistry 21: 1090-1097.

PNL, 1992, Personal Communications with Joe Perez, Pacific Northwest Laboratories, Richland, Washington, September, 1992.

PNL, 1988, *Vitrification Technologies for Weldon Springs Raffinate Sludges and Contaminated Soils Phase I Report: Development of Alternatives, Pacific Northwest Laboratory*, PNL-6704, Richland, Washington.

Russell, H.H., J.E. Matthews, and G.W. Sewell, Winter 1990-91, *Remediation of Sites Contaminated With TCE*, Remediation.

Sorg, T.J., February 1978, *Treatment Technologies to Meet the Interim Primary Drinking Water Regulations for Inorganics*, Journal of the American Water Works Association.

Unterman, et al., 1988, *Biological Approaches for Polychlorinated Biphenyl Degradation*, pp 253-269. In: G.S. Omenn (ed.), Environmental Biotechnology-Reading Risks from Environmental Chemicals through Biotechnology, Plenum Press, New York.

Westates Carbon, 1992, Personal communication with Charles Wells, Westates Carbon, Inc., Los Angeles, California, September 1992.

WHC, 1992. Personal communications with Tim Moody, Westinghouse Hanford Corporation, Richland, Washington, June through October 1992.

WST, 1992. Personal communications with Brian Schepart, Waste Stream Technology, Buffalo, New York, September through October 1992.

THIS PAGE INTENTIONALLY
LEFT BLANK

# APPENDIX O

# INSTITUTIONAL CONTROLS ASSESSMENT

This page left intentionally blank.

9 3 1 2 3 5 2 1 3 2 0

## APPENDIX O CONTENTS

1.0 INTRODUCTION . . . . . O-1

2.0 SECURITY AT HANFORD . . . . . O-1

3.0 CONTROL OF SITE DEVELOPMENT . . . . . O-1
- 3.1 GENERAL . . . . . O-1
- 3.2 SITE EVALUATION REPORT . . . . . O-2
- 3.3 SITE SELECTION TEAM . . . . . O-2
- 3.4 CONTROLLED MAPS OF HAZARDOUS AREAS . . . . . O-2

4.0 CITY OF RICHLAND WATER WELL CONTROL . . . . . O-5
- 4.1 GENERAL . . . . . O-5
- 4.2 EFFECTIVENESS OF CITY CONTROLS . . . . . O-5

5.0 EFFECTIVENESS OF INSTITUTIONAL CONTROLS . . . . . O-5

### TABLE

Table O-1 Hanford Facilities Site Selection Board Members List as of October 1992 . . . . . O-4

### FIGURE

Figure O-1 Site Development Review and Selection System . . . . . O-3

This page left intentionally blank.

## 1.0 INTRODUCTION

Controlling public access to and preventing development of hazardous waste sites are important institutional control issues. The types of controls that are appropriate for hazardous waste sites are commonly practiced at Hanford. Security at Hanford provides for the protection of Government property in accordance with Department of Energy (DOE) DOE Order 5632.6. Additionally, each site is closely investigated and reviewed prior to selection for development. In the event that DOE should release this property, Federal regulations require removal/cleanup of any remaining wastes or restrictions on the use of the land to avoid any Government liability associated with the wastes (41 CFR, 101-47-401-4, Federal Property Management Regulation).

In addition to the institutional controls at Hanford, the City of Richland has an ordinance (promulgated in 1985) that requires a permit for all wells. The City of Richland will not issue a permit for wells providing water for human consumption. The intent of this ordinance is to ensure that all human consumption of water within the city would be from the city's water supply system. This ordinance works to prevent human exposure to contaminated groundwater by requiring residents to utilize the city water system. There are no known contaminated groundwater plumes emanating from waste sites in the 1100-EM-1 Operable Unit which threaten residential areas. In the event that changes to the ownership and use of land in the 1100 Area occurred at some point in the future, city ordinances would play a part in institutional controls.

## 2.0 SECURITY AT HANFORD

Protection of DOE property in accordance with DOE Order 5632.6, requires a site security plan and includes provisions for access control, physical barriers, and intrusion detection. This order is not specific to hazardous waste sites, but many of the provisions can be adapted to the institutional controls needed for these sites. Fencing, posting of trespassing signs, and including the gate lock (and associated keys) in the security accountability system are performed in accordance with the security procedures at Hanford. Additionally, any unauthorized intrusion into DOE property protected by a fence exposes the trespasser to prosecution of a misdemeanor and may be subject to fines or imprisonment under Title 42, United States Code section 2278 (a) and Title 18, United States Code section 3571.

## 3.0 CONTROL OF SITE DEVELOPMENT

### 3.1 GENERAL

There are three control measures currently in place at Hanford that would preclude the inappropriate development of a hazardous waste site within the Hanford Reservation. These measures include the investigation and evaluation of a potential development site and the development of a Site Evaluation Report; a review of that report by the Site Selection Team; and the review of controlled maps showing the location of hazardous areas. These control measures are described in more detail in the following sections.

## 3.2 SITE EVALUATION REPORT

The DOE-RL Order 4320.2C, Site Selection Process for Hanford Facilities, requires that all land developments, disturbances, or improvements be evaluated. The existing process that implements this order is shown on figure O-1 and requires an investigation and report for each site. In the case of simple sites, an evaluation letter may be issued that would eliminate the full scale report requirement. The site evaluation format has been established and requires evaluation of safety concerns and utility provisions. This investigation and reporting process should preclude development of a site contaminated with hazardous wastes.

## 3.3 SITE SELECTION TEAM

Each site evaluation report or letter is reviewed by a multidisciplinary review board having a wide range of knowledge and expertise. This board reviews the adequacy of the investigation and the process of evaluating the site. The team members represent a cross section of organizations (see list of current board members in table O-1). The wide range of disciplines and backgrounds represented by the review board helps ensure that an adequate investigation of the site is conducted.

## 3.4 CONTROLLED MAPS OF HAZARDOUS AREAS

Maps of hazardous areas are maintained and held on record at the Westinghouse Hanford Company Design Engineering Services office. Records and maps are maintained in groups such as burial grounds, tank farms, grout facilities, buildings, *etc*. The burial ground maps are maintained as part of the Resource Conservation and Recovery Act (RCRA), Part A and Part B permits for the site, and any changes to or deletion of information on the maps is accomplished through a formal system of review and approval process controlled by the Waste Management office. Changes to these burial ground drawings require coordination with Ecology. It is possible that information on hazardous waste sites could be included on these drawings and any changes controlled through this existing system. If the hazardous waste sites are not included with the RCRA drawings, then the current system for controlling other drawings consists of restrictions on persons having authority to change drawings and an automatic system of recording and tracking any changes made to a drawing. Either of these systems would provide an easily accessible record showing the location of hazardous waste sites, thereby reducing the opportunity for constructing a facility in a hazardous waste area. Selected members of the Site Selection Team have access to the drawings and may receive automatic, weekly updates.

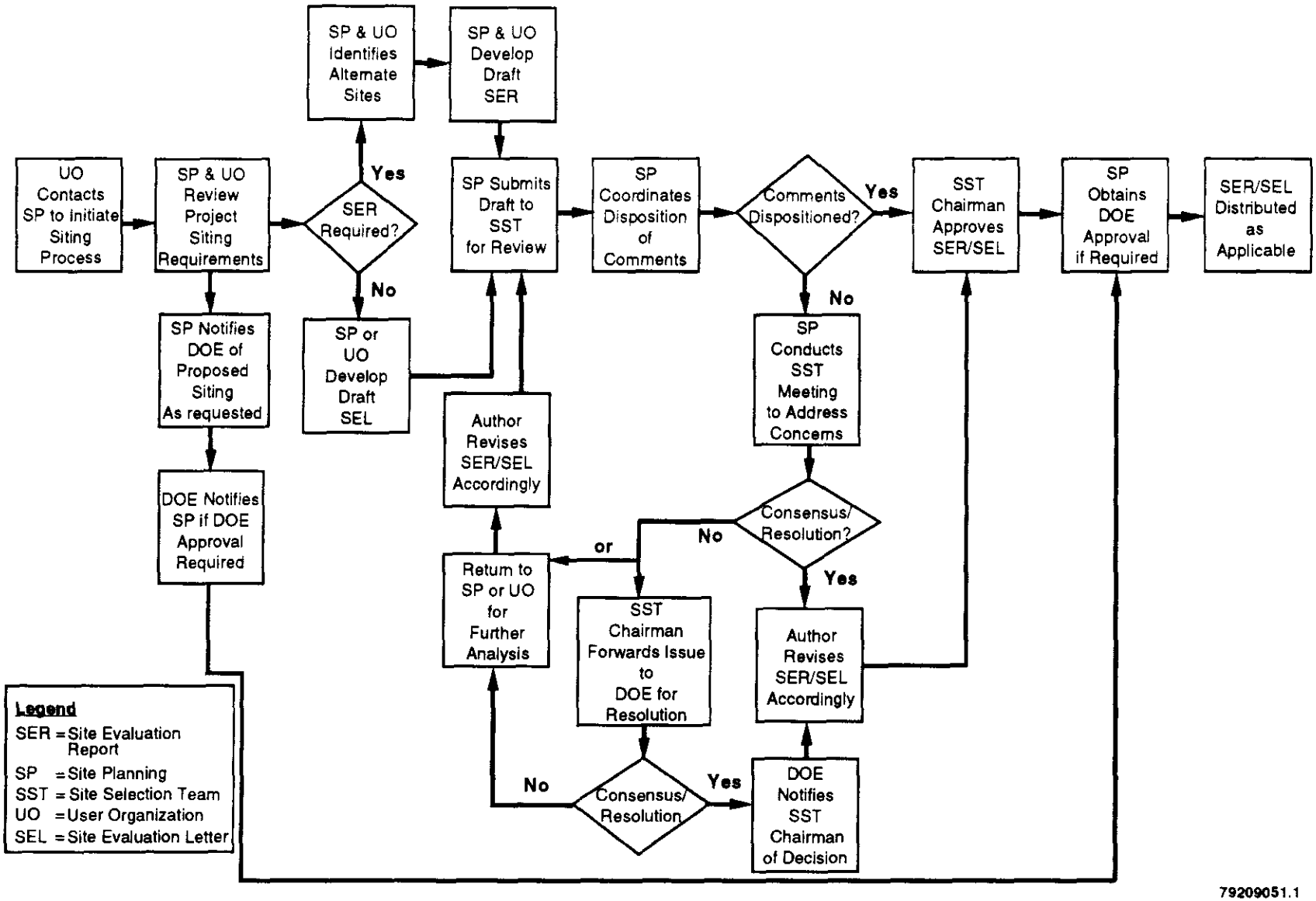


Figure 0-1. Site Development Review and Selection System

**Table O-1. Hanford Facilities Site Selection Board Members List as of October 1992**

| NAME | ORGANIZATION |
|---|---|
| | **Organizational Representatives** |
| G. F. Brazil | Kaiser Engineers Hanford |
| T. W. Campbell | Operations Support Services (OSS) (Safeguards and Security) |
| G. L. Crawford | Tank Waste Remediation |
| J. J. Dorian | Environment, Safety, Health & QA (Environmental - Assurance, Waste Tank, System & Audit Integration) |
| T. E. Gates | Engineered Applications |
| J. C. Hail | Battelle |
| W. F. Heine | Restoration and Remediation |
| C. M. Kronvall | Facility Operations |
| R. D. Lichfield | Environment, Safety, Health & QA (Fire Protection Program) |
| R. C. Roos | Restoration & Remediation |
| H. H. Yoshikawa | Resource Planning & Program Integration |
| | **Infrastructure Representatives** |
| F. R. Buck | Boeing Computer Services Richland/Information Resource Management - Telecommunications |
| J. M. Hache | WHC/OSS - Electrical Utilities |
| F. D. Howald | WHC/OSS - Fire Department |
| D. A. Rohl | WHC/OSS - Water Utilities |
| J. S. Stair | WHC/OSS - Sanitary Sewer Systems |
| G. L. Wiggins | WHC/OSS - Roads and Transportation |

**Note:** Positions on the Team frequently change. The list above serves as an example of the type of persons and positions on the Team.

# 4.0 CITY OF RICHLAND WATER WELL CONTROL

## 4.1 GENERAL

The City of Richland's institutional control of the water supply system has limited applicability in the evaluation of the 1100-EM-1 Operable Unit because no 1100-EM-1 waste sites are located upgradient of residential areas. Only if DOE surplused portions of the 1100-EM-1 Operable Unit containing wastes, and if residences were then constructed (in an industrial-zoned area) downgradient of the wastes, would the city's control of the water supply system become important.

## 4.2 EFFECTIVENESS OF CITY CONTROLS

The intent of the city of Richland's water well permit system is to require all residents to connect to the city water supply system for human consumption of water. During the Phase II Remedial Investigation, a survey was conducted (WHC, 1991) to determine the number of private wells and how the water from these wells was utilized. Of a potential 42 residential wells that are suspected to exist in the North Richland area, 16 wells were not permitted [2 of the wells were abandoned or unused and 14 were installed prior to 1985 (promulgation of city ordinance)]. Of these wells, no more than four may be used for domestic purposes. This indicates that, currently, there is little exposure to the natural groundwater and that the city's well permit system provides an additional safeguard against exposure to groundwater contamination.

# 5.0 EFFECTIVENESS OF INSTITUTIONAL CONTROLS

The current controls in place at Hanford should effectively prevent human exposure in the event that contaminants remain in place at hazardous waste sites. Access control to the waste sites can be accomplished in accordance with the available security procedures at Hanford. As an added safety factor, the City of Richland ordinance requires wells to be permitted. The city's control of the groundwater is an additional safety measure that can be considered if property ownership and land use changes radically in the future.

THIS PAGE INTENTIONALLY
LEFT BLANK

# APPENDIX P

# ALTERNATIVE COST ESTIMATES

9 3 1 2 3 2 1 3 2 3

THIS PAGE INTENTIONALLY
LEFT BLANK

## APPENDIX P CONTENTS

Alternative cost estimates for:

EPHEMERAL POOL, OFFSITE DISPOSAL

HORN RAPIDS LANDFILL, OFFSITE DISPOSAL

HORN RAPIDS LANDFILL, WAC CAP

HORN RAPIDS LANDFILL, ASBESTOS CAP

UN-1100-6, ONSITE INCINERATION

EPHEMERAL POOL, ONSITE INCINERATION

HORN RAPIDS LANDFILL, ONSITE INCINERATION

EPHEMERAL POOL, OFFSITE INCINERATION

UN-1100-6, OFFSITE INCINERATION

HORN RAPIDS LANDFILL, OFFSITE INCINERATION

UN-1100-6, BIOREMEDIATION

GROUNDWATER REMEDIATION, MONITORING WELLS

GROUNDWATER REMEDIATION, 100 GPM AIR STRIPPING

GROUNDWATER REMEDIATION, 100 GPM UV OXIDATION

GROUNDWATER REMEDIATION, 300 GPM AIR STRIPPING

GROUNDWATER REMEDIATION, 300 GPM UV OXIDATION

GROUNDWATER REMEDIATION, 1,000 GPM AIR STRIPPING

GROUNDWATER REMEDIATION, 1,000 GPM UV OXIDATION

THIS PAGE INTENTIONALLY
LEFT BLANK

DOE/RL-92-67

# EPHEMERAL POOL
# OFFSITE DISPOSAL

9 3 1 2 8 2 1 3 3 0

THIS PAGE [illegible]
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
EPHEMERAL POOL
OFF-SITE DISPOSAL

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/13/92

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 OU Baseline Estimate

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation

In this MCACES estimate project breakdown, the first level, "06", represent Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. See Contingency Notes for explanation of Contingency percentages. S & A is estimated at 15%. See Detail notes (pg. 1) for explanation of overhead percentages used.

This estimate covers the Off-site Disposal alternative for the PCB soils in the Ephemeral Pool area. Assuming off-site disposal will be at the Arlington, OR, site.

1. Contingency is based on uncertainty of amount of time required to do the work represented in the estimate,etc.

2. Contingency is based on the uncertainty of the quantites presented.

3. Contingency based on the unit costs obatained by Vendor and therefore may be different by the time work will actually be accomplished.

THIS PAGE INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 5.....1
PROJECT OWNER SUMMARY - LEVEL 6.....4
PROJECT INDIRECT SUMMARY - LEVEL 5.....8
PROJECT INDIRECT SUMMARY - LEVEL 6.....11

DETAILED ESTIMATE DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION AND PREPATORY WORK
01. MOB OF EQUIPMENT & PERSONNEL
1. TRANSPORTATION
01-. Ph I, Equip Mob, Detailed List.....1
02-. Ph II, Equip Mob, Detailed List.....2
03. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Ph I, Office Trailers - setup.....3
02. Ph II, Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
03. Ph I, Trailers - assbly/setup.....4
04. Ph II, Trailers - assbly/setup.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
06. SAMPLING SOIL, SED & SOLID WASTE
01. SURFACE SOIL
01. PHASE I, Soil Sample
01. Soil Sampling.....5
02. QA Report.....5
02. PHASE II, Soil Sample
01. Soil Sampling.....6
02. QA Report.....6
03. SITE WORK
05. FENCING
03. FENCING
01. Temporary Fencing
01. Temporary Fencing - 6' Security.....7
08. SOLID WASTE COLLECT/CONTAINMENT
01. EXCAVATION
03. CONTAMINATED SOIL
01. PHASE I, Excavate/Load PCB Soils
01. Excavate/Load PCB Soils.....8
02. Transport PCB Soils - Arlington.....8
03. PPEquip, Class D.....8
02. PHASE II,Excavate/Load PCB Soils
01. Excavate/Load PCB Soils.....10
02. Transport PCB Soils - Arlington.....10
03. PPEquip, Class D.....10
03. Post Removal
01. Excavate/Load Crew.....12
02. PPEquip, Class D.....12

DETAILED ESTIMATE DETAIL PAGE

91. Safety and Quality Assurance.....13
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. PH I, Demob and take down.....14
02. PH II, Demob and Take down.....14

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | 2,710 | 410 | 620 | 3,730 | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | 2,710 | 410 | 620 | 3,730 | | |
| TRANSPORTATION | | 5,410 | 810 | 1,240 | 7,470 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 5,410 | 810 | 1,240 | 7,470 | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | 100.00 HR | 3,790 | 570 | 870 | 5,230 | 52.28 | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | 100.00 HR | 3,790 | 570 | 870 | 5,230 | 52.28 | |
| TRAILERS AND BUILDINGS | | 7,580 | 1,140 | 1,740 | 10,460 | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | 120.00 HR | 4,550 | 680 | 1,050 | 6,270 | 52.28 | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | 120.00 HR | 4,550 | 680 | 1,050 | 6,270 | 52.28 | |
| DECONTAMINATION FACILITIES | | 9,090 | 1,360 | 2,090 | 12,550 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 16,670 | 2,500 | 3,830 | 23,000 | | |
| MOBILIZATION AND PREPATORY WORK | | 22,080 | 3,310 | 5,080 | 30,470 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | 60.00 EA | 43,470 | 6,520 | 10,000 | 59,980 | 999.74 | |
| 06 02 06 01 02 PHASE II, Soil Sample | 60.00 EA | 53,440 | 8,020 | 12,290 | 73,740 | 1229.03 | |
| SURFACE SOIL | | 96,900 | 14,540 | 22,290 | 133,730 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 96,900 | 14,540 | 22,290 | 133,730 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| MONITOR, SAMPLE, TEST, ANALYSIS | | 96,900 | 14,540 | 22,290 | 133,730 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |
| 06 03 05 03 FENCING | | | | | | | |
| 06 03 05 03 01 Temporary Fencing | 750.00 LF | 24,920 | 3,740 | 5,730 | 34,390 | 45.86 | |
| FENCING | | 24,920 | 3,740 | 5,730 | 34,390 | | |
| FENCING | | 24,920 | 3,740 | 5,730 | 34,390 | | |
| SITE WORK | | 24,920 | 3,740 | 5,730 | 34,390 | | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | 230.00 CY | 86,890 | 13,030 | 25,280 | 125,210 | 544.38 | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | 110.00 CY | 42,070 | 6,310 | 12,240 | 60,620 | 551.09 | |
| 06 08 01 03 03 Post Removal | | 1,740 | 260 | 500 | 2,500 | | |
| 06 08 01 03 91 Safety and Quality Assurance | 3.00 WK | 20,740 | 3,110 | 4,770 | 28,620 | 9538.78 | |
| CONTAMINATED SOIL | | 151,440 | 22,720 | 42,790 | 216,940 | | |
| EXCAVATION | | 151,440 | 22,720 | 42,790 | 216,940 | | |
| SOLID WASTE COLLECT/CONTAINMENT | | 151,440 | 22,720 | 42,790 | 216,940 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | 8,060 | 1,210 | 1,850 | 11,130 | | |
| 06 21 04 01 02 PH II, Demob and Take down | | 8,060 | 1,210 | 1,850 | 11,130 | | |
| TRANSPORTATION | | 16,120 | 2,420 | 3,710 | 22,250 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 16,120 | 2,420 | 3,710 | 22,250 | | |
| DEMOBILIZATION | | 16,120 | 2,420 | 3,710 | 22,250 | | |

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT EPHOFF: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, EPHEMERAL POOL OFF-SITE DISPOSAL
** PROJECT OWNER SUMMARY - LEVEL 5 (Rounded to 10's) **

TIME 09:21:02



| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| REMEDIAL ACTION | | 311,460 | 46,720 | 79,600 | 437,780 | | |
| HANFORD: REMEDIATION | | 311,460 | 46,720 | 79,600 | 437,780 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | | |
| Ph I, Equip Mob, Detailed List | | 2,710 | 410 | 620 | 3,730 | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | | |
| Ph II, Equip Mob, Detailed List | | 2,710 | 410 | 620 | 3,730 | | |
| TRANSPORTATION | | 5,410 | 810 | 1,240 | 7,470 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 5,410 | 810 | 1,240 | 7,470 | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | | |
| Ph I, Office Trailers - setup | 100.00 HR | 3,790 | 570 | 870 | 5,230 | 52.28 | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | | |
| Ph II, Office Trailers - setup | 100.00 HR | 3,790 | 570 | 870 | 5,230 | 52.28 | |
| TRAILERS AND BUILDINGS | | 7,580 | 1,140 | 1,740 | 10,460 | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Ph I, Trailers - assbly/setup | 120.00 HR | 4,550 | 680 | 1,050 | 6,270 | 52.28 | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 HR | 4,550 | 680 | 1,050 | 6,270 | 52.28 | |
| DECONTAMINATION FACILITIES | | 9,090 | 1,360 | 2,090 | 12,550 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 16,670 | 2,500 | 3,830 | 23,000 | | |
| MOBILIZATION AND PREPATORY WORK | | 22,080 | 3,310 | 5,080 | 30,470 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 39,880 | 5,980 | 9,170 | 55,030 | 917.19 | 1 |
| 06 02 06 01 01 02 QA Report | | 3,590 | 540 | 830 | 4,950 | | 1 |
| PHASE I, Soil Sample | 60.00 EA | 43,470 | 6,520 | 10,000 | 59,980 | 999.74 | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 49,850 | 7,480 | 11,460 | 68,790 | 1146.49 | 1 |
| 06 02 06 01 02 02 QA Report | | 3,590 | 540 | 830 | 4,950 | | 1 |
| PHASE II, Soil Sample | 60.00 EA | 53,440 | 8,020 | 12,290 | 73,740 | 1229.03 | |
| SURFACE SOIL | | 96,900 | 14,540 | 22,290 | 133,730 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 96,900 | 14,540 | 22,290 | 133,730 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 96,900 | 14,540 | 22,290 | 133,730 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |
| 06 03 05 03 FENCING | | | | | | | |
| 06 03 05 03 01 Temporary Fencing | | | | | | | |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| 06 03 05 03 01 01 | Temporary Fencing - 6' Security | 750.00 LF | 24,920 | 3,740 | 5,730 | 34,390 | 45.86 | |
| | Temporary Fencing | 750.00 LF | 24,920 | 3,740 | 5,730 | 34,390 | 45.86 | |
| | FENCING | | 24,920 | 3,740 | 5,730 | 34,390 | | |
| | FENCING | | 24,920 | 3,740 | 5,730 | 34,390 | | |
| | SITE WORK | | 24,920 | 3,740 | 5,730 | 34,390 | | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | | |
| 06 08 01 03 01 01 | Excavate/Load PCB Soils | 230.00 CY | 1,760 | 260 | 810 | 2,830 | 12.30 | 2 |
| 06 08 01 03 01 02 | Transport PCB Soils - Arlington | 230.00 CY | 83,610 | 12,540 | 24,040 | 120,180 | 522.54 | 2,3 |
| 06 08 01 03 01 03 | PPEquip, Class D | 3.00 DAY | 1,530 | 230 | 440 | 2,200 | 731.67 | 1 |
| | PHASE I, Excavate/Load PCB Soils | 230.00 CY | 86,890 | 13,030 | 25,280 | 125,210 | 544.38 | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | | |
| 06 08 01 03 02 01 | Excavate/Load PCB Soils | 110.00 CY | 840 | 130 | 390 | 1,350 | 12.30 | 1,2 |
| 06 08 01 03 02 02 | Transport PCB Soils - Arlington | 110.00 CY | 40,210 | 6,030 | 11,560 | 57,800 | 525.48 | 2,3 |
| 06 08 01 03 02 03 | PPEquip, Class D | 2.00 DAY | 1,020 | 150 | 290 | 1,460 | 731.67 | 1 |
| | PHASE II,Excavate/Load PCB Soils | 110.00 CY | 42,070 | 6,310 | 12,240 | 60,620 | 551.09 | |
| 06 08 01 03 03 Post Removal | | | | | | | | |
| 06 08 01 03 03 01 | Excavate/Load Crew | 1.00 DAY | 1,230 | 180 | 350 | 1,770 | 1769.02 | 1 |
| 06 08 01 03 03 02 | PPEquip, Class D | 1.00 DAY | 510 | 80 | 150 | 730 | 731.67 | 1 |
| | Post Removal | | 1,740 | 260 | 500 | 2,500 | | |
| 06 08 01 03 91 Safety and Quality Assurance | | | | | | | | |
| | Safety and Quality Assurance | 3.00 WK | 20,740 | 3,110 | 4,770 | 28,620 | 9538.78 | |
| | CONTAMINATED SOIL | | 151,440 | 22,720 | 42,790 | 216,940 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| EXCAVATION | | 151,440 | 22,720 | 42,790 | 216,940 | | |
| SOLID WASTE COLLECT/CONTAINMENT | | 151,440 | 22,720 | 42,790 | 216,940 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | | | | | | |
| PH I, Demob and take down | | 8,060 | 1,210 | 1,850 | 11,130 | | |
| 06 21 04 01 02 PH II, Demob and Take down | | | | | | | |
| PH II, Demob and Take down | | 8,060 | 1,210 | 1,850 | 11,130 | | |
| TRANSPORTATION | | 16,120 | 2,420 | 3,710 | 22,250 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 16,120 | 2,420 | 3,710 | 22,250 | | |
| DEMOBILIZATION | | 16,120 | 2,420 | 3,710 | 22,250 | | |
| REMEDIAL ACTION | | 311,460 | 46,720 | 79,600 | 437,780 | | |
| HANFORD: REMEDIATION | | 311,460 | 46,720 | 79,600 | 437,780 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,710 | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,710 | |
| TRANSPORTATION | | 4,070 | 610 | 230 | 390 | 50 | 50 | 5,410 | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,070 | 610 | 230 | 390 | 50 | 50 | 5,410 | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | 37.88 |
| 06 01 03 01 02 Ph II, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | 37.88 |
| TRAILERS AND BUILDINGS | | 5,700 | 860 | 330 | 550 | 70 | 80 | 7,580 | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 40 | 50 | 4,550 | 37.88 |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 40 | 50 | 4,550 | 37.88 |
| DECONTAMINATION FACILITIES | | 6,840 | 1,030 | 390 | 660 | 80 | 90 | 9,090 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 12,540 | 1,880 | 720 | 1,210 | 150 | 170 | 16,670 | |
| MOBILIZATION AND PREPATORY WORK | | 16,610 | 2,490 | 960 | 1,600 | 200 | 220 | 22,080 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | 60.00 EA | 32,700 | 4,910 | 1,880 | 3,160 | 390 | 430 | 43,470 | 724.45 |
| 06 02 06 01 02 PHASE II, Soil Sample | 60.00 EA | 40,200 | 6,030 | 2,310 | 3,880 | 480 | 530 | 53,440 | 890.60 |
| SURFACE SOIL | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |

| | | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |
| 06 03 | SITE WORK | | | | | | | | | |
| 06 03 05 | FENCING | | | | | | | | | |
| 06 03 05 03 | FENCING | | | | | | | | | |
| 06 03 05 03 01 | Temporary Fencing | 750.00 LF | 18,750 | 2,810 | 1,080 | 1,810 | 230 | 250 | 24,920 | 33.23 |
| | FENCING | | 18,750 | 2,810 | 1,080 | 1,810 | 230 | 250 | 24,920 | |
| | FENCING | | 18,750 | 2,810 | 1,080 | 1,810 | 230 | 250 | 24,920 | |
| | SITE WORK | | 18,750 | 2,810 | 1,080 | 1,810 | 230 | 250 | 24,920 | |
| 06 08 | SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | |
| 06 08 01 | EXCAVATION | | | | | | | | | |
| 06 08 01 03 | CONTAMINATED SOIL | | | | | | | | | |
| 06 08 01 03 01 | PHASE I, Excavate/Load PCB Soils | 230.00 CY | 65,370 | 9,810 | 3,760 | 6,310 | 780 | 860 | 86,890 | 377.78 |
| 06 08 01 03 02 | PHASE II,Excavate/Load PCB Soils | 110.00 CY | 31,650 | 4,750 | 1,820 | 3,060 | 380 | 420 | 42,070 | 382.45 |
| 06 08 01 03 03 | Post Removal | | 1,310 | 200 | 80 | 130 | 20 | 20 | 1,740 | |
| 06 08 01 03 91 | Safety and Quality Assurance | 3.00 WK | 15,600 | 2,340 | 900 | 1,510 | 190 | 210 | 20,740 | 6912.16 |
| | CONTAMINATED SOIL | | 113,920 | 17,090 | 6,550 | 11,010 | 1,370 | 1,500 | 151,440 | |
| | EXCAVATION | | 113,920 | 17,090 | 6,550 | 11,010 | 1,370 | 1,500 | 151,440 | |
| | SOLID WASTE COLLECT/CONTAINMENT | | 113,920 | 17,090 | 6,550 | 11,010 | 1,370 | 1,500 | 151,440 | |
| 06 21 | DEMOBILIZATION | | | | | | | | | |
| 06 21 04 | DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 | TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 | PH I, Demob and take down | | 6,070 | 910 | 350 | 590 | 70 | 80 | 8,060 | |
| 06 21 04 01 02 | PH II, Demob and Take down | | 6,070 | 910 | 350 | 590 | 70 | 80 | 8,060 | |
| | TRANSPORTATION | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |
| | DEMOB OF EQUIPMENT & PERSONNEL | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |
| | DEMOBILIZATION | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| REMEDIAL ACTION | | 234,310 | 35,150 | 13,470 | 22,630 | 2,810 | 3,080 | 311,460 | |
| HANFORD: REMEDIATION | | 234,310 | 35,150 | 13,470 | 22,630 | 2,810 | 3,080 | 311,460 | |
| S & A | | | | | | | | 46,720 | |
| SUBTOTAL | | | | | | | | 358,180 | |
| CONTINGENCY | | | | | | | | 79,600 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 437,780 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | | | | |
| Ph I, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,710 | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | | | | |
| Ph II, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,710 | |
| TRANSPORTATION | | 4,070 | 610 | 230 | 390 | 50 | 50 | 5,410 | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,070 | 610 | 230 | 390 | 50 | 50 | 5,410 | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | | | | |
| Ph I, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | 37.88 |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | | | | |
| Ph II, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | 37.88 |
| TRAILERS AND BUILDINGS | | 5,700 | 860 | 330 | 550 | 70 | 80 | 7,580 | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Ph I, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 40 | 50 | 4,550 | 37.88 |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 40 | 50 | 4,550 | 37.88 |
| DECONTAMINATION FACILITIES | | 6,840 | 1,030 | 390 | 660 | 80 | 90 | 9,090 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 12,540 | 1,880 | 720 | 1,210 | 150 | 170 | 16,670 | |
| MOBILIZATION AND PREPATORY WORK | | 16,610 | 2,490 | 960 | 1,600 | 200 | 220 | 22,080 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 30,000 | 4,500 | 1,720 | 2,900 | 360 | 390 | 39,880 | 664.63 |
| 06 02 06 01 01 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,590 | |
| PHASE I, Soil Sample | 60.00 EA | 32,700 | 4,910 | 1,880 | 3,160 | 390 | 430 | 43,470 | 724.45 |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 37,500 | 5,630 | 2,160 | 3,620 | 450 | 490 | 49,850 | 830.79 |
| 06 02 06 01 02 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,590 | |
| PHASE II, Soil Sample | 60.00 EA | 40,200 | 6,030 | 2,310 | 3,880 | 480 | 530 | 53,440 | 890.60 |
| SURFACE SOIL | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | | |
| 06 03 05 03 FENCING | | | | | | | | | |
| 06 03 05 03 01 Temporary Fencing | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 03 05 03 01 01 Temporary Fencing - 6' Security | 750.00 LF | 18,750 | 2,810 | 1,080 | 1,810 | 230 | 250 | 24,920 | 33.23 |
| Temporary Fencing | 750.00 LF | 18,750 | 2,810 | 1,080 | 1,810 | 230 | 250 | 24,920 | 33.23 |
| FENCING | | 18,750 | 2,810 | 1,080 | 1,810 | 230 | 250 | 24,920 | |
| FENCING | | 18,750 | 2,810 | 1,080 | 1,810 | 230 | 250 | 24,920 | |
| SITE WORK | | 18,750 | 2,810 | 1,080 | 1,810 | 230 | 250 | 24,920 | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | | | |
| 06 08 01 03 01 01 Excavate/Load PCB Soils | 230.00 CY | 1,320 | 200 | 80 | 130 | 20 | 20 | 1,760 | 7.64 |
| 06 08 01 03 01 02 Transport PCB Soils - Arlington | 230.00 CY | 62,900 | 9,430 | 3,620 | 6,080 | 750 | 830 | 83,610 | 363.50 |
| 06 08 01 03 01 03 PPEquip, Class D | 3.00 DAY | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | 508.99 |
| PHASE I, Excavate/Load PCB Soils | 230.00 CY | 65,370 | 9,810 | 3,760 | 6,310 | 780 | 860 | 86,890 | 377.78 |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | | | |
| 06 08 01 03 02 01 Excavate/Load PCB Soils | 110.00 CY | 630 | 90 | 40 | 60 | 10 | 10 | 840 | 7.64 |
| 06 08 01 03 02 02 Transport PCB Soils - Arlington | 110.00 CY | 30,250 | 4,540 | 1,740 | 2,920 | 360 | 400 | 40,210 | 365.55 |
| 06 08 01 03 02 03 PPEquip, Class D | 2.00 DAY | 770 | 110 | 40 | 70 | 10 | 10 | 1,020 | 508.99 |
| PHASE II,Excavate/Load PCB Soils | 110.00 CY | 31,650 | 4,750 | 1,820 | 3,060 | 380 | 420 | 42,070 | 382.45 |
| 06 08 01 03 03 Post Removal | | | | | | | | | |
| 06 08 01 03 03 01 Excavate/Load Crew | 1.00 DAY | 930 | 140 | 50 | 90 | 10 | 10 | 1,230 | 1230.62 |
| 06 08 01 03 03 02 PPEquip, Class D | 1.00 DAY | 380 | 60 | 20 | 40 | 0 | 10 | 510 | 508.99 |
| Post Removal | | 1,310 | 200 | 80 | 130 | 20 | 20 | 1,740 | |
| 06 08 01 03 91 Safety and Quality Assurance | | | | | | | | | |
| Safety and Quality Assurance | 3.00 WK | 15,600 | 2,340 | 900 | 1,510 | 190 | 210 | 20,740 | 6912.16 |
| CONTAMINATED SOIL | | 113,920 | 17,090 | 6,550 | 11,010 | 1,370 | 1,500 | 151,440 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| EXCAVATION | | 113,920 | 17,090 | 6,550 | 11,010 | 1,370 | 1,500 | 151,440 | |
| SOLID WASTE COLLECT/CONTAINMENT | | 113,920 | 17,090 | 6,550 | 11,010 | 1,370 | 1,500 | 151,440 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | | | | | | | | |
| PH I, Demob and take down | | 6,070 | 910 | 350 | 590 | 70 | 80 | 8,060 | |
| 06 21 04 01 02 PH II, Demob and Take down | | | | | | | | | |
| PH II, Demob and Take down | | 6,070 | 910 | 350 | 590 | 70 | 80 | 8,060 | |
| TRANSPORTATION | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |
| DEMOBILIZATION | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |
| REMEDIAL ACTION | | 234,310 | 35,150 | 13,470 | 22,630 | 2,810 | 3,080 | 311,460 | |
| HANFORD: REMEDIATION | | 234,310 | 35,150 | 13,470 | 22,630 | 2,810 | 3,080 | 311,460 | |
| S & A | | | | | | | | 46,720 | |
| SUBTOTAL | | | | | | | | 358,180 | |
| CONTINGENCY | | | | | | | | 79,600 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 437,780 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION AND PREPATORY WORK
06 01 01. MOB OF EQUIPMENT & PERSONNEL
06 01 01 1. TRANSPORTATION
06 01 01 1 01-. Ph I, Equip Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 3235 > | Mob, FEnd Ldr, wheel 1-1/2-3 cy Atriculated Fr, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 6115 > | Mob, Dozer, Crawler, 50-100 hp w/blade, incl set up 100 mi radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 7131 > | Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 150.00 |
| USR AA <01505 8921 > | Mob, Decontamination Trailer w/25,000 GVW Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 135.00 |
| USR AA <01505 1101 > | Mob - Field Office Trailer | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| | Ph I, Equip Mob, Detailed List | | | | 0 | 0 | 2,035 | 0 | 0 | 2,035 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 01 1 02-. Ph II, Equip Mob, Detailed List<br>This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed. | | | | | | | | | | | |
| USR AA <01505 3235 > Mob, FEnd Ldr, wheel 1-1/2-3 cy Atriculated Fr, 100-mi Radius | 1.00 | EA | | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 6115 > Mob, Dozer, Crawler, 50-100 hp w/blade, incl set up 100 mi radius | 1.00 | EA | | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 7131 > Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | | 0.00 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 150.00 |
| USR AA <01505 8921 > Mob, Decontamination Trailer w/25,000 GVW Trk, 100-mi Radius | 1.00 | EA | | 0.00 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 135.00 |
| USR AA <01505 1101 > Mob - Field Office Trailer | 1.00 | EA | | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| Ph II, Equip Mob, Detailed List | | | | | 0 | 0 | 2,035 | 0 | 0 | 2,035 | |
| TRANSPORTATION | | | | | 0 | 0 | 4,070 | 0 | 0 | 4,070 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 03. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01. TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01. Ph I, Office Trailers - setup<br>Allow 100mhrs for setup of contractor's trailer and equipment and site layout. An allowance for some equipment and material has been added.<br>Ph I, Office Trailers - setup | 100.00 HR | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| 06 01 03 01 02. Ph II, Office Trailers - setup<br>Allow 100mhrs for setup of contractor's trailer and equipment and site layout. An allowance for some equipment and material has been added.<br>Ph II, Office Trailers - setup | 100.00 HR | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| TRAILERS AND BUILDINGS | | | 0 | 5,000 | 500 | 200 | 0 | 5,700 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 03 02. DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 03 02 01. Personnel Decon Facilities | | | | | | | | | |
| Personnel Decon Facilities | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 01 03 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | |
| Equip/Vehicle Decon Facilities | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 01 03 02 03. Ph I, Trailers - assbly/setup | | | | | | | | | |
| Allow 100mhrs for setup of decontaminatio trailer and equipment and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Ph I, Trailers - assbly/setup | 120.00 HR | | 0 | 3,000 | 300 | 120 | 0 | 3,420 | 28.50 |
| 06 01 03 02 04. Ph II, Trailers - assbly/setup | | | | | | | | | |
| Allow 100mhrs for setup of decontaminatio trailer and equipment and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 HR | | 0 | 3,000 | 300 | 120 | 0 | 3,420 | 28.50 |
| DECONTAMINATION FACILITIES | | | 0 | 6,000 | 600 | 240 | 0 | 6,840 | |

06 02. MONITOR, SAMPLE, TEST, ANALYSIS

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 06. SAMPLING SOIL, SED & SOLID WASTE
06 02 06 01. SURFACE SOIL
06 02 06 01 01. PHASE I, Soil Sample
After the top 12" of soil is removed, soil samples will be taken.

06 02 06 01 01 01. Soil Sampling
Sample on 15'x15' grid (50 samples) with analysis at off site lab for BEHP only, with 14-day turnaround. Method 8270. Add 10 QA samples.

| | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 30,000 | 30,000 | 500.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE I, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 32,700 | 32,700 | 545.00 |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02 06 01 02. PHASE II, Soil Sample<br>Another set of soil samples will be taken after the next 6" soil layer is excavated. | | | | | | | | | |
| 06 02 06 01 02 01. Soil Sampling<br>Same as Phase I, except with 7-day turnaround, add 25%. | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 37,500 | 37,500 | 625.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE II, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 40,200 | 40,200 | 670.00 |
| SURFACE SOIL | | | 0 | 0 | 0 | 0 | 72,900 | 72,900 | |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03. SITE WORK | | | | | | | | | | | |
| 06 03 05. FENCING | | | | | | | | | | | |
| 06 03 05 03. FENCING | | | | | | | | | | | |
| 06 03 05 03 01. Temporary Fencing | | | | | | | | | | | |
| 06 03 05 03 01 01. Temporary Fencing - 6' Security<br>A 6' Security fence will be required during the duration of the cleanup activities around the work site. Cost taken from recent bid quotes. "Other" cost for removal. | | | | | | | | | | | |
| Temporary Fencing - 6' Security | 750.00 | LF | | | 0 | 3,750 | 1,875 | 9,375 | 3,750 | 18,750 | 25.00 |
| Temporary Fencing | 750.00 | LF | | | 0 | 3,750 | 1,875 | 9,375 | 3,750 | 18,750 | 25.00 |
| FENCING | | | | | 0 | 3,750 | 1,875 | 9,375 | 3,750 | 18,750 | |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08. SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | | | |
| 06 08 01. EXCAVATION | | | | | | | | | | | |
| 06 08 01 03. CONTAMINATED SOIL | | | | | | | | | | | |
| 06 08 01 03 01. PHASE I, Excavate/Load PCB Soils | | | | | | | | | | | |
| 06 08 01 03 01 01. Excavate/Load PCB Soils | | | | | | | | | | | |
| L USR AA <02220 0000 > Excavate top 12-inches of soil | | | | | 0.06 | 1.59 | 0.54 | 0.00 | 0.00 | 2.13 | |
| | 230.00 | CY | XXQNA | 28.75 | 14 | 365 | 125 | 0 | 0 | 490 | 2.13 |
| USR AA <02220 0000 > Load excavated/stockpiled soil load in 28-ton dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy | | | | | 0.03 | 0.94 | 0.95 | 0.00 | 0.00 | 1.90 | |
| | 230.00 | CY | XXQMG | 28.75 | 8 | 217 | 219 | 0 | 0 | 436 | 1.90 |
| USR AA <02220 0000 > Water tank/Soil wet down crew | | | | | 0.03 | 0.92 | 0.80 | 0.00 | 0.00 | 1.72 | |
| | 230.00 | CY | XTRHC | 28.75 | 8 | 211 | 185 | 0 | 0 | 396 | 1.72 |
| Excavate/Load PCB Soils | 230.00 | CY | | | 30 | 793 | 529 | 0 | 0 | 1,322 | 5.75 |
| 06 08 01 03 01 02. Transport PCB Soils - Arlington | | | | | | | | | | | |
| USR AA <02220 0000 > Transport soil to Arlington, OR 230 cy x 3,100lb/cy / 2000lb/ton = 356.5 tons @ 28 tons/truck = 12.73 trucks use 13 trucks | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 400.00 | 400.00 | |
| | 13.00 | TRK | | 0.00 | 0 | 0 | 0 | 0 | 5,200 | 5,200 | 400.00 |
| USR AA <02220 0000 > Disposal of soil in landfill | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 134.00 | 134.00 | |
| | 356.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 47,771 | 47,771 | 134.00 |
| USR AA <02220 0000 > Oregon state environmental tax | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 27.00 | 27.00 | |
| | 356.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 9,626 | 9,626 | 27.00 |
| USR AA <02220 0000 > Soil profile fee | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 300.00 | |
| | 1.00 | EA | | 0.00 | 0 | 0 | 0 | 0 | 300 | 300 | 300.00 |
| Transport PCB Soils - Arlington | 230.00 | CY | | | 0 | 0 | 0 | 0 | 62,897 | 62,897 | 273.46 |
| 06 08 01 03 01 03. PPEquip, Class D Assume workers in Class D PPE during excavation and hauling to site. Included also is a decon shower, and equipment decon equipment. This item covers 4 personnel. | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 12.00 | EA | N/A | 0.00 | 0 | 0 | 138 | 0 | 0 | 138 | 11.50 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 12.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 91 | 0 | 91 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 12.00 | PR | N/A | 0.00 | 0 | 0 | 28 | 0 | 0 | 28 | 2.30 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| | 3.00 | DAY | ULABA | 0.13 | 30 | 703 | 4 | 104 | 0 | 812 | 270.58 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | 3.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 81 | 0 | 81 | 26.95 |
| PPEquip, Class D | 3.00 | DAY | | | 30 | 703 | 170 | 276 | 0 | 1,149 | 382.91 |
| PHASE I, Excavate/Load PCB Soils | 230.00 | CY | | | 60 | 1,496 | 699 | 276 | 62,897 | 65,367 | 284.20 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 02. PHASE II,Excavate/Load PCB Soils | | | | | | | | | | | |
| 06 08 01 03 02 01. Excavate/Load PCB Soils | | | | | | | | | | | |
| L USR AA <02220 0000 > Excavate next 6-inches of soil | | | | | 0.06 | 1.59 | 0.54 | 0.00 | 0.00 | 2.13 | |
| | 110.00 | CY | XXQNA | 28.75 | 7 | 175 | 60 | 0 | 0 | 234 | 2.13 |
| USR AA <02220 0000 > Load excavated/stockpiled soil load in 28-ton dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy | | | | | 0.03 | 0.94 | 0.95 | 0.00 | 0.00 | 1.90 | |
| | 110.00 | CY | XXQMG | 28.75 | 4 | 104 | 105 | 0 | 0 | 209 | 1.90 |
| USR AA <02220 0000 > Water tank/Soil wet down crew | | | | | 0.03 | 0.92 | 0.80 | 0.00 | 0.00 | 1.72 | |
| | 110.00 | CY | XTRHC | 28.75 | 4 | 101 | 88 | 0 | 0 | 189 | 1.72 |
| Excavate/Load PCB Soils | 110.00 | CY | | | 14 | 379 | 253 | 0 | 0 | 632 | 5.75 |
| 06 08 01 03 02 02. Transport PCB Soils - Arlington | | | | | | | | | | | |
| USR AA <02220 0000 > Transport soil to Arlington, OR 110 cy x 3,100lb/cy / 2000lb/ton = 170.5 tons @ 28 tons/truck = 6.1 trucks use 7 trucks | 7.00 | TRK | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 400.00 | 400.00 | |
| | | | | | 0 | 0 | 0 | 0 | 2,800 | 2,800 | 400.00 |
| USR AA <02220 0000 > Disposal of soil in landfill | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 134.00 | 134.00 | |
| | 170.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 22,847 | 22,847 | 134.00 |
| USR AA <02220 0000 > Oregon state environmental tax | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 27.00 | 27.00 | |
| | 170.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 4,604 | 4,604 | 27.00 |
| Transport PCB Soils - Arlington | 110.00 | CY | | | 0 | 0 | 0 | 0 | 30,251 | 30,251 | 275.00 |
| 06 08 01 03 02 03. PPEquip, Class D<br>Assume workers in Class D PPE during excavation and hauling to site. Included also is a decon shower, and equipment decon equipment. This item covers 4 personnel. | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 92 | 0 | 0 | 92 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 60 | 0 | 60 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 8.00 | PR | N/A | 0.00 | 0 | 0 | 18 | 0 | 0 | 18 | 2.30 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| 4.2 gpm, 11 HP (Daily cost) | 2.00 DAY ULABA | 0.13 | 20 | 469 | 3 | 70 | 0 | 541 | 270.58 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| Fans (Monthly Rental) | 2.00 DAY N/A | 0.00 | 0 | 0 | 0 | 54 | 0 | 54 | 26.95 |
| PPEquip, Class D | 2.00 DAY | | 20 | 469 | 113 | 184 | 0 | 766 | 382.91 |
| PHASE II,Excavate/Load PCB Soils | 110.00 CY | | 34 | 848 | 366 | 184 | 30,251 | 31,649 | 287.71 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 03. Post Removal | | | | | | | | | |
| 06 08 01 03 03 01. Excavate/Load Crew | | | | | | | | | |
| L USR AA <02220 0000 > Excavation crew | | | 14.00 | 365.22 | 124.54 | 0.00 | 0.00 | 489.76 | |
| | 1.00 DAY XXQNA | 0.13 | 14 | 365 | 125 | 0 | 0 | 490 | 489.76 |
| USR AA <02220 0000 > Load crew load in 28-ton dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy | | | 8.00 | 216.72 | 219.31 | 0.00 | 0.00 | 436.03 | |
| | 1.00 DAY XXQMG | 0.13 | 8 | 217 | 219 | 0 | 0 | 436 | 436.03 |
| Excavate/Load Crew | 1.00 DAY | | 22 | 582 | 344 | 0 | 0 | 926 | 925.80 |
| 06 08 01 03 03 02. PPEquip, Class D Assume workers in Class D PPE during excavation and hauling to site. Included also is a decon shower, and equipment decon equipment. This item covers 4 personnel. | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 4.00 EA N/A | 0.00 | 0 | 0 | 46 | 0 | 0 | 46 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 4.00 EA N/A | 0.00 | 0 | 0 | 0 | 30 | 0 | 30 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 4.00 PR N/A | 0.00 | 0 | 0 | 9 | 0 | 0 | 9 | 2.30 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| | 1.00 DAY ULABA | 0.13 | 10 | 234 | 1 | 35 | 0 | 271 | 270.58 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | 1.00 DAY N/A | 0.00 | 0 | 0 | 0 | 27 | 0 | 27 | 26.95 |
| PPEquip, Class D | 1.00 DAY | | 10 | 234 | 57 | 92 | 0 | 383 | 382.91 |
| Post Removal | | | 32 | 816 | 401 | 92 | 0 | 1,309 | |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 91. Safety and Quality Assurance | | | | | | | | | |
| Safety/QA crew: | | | | | | | | | |
| WHC HPT: $50/hr x 40hrs = $2,000 | | | | | | | | | |
| Safety: $70/hr x 40hrs = $2,800 | | | | | | | | | |
| Special Assistance to QA: $50/hr x 8 hrs = $ 400 | | | | | | | | | |
| Total cost/week $5,200 | | | | | | | | | |
| Safety and Quality Assurance | 3.00 WK | | 0 | 15,600 | 0 | 0 | 0 | 15,600 | 5200.00 |
| CONTAMINATED SOIL | | | 126 | 18,760 | 1,465 | 552 | 93,147 | 113,924 | |

| 06 21. DEMOBILIZATION | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 21. DEMOBILIZATION | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01. PH I, Demob and take down | | | | | | | | | |
| Allow 75% of mobilization and setup costs. | | | | | | | | | |
| PH I, Demob and take down | | | 0 | 4,125 | 1,940 | 0 | 0 | 6,065 | |
| 06 21 04 01 02. PH II, Demob and Take down | | | | | | | | | |
| Allow 75% of mobilization and setup costs. | | | | | | | | | |
| PH II, Demob and Take down | | | 0 | 4,125 | 1,940 | 0 | 0 | 6,065 | |
| TRANSPORTATION | | | 0 | 8,250 | 3,880 | 0 | 0 | 12,130 | |
| HANFORD: REMEDIATION | | | 126 | 41,760 | 12,390 | 10,367 | 169,797 | 234,314 | |

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT EPHOFF: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, EPHEMERAL POOL OFF-SITE DISPOSAL
** CREW BACKUP **

TIME 09:21:02

BACKUP PAGE 1

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | ULABA | 1 B-laborer + Small Tools | | | PROD = | 100% | | | CREW HOURS = | 96 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.83 | 0.25 | 5.96 | | | 5.96 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.33 | 1.00 | 23.33 | | | 23.33 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 1.25 | 29.29 | 0.13 | 0.18 | 29.47 |
| | XTRHC | 1 X-trkdvrhv + 1 Truck 3ax, W/3000 Gal Water Tnk | | | PROD = | 100% | | | CREW HOURS = | 24 |
| MIL | T40XX033 E | WATER TANK, 3000 GAL (ADD TRUCK | 1.00 | HR | 3.15 | | | 1.00 | 3.15 | 3.15 |
| MIL | T50GM016 E | TRK, HWY, 3 AXLE, 41000 GVW, 6X | 1.00 | HR | 19.97 | | | 1.00 | 19.97 | 19.97 |
| MIL | X-TRKDVRHVL | Outside Truck Dr. Heavy | 1.00 | HR | 26.39 | 1.00 | 26.39 | | | 26.39 |
| | TOTAL | | | | | 1.00 | 26.39 | 2.00 | 23.12 | 49.51 |
| | XXQMG | 1 X-eqoprmed + 1 Front End Ldr, 2-1/2 Cy, Wheel | | | PROD = | 100% | | | CREW HOURS = | 40 |
| MIL | L40CA004 E | LDR,FE,WH, 2-1/2CY, ARTIC, 936E | 1.00 | HR | 27.41 | | | 1.00 | 27.41 | 27.41 |
| MIL | X-EQOPRMEDL | Outside Equip. Op. Medium | 1.00 | HR | 27.09 | 1.00 | 27.09 | | | 27.09 |
| | TOTAL | | | | | 1.00 | 27.09 | 1.00 | 27.41 | 54.50 |
| | XXQNA | 1 X-eqoprmed + 1 Dozer, Cat D-38, 65 Hp | | | PROD = | 100% | | | CREW HOURS = | 40 |
| MIL | T10CA001 E | BLADE,POWER ANGLE TILT,FOR D3 | 1.00 | HR | 1.87 | | | 1.00 | 1.87 | 1.87 |
| MIL | T15CA003 E | DOZER,CWLR,D-3C,PS,(ADD BLADE) | 1.00 | HR | 13.70 | | | 1.00 | 13.70 | 13.70 |
| MIL | X-LABORER L | Outside Laborer | 0.50 | HR | 23.33 | 0.50 | 11.67 | | | 11.67 |
| MIL | X-EQOPRMEDL | Outside Equip. Op. Medium | 1.00 | HR | 27.09 | 1.00 | 27.09 | | | 27.09 |
| MIL | X-EQOPRMEDF | Outside Equip. Op. Medium | 0.25 | HR | 27.59 | 0.25 | 6.90 | | | 6.90 |
| | TOTAL | | | | | 1.75 | 45.65 | 2.00 | 15.57 | 61.22 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-LABORER | Laborer/Helper | 23.33 | 0.0% | 0.0% | 0.00 | 0.00 | 23.33 | HR | 10/15/92 | 22.36 | 120 |
| MIL | X-EQOPRMED | Outside Equipment Oper. Medium | 27.09 | 0.0% | 0.0% | 0.00 | 0.00 | 27.09 | HR | 10/15/92 | 25.84 | 89 |
| MIL | X-LABORER | Outside Laborer | 23.33 | 0.0% | 0.0% | 0.00 | 0.00 | 23.33 | HR | 10/15/92 | 22.36 | 20 |
| MIL | X-TRKDVRHV | Outside Truck Driver, Heavy | 26.39 | 0.0% | 0.0% | 0.00 | 0.00 | 26.39 | HR | 10/15/92 | 25.61 | 24 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | L40CA004 | LDR,FE,WH, 2-1/2CY, ARTIC, 936E | 8.03 | 2.79 | 3.99 | 1.6 | 8.34 | 2.26 | 0.34 | 27.41 | HR | 40 |
| MIL | T10CA001 | BLADE,POWER ANGLE TILT,FOR D3 | 0.75 | 0.22 | | 0.0 | 0.82 | | | 1.87 | HR | 40 |
| MIL | T15CA003 | DOZER,CWLR,D-3C,PS,(ADD BLADE) | 3.51 | 1.14 | 2.14 | 0.7 | 6.14 | | | 13.70 | HR | 40 |
| MIL | T40XX033 | WATER TANK, 3000 GAL (ADD TRUCK) | 1.52 | 0.37 | | | 1.26 | | | 3.15 | HR | 24 |
| MIL | T50GM016 | TRK, HWY, 3 AXLE, 41000 GVW, 6X4 | 4.17 | 1.08 | 7.46 | 2.0 | 3.69 | 1.29 | 0.19 | 19.97 | HR | 24 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 12 |

THIS PAGE INTENTIONALLY
LEFT BLANK

Fri 23 Oct 1992

ERROR REPORT

U.S. Army Corps of Engineers
PROJECT EPHOFF: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, EPHEMERAL POOL OFF-SITE DISPOSAL

TIME 09:21:02

ERROR PAGE 1

---

No errors detected...

* * * END OF ERROR REPORT * * *

THIS PAGE INTENTIONALLY
LEFT BLANK

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 5
Table of Contents Levels : 6

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | | | | | | | | |
| Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |
| Print Unit Cost Row : | Y | | | | | | | |
| Print Page Footer : | Y | | | | | | | |
| Show Cost Codes : | Y | | | | | | | |
| COLUMNS OPTIONS | | | | | | | | |
| Print Crew Id : | Y | | | | | | | |
| Crew Output : | Y | | | | | | | |
| Unit Cost : | Y | | | | | | | |
| UPB TITLES | | | | | | | | |
| No. of Levels to Print : | 0 | | | | | | | |
| Bracket Titles With : | - : | | | | | | | |
| Include titles Notes : | Y | | | | | | | |

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y Measurement Units : Original
Link Listing : N

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Detail : | Y | | | | | | | | | |
| Project : | N | Y | Y | | N | N | N | N | Y | Y |
| Contractor : | N | N | | N | N | N | N | N | N | N |
| Division : | N | N | N | Y | N | N | N | N | N | N |
| System : | N | N | N | Y | N | N | N | N | N | N |
| 2nd View : | N | | | | | | | | | |
| Crew : | Y | | | Y | N | N | N | N | N | N |
| Labor : | Y | | | | | | | | | |
| Equipment : | Y | | | | | | | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTION | | | | | | |
| S & A | P | 15.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 02 06 01 01 02 QA Report | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 02 02 QA Report | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |
| 06 03 05 03 FENCING | | | | | | | |
| 06 03 05 03 01 Temporary Fencing | | | | | | | |
| 06 03 05 03 01 01 Temporary Fencing - 6' Security | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | |
| 06 08 01 03 01 01 Excavate/Load PCB Soils | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 40.00 | | | | |
| 06 08 01 03 01 02 Transport PCB Soils - Arlington | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 08 01 03 01 03 PPEquip, Class D | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | |
| 06 08 01 03 02 01 Excavate/Load PCB Soils | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 40.00 | | | | |
| 06 08 01 03 02 02 Transport PCB Soils - Arlington | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 08 01 03 02 03 PPEquip, Class D | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 08 01 03 | 03 Post Removal | | | | | | |
| 06 08 01 03 | 03 01 Excavate/Load Crew | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 | 03 02 PPEquip, Class D | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 | 91 Safety and Quality Assurance | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 | 01 PH I, Demob and take down | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 21 04 01 | 02 PH II, Demob and Take down | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

DOE/RL-92-67

# HORN RAPIDS LANDFILL
# OFFSITE DISPOSAL

9 3 1 2 9 2 1 3 7 5

INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
HORN RAPIDS LANDFILL (PCBs)
OFF-SITE DISPOSAL

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/12/92

M C A C E S  G O L D  E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. See Contingency Notes for explanation of Contingency percentages. S & A is estimated at 15%. See Detail notes (pg. 1) for explanation of overhead percentages used.

This project estimate covers the Off-site Incineration of PCB "Hot Spot" in the Horn Rapids Landfill (HRL). PCB contaminated soils will be loaded into 20-Ton roll-off units, for transportation to Texas.

1. Contingency is based on uncertainty of the amount of time required to do the work represented in the estimate, etc.

2. Contingency is based on the uncertainty of the quantities presented.

3. Contingency based on the unit costs obtained by Vendor and therefore may be different by the time work will actually be accomplished.

THIS PAGE INTENTIONALLY
LEFT BLANK

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | 2,710 | 410 | 620 | 3,730 | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | 2,710 | 410 | 620 | 3,730 | | |
| TRANSPORTATION | | 5,410 | 810 | 1,240 | 7,470 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 5,410 | 810 | 1,240 | 7,470 | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | 100.00 HR | 3,790 | 570 | 870 | 5,230 | 52.28 | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | 100.00 HR | 3,790 | 570 | 870 | 5,230 | 52.28 | |
| TRAILERS AND BUILDINGS | | 7,580 | 1,140 | 1,740 | 10,460 | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | 120.00 HR | 4,550 | 680 | 1,050 | 6,270 | 52.28 | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | 120.00 HR | 4,550 | 680 | 1,050 | 6,270 | 52.28 | |
| DECONTAMINATION FACILITIES | | 9,090 | 1,360 | 2,090 | 12,550 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 16,670 | 2,500 | 3,830 | 23,000 | | |
| MOBILIZATION AND PREPATORY WORK | | 22,080 | 3,310 | 5,080 | 30,470 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | 60.00 EA | 43,470 | 6,520 | 10,000 | 59,980 | 999.74 | |
| 06 02 06 01 02 PHASE II, Soil Sample | 60.00 EA | 53,440 | 8,020 | 12,290 | 73,740 | 1229.03 | |
| SURFACE SOIL | | 96,900 | 14,540 | 22,290 | 133,730 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 96,900 | 14,540 | 22,290 | 133,730 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| MONITOR, SAMPLE, TEST, ANALYSIS | | 96,900 | 14,540 | 22,290 | 133,730 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | 400.00 LF | 13,290 | 1,990 | 3,060 | 18,340 | 45.86 | |
| FENCING | | 13,290 | 1,990 | 3,060 | 18,340 | | |
| FENCING | | 13,290 | 1,990 | 3,060 | 18,340 | | |
| SITE WORK | | 13,290 | 1,990 | 3,060 | 18,340 | | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | 230.00 CY | 131,680 | 19,750 | 38,180 | 189,610 | 824.39 | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | 110.00 CY | 93,490 | 14,020 | 27,110 | 134,620 | 1223.86 | |
| 06 08 01 03 03 Post Removal | | 2,120 | 320 | 610 | 3,050 | | |
| 06 08 01 03 91 Safety and Quality Assurance | 3.00 WK | 20,740 | 3,110 | 4,770 | 28,620 | 9538.78 | |
| CONTAMINATED SOIL | | 248,030 | 37,200 | 70,670 | 355,900 | | |
| EXCAVATION | | 248,030 | 37,200 | 70,670 | 355,900 | | |
| SOLID WASTE COLLECT/CONTAINMENT | | 248,030 | 37,200 | 70,670 | 355,900 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | 8,060 | 1,210 | 1,850 | 11,130 | | |
| 06 21 04 01 02 PH II, Demob and Take down | | 8,060 | 1,210 | 1,850 | 11,130 | | |
| TRANSPORTATION | | 16,120 | 2,420 | 3,710 | 22,250 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 16,120 | 2,420 | 3,710 | 22,250 | | |
| DEMOBILIZATION | | 16,120 | 2,420 | 3,710 | 22,250 | | |

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT PCBOFF: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, HORN RAPIDS LANDFILL, OFF-SITE DISPSL
** PROJECT OWNER SUMMARY - LEVEL 5 (Rounded to 10's) **

TIME 09:10:38



| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| REMEDIAL ACTION | | 396,420 | 59,460 | 104,800 | 560,690 | | |
| HANFORD: REMEDIATION | | 396,420 | 59,460 | 104,800 | 560,690 | | |

| | QUANTITY | UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | | | |
| Ph I, Equip Mob, Detailed List | | | 2,710 | 410 | 620 | 3,730 | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | | | |
| Ph II, Equip Mob, Detailed List | | | 2,710 | 410 | 620 | 3,730 | | |
| TRANSPORTATION | | | 5,410 | 810 | 1,240 | 7,470 | | |
| MOB OF EQUIPMENT & PERSONNEL | | | 5,410 | 810 | 1,240 | 7,470 | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | | | |
| Ph I, Office Trailers - setup | 100.00 | HR | 3,790 | 570 | 870 | 5,230 | 52.28 | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | | | |
| Ph II, Office Trailers - setup | 100.00 | HR | 3,790 | 570 | 870 | 5,230 | 52.28 | |
| TRAILERS AND BUILDINGS | | | 7,580 | 1,140 | 1,740 | 10,460 | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Ph I, Trailers - assbly/setup | 120.00 HR | 4,550 | 680 | 1,050 | 6,270 | 52.28 | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 HR | 4,550 | 680 | 1,050 | 6,270 | 52.28 | |
| DECONTAMINATION FACILITIES | | 9,090 | 1,360 | 2,090 | 12,550 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 16,670 | 2,500 | 3,830 | 23,000 | | |
| MOBILIZATION AND PREPATORY WORK | | 22,080 | 3,310 | 5,080 | 30,470 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 39,880 | 5,980 | 9,170 | 55,030 | 917.19 | 1 |
| 06 02 06 01 01 02 QA Report | | 3,590 | 540 | 830 | 4,950 | | 1 |
| PHASE I, Soil Sample | 60.00 EA | 43,470 | 6,520 | 10,000 | 59,980 | 999.74 | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 49,850 | 7,480 | 11,460 | 68,790 | 1146.49 | 1 |
| 06 02 06 01 02 02 QA Report | | 3,590 | 540 | 830 | 4,950 | | 1 |
| PHASE II, Soil Sample | 60.00 EA | 53,440 | 8,020 | 12,290 | 73,740 | 1229.03 | |
| SURFACE SOIL | | 96,900 | 14,540 | 22,290 | 133,730 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 96,900 | 14,540 | 22,290 | 133,730 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 96,900 | 14,540 | 22,290 | 133,730 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | | |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| 06 03 05 01 01 01 | Temporary Fencing - 6' Security | 400.00 LF | 13,290 | 1,990 | 3,060 | 18,340 | 45.86 | |
| | Temporary Fencing | 400.00 LF | 13,290 | 1,990 | 3,060 | 18,340 | 45.86 | |
| | FENCING | | 13,290 | 1,990 | 3,060 | 18,340 | | |
| | FENCING | | 13,290 | 1,990 | 3,060 | 18,340 | | |
| | SITE WORK | | 13,290 | 1,990 | 3,060 | 18,340 | | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | | |
| 06 08 01 03 01 01 | Excavate/Load PCB Soils | 350.00 CY | 1,870 | 280 | 860 | 3,020 | 8.61 | 2 |
| 06 08 01 03 01 02 | Transport PCB Soils - Arlington | 350.00 CY | 127,130 | 19,070 | 36,550 | 182,750 | 522.16 | 2,3 |
| 06 08 01 03 01 03 | PPEquip, Modified Class D | 3.00 DAY | 2,670 | 400 | 770 | 3,840 | 1279.59 | 1 |
| | PHASE I, Excavate/Load PCB Soils | 230.00 CY | 131,680 | 19,750 | 38,180 | 189,610 | 824.39 | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | | |
| 06 08 01 03 02 01 | Excavate/Load PCB Soils | 250.00 CY | 1,340 | 200 | 620 | 2,150 | 8.61 | 1,2 |
| 06 08 01 03 02 02 | Transport PCB Soils - Arlington | 250.00 CY | 90,370 | 13,560 | 25,980 | 129,910 | 519.65 | 2,3 |
| 06 08 01 03 02 03 | PPEquip, Modified Class D | 2.00 DAY | 1,780 | 270 | 510 | 2,560 | 1279.59 | 1 |
| | PHASE II,Excavate/Load PCB Soils | 110.00 CY | 93,490 | 14,020 | 27,110 | 134,620 | 1223.86 | |
| 06 08 01 03 03 Post Removal | | | | | | | | |
| 06 08 01 03 03 01 | Excavate/Load Crew | 1.00 DAY | 1,230 | 180 | 350 | 1,770 | 1769.02 | 1 |
| 06 08 01 03 03 02 | PPEquip, Modified Class D | 1.00 DAY | 890 | 130 | 260 | 1,280 | 1279.59 | 1 |
| | Post Removal | | 2,120 | 320 | 610 | 3,050 | | |
| 06 08 01 03 91 Safety and Quality Assurance | | | | | | | | |
| | Safety and Quality Assurance | 3.00 WK | 20,740 | 3,110 | 4,770 | 28,620 | 9538.78 | |
| | CONTAMINATED SOIL | | 248,030 | 37,200 | 70,670 | 355,900 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| EXCAVATION | | 248,030 | 37,200 | 70,670 | 355,900 | | |
| SOLID WASTE COLLECT/CONTAINMENT | | 248,030 | 37,200 | 70,670 | 355,900 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | | | | | | |
| PH I, Demob and take down | | 8,060 | 1,210 | 1,850 | 11,130 | | |
| 06 21 04 01 02 PH II, Demob and Take down | | | | | | | |
| PH II, Demob and Take down | | 8,060 | 1,210 | 1,850 | 11,130 | | |
| TRANSPORTATION | | 16,120 | 2,420 | 3,710 | 22,250 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 16,120 | 2,420 | 3,710 | 22,250 | | |
| DEMOBILIZATION | | 16,120 | 2,420 | 3,710 | 22,250 | | |
| REMEDIAL ACTION | | 396,420 | 59,460 | 104,800 | 560,690 | | |
| HANFORD: REMEDIATION | | 396,420 | 59,460 | 104,800 | 560,690 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,710 | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,710 | |
| TRANSPORTATION | | 4,070 | 610 | 230 | 390 | 50 | 50 | 5,410 | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,070 | 610 | 230 | 390 | 50 | 50 | 5,410 | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | 37.88 |
| 06 01 03 01 02 Ph II, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | 37.88 |
| TRAILERS AND BUILDINGS | | 5,700 | 860 | 330 | 550 | 70 | 80 | 7,580 | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 40 | 50 | 4,550 | 37.88 |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 40 | 50 | 4,550 | 37.88 |
| DECONTAMINATION FACILITIES | | 6,840 | 1,030 | 390 | 660 | 80 | 90 | 9,090 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 12,540 | 1,880 | 720 | 1,210 | 150 | 170 | 16,670 | |
| MOBILIZATION AND PREPATORY WORK | | 16,610 | 2,490 | 960 | 1,600 | 200 | 220 | 22,080 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | 60.00 EA | 32,700 | 4,910 | 1,880 | 3,160 | 390 | 430 | 43,470 | 724.45 |
| 06 02 06 01 02 PHASE II, Soil Sample | 60.00 EA | 40,200 | 6,030 | 2,310 | 3,880 | 480 | 530 | 53,440 | 890.60 |
| SURFACE SOIL | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | 400.00 LF | 10,000 | 1,500 | 580 | 970 | 120 | 130 | 13,290 | 33.23 |
| FENCING | | 10,000 | 1,500 | 580 | 970 | 120 | 130 | 13,290 | |
| FENCING | | 10,000 | 1,500 | 580 | 970 | 120 | 130 | 13,290 | |
| SITE WORK | | 10,000 | 1,500 | 580 | 970 | 120 | 130 | 13,290 | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | 230.00 CY | 99,060 | 14,860 | 5,700 | 9,570 | 1,190 | 1,300 | 131,680 | 572.51 |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | 110.00 CY | 70,330 | 10,550 | 4,040 | 6,790 | 840 | 930 | 93,490 | 849.92 |
| 06 08 01 03 03 Post Removal | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,120 | |
| 06 08 01 03 91 Safety and Quality Assurance | 3.00 WK | 15,600 | 2,340 | 900 | 1,510 | 190 | 210 | 20,740 | 6912.16 |
| CONTAMINATED SOIL | | 186,590 | 27,990 | 10,730 | 18,020 | 2,240 | 2,460 | 248,030 | |
| EXCAVATION | | 186,590 | 27,990 | 10,730 | 18,020 | 2,240 | 2,460 | 248,030 | |
| SOLID WASTE COLLECT/CONTAINMENT | | 186,590 | 27,990 | 10,730 | 18,020 | 2,240 | 2,460 | 248,030 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | 6,070 | 910 | 350 | 590 | 70 | 80 | 8,060 | |
| 06 21 04 01 02 PH II, Demob and Take down | | 6,070 | 910 | 350 | 590 | 70 | 80 | 8,060 | |
| TRANSPORTATION | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |
| DEMOBILIZATION | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| REMEDIAL ACTION | | 298,230 | 44,730 | 17,150 | 28,810 | 3,580 | 3,920 | 396,420 | |
| HANFORD: REMEDIATION | | 298,230 | 44,730 | 17,150 | 28,810 | 3,580 | 3,920 | 396,420 | |
| S & A | | | | | | | | 59,460 | |
| SUBTOTAL | | | | | | | | 455,890 | |
| CONTINGENCY | | | | | | | | 104,800 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 560,690 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | | | | |
| Ph I, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,710 | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | | | | |
| Ph II, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,710 | |
| TRANSPORTATION | | 4,070 | 610 | 230 | 390 | 50 | 50 | 5,410 | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,070 | 610 | 230 | 390 | 50 | 50 | 5,410 | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | | | | |
| Ph I, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | 37.88 |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | | | | |
| Ph II, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | 37.88 |
| TRAILERS AND BUILDINGS | | 5,700 | 860 | 330 | 550 | 70 | 80 | 7,580 | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Ph I, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 40 | 50 | 4,550 | 37.88 |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 40 | 50 | 4,550 | 37.88 |
| DECONTAMINATION FACILITIES | | 6,840 | 1,030 | 390 | 660 | 80 | 90 | 9,090 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 12,540 | 1,880 | 720 | 1,210 | 150 | 170 | 16,670 | |
| MOBILIZATION AND PREPATORY WORK | | 16,610 | 2,490 | 960 | 1,600 | 200 | 220 | 22,080 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 30,000 | 4,500 | 1,720 | 2,900 | 360 | 390 | 39,880 | 664.63 |
| 06 02 06 01 01 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,590 | |
| PHASE I, Soil Sample | 60.00 EA | 32,700 | 4,910 | 1,880 | 3,160 | 390 | 430 | 43,470 | 724.45 |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 37,500 | 5,630 | 2,160 | 3,620 | 450 | 490 | 49,850 | 830.79 |
| 06 02 06 01 02 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,590 | |
| PHASE II, Soil Sample | 60.00 EA | 40,200 | 6,030 | 2,310 | 3,880 | 480 | 530 | 53,440 | 890.60 |
| SURFACE SOIL | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 10,940 | 4,190 | 7,040 | 870 | 960 | 96,900 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 03 05 01 01 01 Temporary Fencing - 6' Security | 400.00 LF | 10,000 | 1,500 | 580 | 970 | 120 | 130 | 13,290 | 33.23 |
| Temporary Fencing | 400.00 LF | 10,000 | 1,500 | 580 | 970 | 120 | 130 | 13,290 | 33.23 |
| FENCING | | 10,000 | 1,500 | 580 | 970 | 120 | 130 | 13,290 | |
| FENCING | | 10,000 | 1,500 | 580 | 970 | 120 | 130 | 13,290 | |
| SITE WORK | | 10,000 | 1,500 | 580 | 970 | 120 | 130 | 13,290 | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | | | |
| 06 08 01 03 01 01 Excavate/Load PCB Soils | 350.00 CY | 1,410 | 210 | 80 | 140 | 20 | 20 | 1,870 | 5.35 |
| 06 08 01 03 01 02 Transport PCB Soils - Arlington | 350.00 CY | 95,640 | 14,350 | 5,500 | 9,240 | 1,150 | 1,260 | 127,130 | 363.24 |
| 06 08 01 03 01 03 PPEquip, Modified Class D | 3.00 DAY | 2,010 | 300 | 120 | 190 | 20 | 30 | 2,670 | 890.15 |
| PHASE I, Excavate/Load PCB Soils | 230.00 CY | 99,060 | 14,860 | 5,700 | 9,570 | 1,190 | 1,300 | 131,680 | 572.51 |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | | | |
| 06 08 01 03 02 01 Excavate/Load PCB Soils | 250.00 CY | 1,010 | 150 | 60 | 100 | 10 | 10 | 1,340 | 5.35 |
| 06 08 01 03 02 02 Transport PCB Soils - Arlington | 250.00 CY | 67,990 | 10,200 | 3,910 | 6,570 | 820 | 890 | 90,370 | 361.49 |
| 06 08 01 03 02 03 PPEquip, Modified Class D | 2.00 DAY | 1,340 | 200 | 80 | 130 | 20 | 20 | 1,780 | 890.15 |
| PHASE II,Excavate/Load PCB Soils | 110.00 CY | 70,330 | 10,550 | 4,040 | 6,790 | 840 | 930 | 93,490 | 849.92 |
| 06 08 01 03 03 Post Removal | | | | | | | | | |
| 06 08 01 03 03 01 Excavate/Load Crew | 1.00 DAY | 930 | 140 | 50 | 90 | 10 | 10 | 1,230 | 1230.62 |
| 06 08 01 03 03 02 PPEquip, Modified Class D | 1.00 DAY | 670 | 100 | 40 | 60 | 10 | 10 | 890 | 890.15 |
| Post Removal | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,120 | |
| 06 08 01 03 91 Safety and Quality Assurance | | | | | | | | | |
| Safety and Quality Assurance | 3.00 WK | 15,600 | 2,340 | 900 | 1,510 | 190 | 210 | 20,740 | 6912.16 |
| CONTAMINATED SOIL | | 186,590 | 27,990 | 10,730 | 18,020 | 2,240 | 2,460 | 248,030 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| EXCAVATION | | 186,590 | 27,990 | 10,730 | 18,020 | 2,240 | 2,460 | 248,030 | |
| SOLID WASTE COLLECT/CONTAINMENT | | 186,590 | 27,990 | 10,730 | 18,020 | 2,240 | 2,460 | 248,030 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | | | | | | | | |
| PH I, Demob and take down | | 6,070 | 910 | 350 | 590 | 70 | 80 | 8,060 | |
| 06 21 04 01 02 PH II, Demob and Take down | | | | | | | | | |
| PH II, Demob and Take down | | 6,070 | 910 | 350 | 590 | 70 | 80 | 8,060 | |
| TRANSPORTATION | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |
| DEMOBILIZATION | | 12,130 | 1,820 | 700 | 1,170 | 150 | 160 | 16,120 | |
| REMEDIAL ACTION | | 298,230 | 44,730 | 17,150 | 28,810 | 3,580 | 3,920 | 396,420 | |
| HANFORD: REMEDIATION | | 298,230 | 44,730 | 17,150 | 28,810 | 3,580 | 3,920 | 396,420 | |
| S & A | | | | | | | | 59,460 | |
| SUBTOTAL | | | | | | | | 455,890 | |
| CONTINGENCY | | | | | | | | 104,800 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 560,690 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION AND PREPATORY WORK
06 01 01. MOB OF EQUIPMENT & PERSONNEL
06 01 01 1. TRANSPORTATION
06 01 01 1 01-. Ph I, Equip Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 3235 > | Mob, FEnd Ldr, wheel 1-1/2-3 cy | | 0.00 | 0.00 | 750.00 | 0.00 | 0.00 | 750.00 | |
| | Atriculated Fr, 100-mi Radius | 1.00 EA 0.00 | 0 | 0 | 750 | 0 | 0 | 750 | 750.00 |
| USR AA <01505 6115 > | Mob, Dozer, Crawler, 50-100 hp | | 0.00 | 0.00 | 750.00 | 0.00 | 0.00 | 750.00 | |
| | w/blade, incl set up 100 mi radius | 1.00 EA 0.00 | 0 | 0 | 750 | 0 | 0 | 750 | 750.00 |
| USR AA <01505 7131 > | Mob, Water Tank, 3,000 Gal, | | 0.00 | 0.00 | 150.00 | 0.00 | 0.00 | 150.00 | |
| | Mtd/FT800 Trk, 100-mi Radius | 1.00 EA 0.00 | 0 | 0 | 150 | 0 | 0 | 150 | 150.00 |
| USR AA <01505 8921 > | Mob, Decontamination Trailer | | 0.00 | 0.00 | 135.00 | 0.00 | 0.00 | 135.00 | |
| | w/25,000 GVW Trk, 100-mi Radius | 1.00 EA 0.00 | 0 | 0 | 135 | 0 | 0 | 135 | 135.00 |
| USR AA <01505 1101 > | Mob - Field Office Trailer | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | | 1.00 EA 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| | Ph I, Equip Mob, Detailed List | | 0 | 0 | 2,035 | 0 | 0 | 2,035 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 01 1 02-. Ph II, Equip Mob, Detailed List<br>This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed. | | | | | | | | | |
| USR AA <01505 3235 > Mob, FEnd Ldr, wheel 1-1/2-3 cy Atriculated Fr, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 6115 > Mob, Dozer, Crawler, 50-100 hp w/blade, incl set up 100 mi radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 7131 > Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 150.00 |
| USR AA <01505 8921 > Mob, Decontamination Trailer w/25,000 GVW Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 135.00 |
| USR AA <01505 1101 > Mob - Field Office Trailer | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| Ph II, Equip Mob, Detailed List | | | 0 | 0 | 2,035 | 0 | 0 | 2,035 | |
| TRANSPORTATION | | | 0 | 0 | 4,070 | 0 | 0 | 4,070 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 03. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | | |
| 06 01 03 01. TRAILERS AND BUILDINGS | | | | | | | | | | | |
| 06 01 03 01 01. Ph I, Office Trailers - setup<br>Allow 100mhrs for setup of contractor's trailer and equipment and site layout. An allowance for some equipment and material has been added.<br>Ph I, Office Trailers - setup | 100.00 | HR | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| 06 01 03 01 02. Ph II, Office Trailers - setup<br>Allow 100mhrs for setup of contractor's trailer and equipment and site layout. An allowance for some equipment and material has been added.<br>Ph II, Office Trailers - setup | 100.00 | HR | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| TRAILERS AND BUILDINGS | | | | | 0 | 5,000 | 500 | 200 | 0 | 5,700 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 03 02. DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 03 02 01. Personnel Decon Facilities | | | | | | | | | |
| Personnel Decon Facilities | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 01 03 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | |
| Equip/Vehicle Decon Facilities | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 01 03 02 03. Ph I, Trailers - assbly/setup | | | | | | | | | |
| Allow 100mhrs for setup of decontaminatio trailer and equipment and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Ph I, Trailers - assbly/setup | 120.00 HR | | 0 | 3,000 | 300 | 120 | 0 | 3,420 | 28.50 |
| 06 01 03 02 04. Ph II, Trailers - assbly/setup | | | | | | | | | |
| Allow 100mhrs for setup of decontaminatio trailer and equipment and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 HR | | 0 | 3,000 | 300 | 120 | 0 | 3,420 | 28.50 |
| DECONTAMINATION FACILITIES | | | 0 | 6,000 | 600 | 240 | 0 | 6,840 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 06. SAMPLING SOIL, SED & SOLID WASTE
06 02 06 01. SURFACE SOIL
06 02 06 01 01. PHASE I, Soil Sample
After the top 12" of soil is removed, soil samples will be taken.

06 02 06 01 01 01. Soil Sampling
Sample on 15'x15' grid (50 samples) with analysis at off site lab for BEHP only, with 14-day turnaround. Method 8270. Add 10 QA samples.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Soil Sampling | 60.00 | EA | | 0 | 0 | 0 | 0 | 30,000 | 30,000 | 500.00 |
| QA Report | | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE I, Soil Sample | 60.00 | EA | | 0 | 0 | 0 | 0 | 32,700 | 32,700 | 545.00 |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02 06 01 02. PHASE II, Soil Sample<br>Another set of soil samples will be taken after the next 6" soil layer is excavated. | | | | | | | | | |
| 06 02 06 01 02 01. Soil Sampling<br>Same as Phase I, except with 7-day turnaround, add 25%. | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 37,500 | 37,500 | 625.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE II, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 40,200 | 40,200 | 670.00 |
| SURFACE SOIL | | | 0 | 0 | 0 | 0 | 72,900 | 72,900 | |

06 03. SITE WORK

| | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03. SITE WORK | | | | | | | | | | | |
| 06 03 05. FENCING | | | | | | | | | | | |
| 06 03 05 01. FENCING | | | | | | | | | | | |
| 06 03 05 01 01. Temporary Fencing | | | | | | | | | | | |
| 06 03 05 01 01 01. Temporary Fencing - 6' Security<br>A 6' Security fence will be required during the duration of the cleanup activities around the work site. Cost taken from recent bid quotes. "Other" cost for removal. | | | | | | | | | | | |
| Temporary Fencing - 6' Security | 400.00 | LF | | | 0 | 2,000 | 1,000 | 5,000 | 2,000 | 10,000 | 25.00 |
| Temporary Fencing | 400.00 | LF | | | 0 | 2,000 | 1,000 | 5,000 | 2,000 | 10,000 | 25.00 |
| FENCING | | | | | 0 | 2,000 | 1,000 | 5,000 | 2,000 | 10,000 | |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08. SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | | | |
| 06 08 01. EXCAVATION | | | | | | | | | | | |
| 06 08 01 03. CONTAMINATED SOIL | | | | | | | | | | | |
| 06 08 01 03 01. PHASE I, Excavate/Load PCB Soils | | | | | | | | | | | |
| 06 08 01 03 01 01. Excavate/Load PCB Soils | | | | | | | | | | | |
| L USR AA <02220 0000 > Excavate top 36-inches of soil | | | | | 0.06 | 1.59 | 0.54 | 0.00 | 0.00 | 2.13 | |
| | 350.00 | CY | XXQNA | 28.75 | 21 | 556 | 190 | 0 | 0 | 745 | 2.13 |
| USR AA <02220 0000 > Load excavated/stockpiled soil load in 28-ton dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy | | | | | 0.03 | 0.94 | 0.95 | 0.00 | 0.00 | 1.90 | |
| | 350.00 | CY | XXQMG | 28.75 | 12 | 330 | 334 | 0 | 0 | 664 | 1.90 |
| Excavate/Load PCB Soils | 350.00 | CY | | | 33 | 886 | 523 | 0 | 0 | 1,409 | 4.03 |
| 06 08 01 03 01 02. Transport PCB Soils - Arlington | | | | | | | | | | | |
| USR AA <02220 0000 > Transport soil to Arlington, OR 350 cy x 3,100lb/cy / 2000lb/ton = 542.5 tons @ 28 tons/truck = 19.37 trucks use 20 trucks | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 400.00 | 400.00 | |
| | 20.00 | TRK | | 0.00 | 0 | 0 | 0 | 0 | 8,000 | 8,000 | 400.00 |
| USR AA <02220 0000 > Disposal of soil in landfill | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 134.00 | 134.00 | |
| | 542.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 72,695 | 72,695 | 134.00 |
| USR AA <02220 0000 > Oregon state environmental tax | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 27.00 | 27.00 | |
| | 542.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 14,648 | 14,648 | 27.00 |
| USR AA <02220 0000 > Soil profile fee | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 300.00 | 300.00 | |
| | 1.00 | EA | | 0.00 | 0 | 0 | 0 | 0 | 300 | 300 | 300.00 |
| Transport PCB Soils - Arlington | 350.00 | CY | | | 0 | 0 | 0 | 0 | 95,643 | 95,643 | 273.26 |
| 06 08 01 03 01 03. PPEquip, Modified Class D | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 12.00 | EA | N/A | 0.00 | 0 | 0 | 138 | 0 | 0 | 138 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 12.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 91 | 0 | 91 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 12.00 | PR | N/A | 0.00 | 0 | 0 | 28 | 0 | 0 | 28 | 2.30 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HTW AA <01951 5726 > Half-Mask Air Purifying | | | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| Respirators | 12.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 239 | 0 | 239 | 19.94 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, | | | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| 4.2 gpm, 11 HP (Daily cost) | 3.00 | DAY | ULABA | 0.13 | 30 | 703 | 4 | 104 | 0 | 812 | 270.58 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| Fans (Monthly Rental) | 3.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 81 | 0 | 81 | 26.95 |
| HTW AA <01951 5723 > Cartridges, Respirator | | | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | 24.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 621 | 0 | 621 | 25.87 |
| PPEquip, Modified Class D | 3.00 | DAY | | | 30 | 703 | 170 | 1,136 | 0 | 2,009 | 669.66 |
| PHASE I, Excavate/Load PCB Soils | 230.00 | CY | | | 63 | 1,588 | 693 | 1,136 | 95,643 | 99,060 | 430.70 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 02. PHASE II,Excavate/Load PCB Soils | | | | | | | | | | | |
| 06 08 01 03 02 01. Excavate/Load PCB Soils | | | | | | | | | | | |
| L USR AA <02220 0000 > Excavate next 2-feet of soil | | | | | 0.06 | 1.59 | 0.54 | 0.00 | 0.00 | 2.13 | |
| | 250.00 | CY | XXQNA | 28.75 | 15 | 397 | 135 | 0 | 0 | 532 | 2.13 |
| USR AA <02220 0000 > Load excavated/stockpiled soil load in 28-ton dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy | | | | | 0.03 | 0.94 | 0.95 | 0.00 | 0.00 | 1.90 | |
| | 250.00 | CY | XXQMG | 28.75 | 9 | 236 | 238 | 0 | 0 | 474 | 1.90 |
| Excavate/Load PCB Soils | 250.00 | CY | | | 24 | 633 | 374 | 0 | 0 | 1,006 | 4.03 |
| 06 08 01 03 02 02. Transport PCB Soils - Arlington | | | | | | | | | | | |
| USR AA <02220 0000 > Transport soil to Arlington, OR 250 cy x 3,100lb/cy / 2000lb/ton = 387.5 tons @ 28 tons/truck = 13.8 trucks use 14 trucks | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 400.00 | 400.00 | |
| | 14.00 | TRK | | 0.00 | 0 | 0 | 0 | 0 | 5,600 | 5,600 | 400.00 |
| USR AA <02220 0000 > Disposal of soil in landfill | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 134.00 | 134.00 | |
| | 387.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 51,925 | 51,925 | 134.00 |
| USR AA <02220 0000 > Oregon state environmental tax | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 27.00 | 27.00 | |
| | 387.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 10,463 | 10,463 | 27.00 |
| Transport PCB Soils - Arlington | 250.00 | CY | | | 0 | 0 | 0 | 0 | 67,988 | 67,988 | 271.95 |
| 06 08 01 03 02 03. PPEquip, Modified Class D | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 92 | 0 | 0 | 92 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 60 | 0 | 60 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 8.00 | PR | N/A | 0.00 | 0 | 0 | 18 | 0 | 0 | 18 | 2.30 |
| HTW AA <01951 5726 > Half-Mask Air Purifying Respirators | | | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 160 | 0 | 160 | 19.94 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| | 2.00 | DAY | ULABA | 0.13 | 20 | 469 | 3 | 70 | 0 | 541 | 270.58 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | 2.00 | DAY | N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 26.95<br>54 | 0.00<br>0 | 26.95<br>54 | 26.95 |
| HTW AA <01951 5723 > Cartridges, Respirator | 16.00 | EA | N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 25.87<br>414 | 0.00<br>0 | 25.87<br>414 | 25.87 |
| PPEquip, Modified Class D | 2.00 | DAY | | | 20 | 469 | 113 | 757 | 0 | 1,339 | 669.66 |
| PHASE II,Excavate/Load PCB Soils | 110.00 | CY | | | 44 | 1,101 | 487 | 757 | 67,988 | 70,333 | 639.39 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 03. Post Removal | | | | | | | | | | | |
| 06 08 01 03 03 01. Excavate/Load Crew | | | | | | | | | | | |
| L USR AA <02220 0000 > Excavation crew | | | | | 14.00 | 365.22 | 124.54 | 0.00 | 0.00 | 489.76 | |
| | 1.00 | DAY | XXQNA | 0.13 | 14 | 365 | 125 | 0 | 0 | 490 | 489.76 |
| USR AA <02220 0000 > Load crew load in 28-ton dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy | | | | | 8.00 | 216.72 | 219.31 | 0.00 | 0.00 | 436.03 | |
| | 1.00 | DAY | XXQMG | 0.13 | 8 | 217 | 219 | 0 | 0 | 436 | 436.03 |
| Excavate/Load Crew | 1.00 | DAY | | | 22 | 582 | 344 | 0 | 0 | 926 | 925.80 |
| 06 08 01 03 03 02. PPEquip, Modified Class D | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 4.00 | EA | N/A | 0.00 | 0 | 0 | 46 | 0 | 0 | 46 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 4.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 30 | 0 | 30 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 4.00 | PR | N/A | 0.00 | 0 | 0 | 9 | 0 | 0 | 9 | 2.30 |
| HTW AA <01951 5726 > Half-Mask Air Purifying Respirators | | | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| | 4.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 80 | 0 | 80 | 19.94 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| | 1.00 | DAY | ULABA | 0.13 | 10 | 234 | 1 | 35 | 0 | 271 | 270.58 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | 1.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 27 | 0 | 27 | 26.95 |
| HTW AA <01951 5723 > Cartridges, Respirator | | | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 207 | 0 | 207 | 25.87 |
| PPEquip, Modified Class D | 1.00 | DAY | | | 10 | 234 | 57 | 379 | 0 | 670 | 669.66 |
| Post Removal | | | | | 32 | 816 | 401 | 379 | 0 | 1,595 | |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 91. Safety and Quality Assurance | | | | | | | | | |
| Safety/QA crew: | | | | | | | | | |
| WHC HPT: $50/hr x 40hrs = $2,000 | | | | | | | | | |
| Safety: $70/hr x 40hrs = $2,800 | | | | | | | | | |
| Special Assistance to QA: $50/hr x 8 hrs = $ 400 | | | | | | | | | |
| Total cost/week $5,200 | | | | | | | | | |
| Safety and Quality Assurance | 3.00 WK | | 0 | 15,600 | 0 | 0 | 0 | 15,600 | 5200.00 |
| CONTAMINATED SOIL | | | 139 | 19,106 | 1,581 | 2,272 | 163,630 | 186,589 | |

| 06 21. DEMOBILIZATION | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 21. DEMOBILIZATION | | | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | | | |
| 06 21 04 01 01. PH I, Demob and take down | | | | | | | | | | | |
| Allow 75% of mobilization and setup costs. | | | | | | | | | | | |
| PH I, Demob and take down | | | | | 0 | 4,125 | 1,940 | 0 | 0 | 6,065 | |
| 06 21 04 01 02. PH II, Demob and Take down | | | | | | | | | | | |
| Allow 75% of mobilization and setup costs. | | | | | | | | | | | |
| PH II, Demob and Take down | | | | | 0 | 4,125 | 1,940 | 0 | 0 | 6,065 | |
| TRANSPORTATION | | | | | 0 | 8,250 | 3,880 | 0 | 0 | 12,130 | |
| HANFORD: REMEDIATION | | | | | 139 | 40,356 | 11,631 | 7,712 | 238,530 | 298,229 | |

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT PCBOFF: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, HORN RAPIDS LANDFILL, OFF-SITE DISPSL
** CREW BACKUP **

TIME 09:10:38



| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | ULABA | 1 B-laborer + Small Tools | | | PROD = 100% | | | | CREW HOURS = | 96 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.83 | 0.25 | 5.96 | | | 5.96 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.33 | 1.00 | 23.33 | | | 23.33 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 1.25 | 29.29 | 0.13 | 0.18 | 29.47 |
| | XXQMG | 1 X-eqoprmed + 1 Front End Ldr, 2-1/2 Cy, Wheel | | | PROD = 100% | | | | CREW HOURS = | 58 |
| MIL | L40CA004 E | LDR,FE,WH, 2-1/2CY, ARTIC, 936E | 1.00 | HR | 27.41 | | | 1.00 | 27.41 | 27.41 |
| MIL | X-EQOPRMEDL | Outside Equip. Op. Medium | 1.00 | HR | 27.09 | 1.00 | 27.09 | | | 27.09 |
| | TOTAL | | | | | 1.00 | 27.09 | 1.00 | 27.41 | 54.50 |
| | XXQNA | 1 X-eqoprmed + 1 Dozer, Cat D-38, 65 Hp | | | PROD = 100% | | | | CREW HOURS = | 58 |
| MIL | T10CA001 E | BLADE,POWER ANGLE TILT,FOR D3 | 1.00 | HR | 1.87 | | | 1.00 | 1.87 | 1.87 |
| MIL | T15CA003 E | DOZER,CWLR,D-3C,PS,(ADD BLADE) | 1.00 | HR | 13.70 | | | 1.00 | 13.70 | 13.70 |
| MIL | X-LABORER L | Outside Laborer | 0.50 | HR | 23.33 | 0.50 | 11.67 | | | 11.67 |
| MIL | X-EQOPRMEDL | Outside Equip. Op. Medium | 1.00 | HR | 27.09 | 1.00 | 27.09 | | | 27.09 |
| MIL | X-EQOPRMEDF | Outside Equip. Op. Medium | 0.25 | HR | 27.59 | 0.25 | 6.90 | | | 6.90 |
| | TOTAL | | | | | 1.75 | 45.65 | 2.00 | 15.57 | 61.22 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | **** TOTAL **** | |
| MIL | B-LABORER | Laborer/Helper | 23.33 | 0.0% | 0.0% | 0.00 | 0.00 | 23.33 | HR | 10/15/92 | 22.36 | 120 |
| MIL | X-EQOPRMED | Outside Equipment Oper. Medium | 27.09 | 0.0% | 0.0% | 0.00 | 0.00 | 27.09 | HR | 10/15/92 | 25.84 | 130 |
| MIL | X-LABORER | Outside Laborer | 23.33 | 0.0% | 0.0% | 0.00 | 0.00 | 23.33 | HR | 10/15/92 | 22.36 | 29 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | L40CA004 | LDR,FE,WH, 2-1/2CY, ARTIC, 936E | 8.03 | 2.79 | 3.99 | 1.6 | 8.34 | 2.26 | 0.34 | 27.41 | HR | 58 |
| MIL | T10CA001 | BLADE,POWER ANGLE TILT,FOR D3 | 0.75 | 0.22 | | 0.0 | 0.82 | | | 1.87 | HR | 58 |
| MIL | T15CA003 | DOZER,CWLR,D-3C,PS,(ADD BLADE) | 3.51 | 1.14 | 2.14 | 0.7 | 6.14 | | | 13.70 | HR | 58 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 12 |

THIS PAGE INTENTIONALLY
LEFT BLANK

---

No errors detected...

* * * END OF ERROR REPORT * * *

SUMMARY REPORTS SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 5.....1
PROJECT OWNER SUMMARY - LEVEL 6.....4
PROJECT INDIRECT SUMMARY - LEVEL 5.....8
PROJECT INDIRECT SUMMARY - LEVEL 6.....11

DETAILED ESTIMATE DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION AND PREPATORY WORK
01. MOB OF EQUIPMENT & PERSONNEL
1. TRANSPORTATION
01-. Ph I, Equip Mob, Detailed List.....1
02-. Ph II, Equip Mob, Detailed List.....2
03. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Ph I, Office Trailers - setup.....3
02. Ph II, Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
03. Ph I, Trailers - assbly/setup.....4
04. Ph II, Trailers - assbly/setup.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
06. SAMPLING SOIL, SED & SOLID WASTE
01. SURFACE SOIL
01. PHASE I, Soil Sample
01. Soil Sampling.....5
02. QA Report.....5
02. PHASE II, Soil Sample
01. Soil Sampling.....6
02. QA Report.....6
03. SITE WORK
05. FENCING
01. FENCING
01. Temporary Fencing
01. Temporary Fencing - 6' Security.....7
08. SOLID WASTE COLLECT/CONTAINMENT
01. EXCAVATION
03. CONTAMINATED SOIL
01. PHASE I, Excavate/Load PCB Soils
01. Excavate/Load PCB Soils.....8
02. Transport PCB Soils - Arlington.....8
03. PPEquip, Modified Class D.....8
02. PHASE II,Excavate/Load PCB Soils
01. Excavate/Load PCB Soils.....10
02. Transport PCB Soils - Arlington.....10
03. PPEquip, Modified Class D.....10
03. Post Removal
01. Excavate/Load Crew.....12
02. PPEquip, Modified Class D.....12

DETAILED ESTIMATE DETAIL PAGE

91. Safety and Quality Assurance.....13
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. PH I, Demob and take down.....14
02. PH II, Demob and Take down.....14

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 5
Table of Contents Levels : 6

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |
| | Print Unit Cost Row : | Y | | | | | | | |
| | Print Page Footer : | Y | | | | | | | |
| | Show Cost Codes : | Y | | | | | | | |
| COLUMNS OPTIONS | Print Crew Id : | Y | | | | | | | |
| | Crew Output : | Y | | | | | | | |
| | Unit Cost : | Y | | | | | | | |
| UPB TITLES | No. of Levels to Print : | 0 | | | | | | | |
| | Bracket Titles With : | - : | | | | | | | |
| | Include titles Notes : | Y | | | | | | | |

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y
Link Listing : N

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) |
|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 1 2 3 4 5 6 |
| Detail : | Y | | | |
| Project : | N | Y | Y | N N N N Y Y |
| Contractor : | N | N | | N N N N N N N |
| Division : | N | N | N | Y N N N N N N |
| System : | N | N | N | Y N N N N N N |
| 2nd View : | N | | | |
| Crew : | Y | | | Y N N N N N N |
| Labor : | Y | | | |
| Equipment : | Y | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| Project Information Record | | | | | | | |
| 06 REMEDIAL ACTION | | | | | | | |
| | S & A | P | 15.00 | | | | |
| | CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| 06 02 06 01 01 02 QA Report | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 02 06 01 02 02 QA Report | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 03 SITE WORK | | | | | | |
| 06 03 05 FENCING | | | | | | |
| 06 03 05 01 FENCING | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | |
| 06 03 05 01 01 01 Temporary Fencing - 6' Security | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | |
| 06 08 01 EXCAVATION | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | |
| 06 08 01 03 01 01 Excavate/Load PCB Soils | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 40.00 | | | | |
| 06 08 01 03 01 02 Transport PCB Soils - Arlington | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 01 03 PPEquip, Modified Class D | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | |
| 06 08 01 03 02 01 Excavate/Load PCB Soils | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 40.00 | | | | |
| 06 08 01 03 02 02 Transport PCB Soils - Arlington | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 02 03 PPEquip, Modified Class D | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 08 01 03 | 03 Post Removal | | | | | | |
| 06 08 01 03 | 03 01 Excavate/Load Crew | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 | 03 02 PPEquip, Modified Class D | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 | 91 Safety and Quality Assurance | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 | 01 PH I, Demob and take down | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 21 04 01 | 02 PH II, Demob and Take down | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

DOE/RL-92-67

# HORN RAPIDS LANDFILL
# WAC CAP

9 5 1 2 3 2 1 4 2 9

THIS PAGE INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
HORN RAPIDS LANDFILL
WAC CAP

Designed By: CENPW EE BRANCH
Estimated By: CLENDENON

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/23/92
Est Construction Time: 180 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.2 1100-EM-1 Baselines

This is the structure for the 1100-EM-1 Area remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

"23" is the subproject (ie. 1100-EM)

"01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This estimate covers the Horn Rapids Landfill - WAC cap, which is one alternative being looked at by NPW's Enivornmental Engineering Branch (EE). This Washington Administrative Code (WAC) cap will cover about a 25 Acre landfill site, that contains various hazardous wastes. The WAC cap will consist of 4-feet of random fill, covered by 6-inches of membrane bedding material (1" minus), covered by a 50-mil Geomembrane, and topped with 6-inches of top soil with Dryland grass seeding. A 4" D pipe drainage system will also be installed. A 6,000 LF perimeter fence will enclose the area.

1. Normal Contingency for this level of estimate is 20-30%.

2. Using 50% Contingency for Setup, as it is undefined.

3. Using higher Contingency for the random fill and top soil as quantities may change, and location and costs of fill and top soil have been assumed.

THIS PAGE INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS — SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 5.....1
PROJECT OWNER SUMMARY - LEVEL 6.....4
PROJECT INDIRECT SUMMARY - LEVEL 5.....8
PROJECT INDIRECT SUMMARY - LEVEL 6.....11

DETAILED ESTIMATE — DETAIL PAGE

06. REMEDIAL ACTIONS
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT AND FACILITIES
1. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Assembly and Setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....5
03. SITE WORK
05. FENCING (& MISC)
1. FENCING
01. 6' Security Perimeter Fencing.....6
2. MISCELLANEOUS IMPROVEMENTS
01. Warning Signs.....7
3. LANDSCAPING & TURFING
01. Dryland Grass.....8
08. SOLID WASTE COLLECTION/CONTAINMT
05. CAPPING CONTAMINATED AREAS
1. CAP CONSTRUCTION
01. WAC Cap.....9
2. LEACHATE COLLECTION
01. Leachate Collection System.....13
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & FACILITIES
01. TRANSPORTATION
01. DEMOBILIZATION.....16

BACKUP REPORTS — BACKUP PAGE

CREW BACKUP.....1

LABOR BACKUP.....3
EQUIPMENT BACKUP.....4

* * * END TABLE OF CONTENTS * * *

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT 11HWAC: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, HORN RAPIDS LANDFILL, WAC CAP
** PROJECT OWNER SUMMARY - LEVEL 5 (Rounded to 10's) **

TIME 10:50:29
SUMMARY PAGE 1

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTIONS | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT AND FACILITIES | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | 7,900 | 1,180 | 1,820 | 10,900 | | 1 |
| TRANSPORTATION | | 7,900 | 1,180 | 1,820 | 10,900 | | |
| MOB OF EQUIPMENT AND FACILITIES | | 7,900 | 1,180 | 1,820 | 10,900 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | 3,780 | 570 | 2,170 | 6,520 | | 2 |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,170 | 6,520 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | 3,020 | 450 | 0 | 3,470 | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | 1,520 | 230 | 0 | 1,750 | | |
| DECONTAMINATION FACILITIES | | 4,550 | 680 | 0 | 5,230 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 8,320 | 1,250 | 2,170 | 11,740 | | |
| MOBILIZATION & PREPARATORY WORK | | 16,220 | 2,430 | 3,990 | 22,640 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | 172,280 | 25,840 | 39,630 | 237,750 | | |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| | QA/Safety Monitoring | | 172,280 | 25,840 | 39,630 | 237,750 | | |
| | QA/Safety Monitoring | | 172,280 | 25,840 | 39,630 | 237,750 | | |
| | MONITOR, SAMPLE, TEST, ANALYSIS | | 172,280 | 25,840 | 39,630 | 237,750 | | |
| 06 03 SITE WORK | | | | | | | | |
| 06 03 05 FENCING (& MISC) | | | | | | | | |
| 06 03 05 1 FENCING | | | | | | | | |
| 06 03 05 1 01 | 6' Security Perimeter Fencing | 6000.00 LF | 159,030 | 23,850 | 36,580 | 219,460 | 36.58 | 1 |
| | FENCING | 6000.00 LF | 159,030 | 23,850 | 36,580 | 219,460 | 36.58 | |
| 06 03 05 2 MISCELLANEOUS IMPROVEMENTS | | | | | | | | |
| 06 03 05 2 01 | Warning Signs | | 450 | 70 | 80 | 590 | | 1 |
| | MISCELLANEOUS IMPROVEMENTS | | 450 | 70 | 80 | 590 | | |
| 06 03 05 3 LANDSCAPING & TURFING | | | | | | | | |
| 06 03 05 3 01 | Dryland Grass | 25.00 ACR | 33,130 | 4,970 | 7,620 | 45,720 | 1828.87 | 1 |
| | LANDSCAPING & TURFING | 25.00 ACR | 33,130 | 4,970 | 7,620 | 45,720 | 1828.87 | |
| | FENCING (& MISC) | | 192,610 | 28,890 | 44,270 | 265,780 | | |
| | SITE WORK | | 192,610 | 28,890 | 44,270 | 265,780 | | |
| 06 08 SOLID WASTE COLLECTION/CONTAINMT | | | | | | | | |
| 06 08 05 CAPPING CONTAMINATED AREAS | | | | | | | | |
| 06 08 05 1 CAP CONSTRUCTION | | | | | | | | |
| 06 08 05 1 01 | WAC Cap | 121000.00 SY | 3,111,410 | 466,710 | 1,057,080 | 4,635,200 | 38.31 | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| CAP CONSTRUCTION | | 3,111,410 | 466,710 | 1,057,080 | 4,635,200 | | |
| 06 08 05 2 LEACHATE COLLECTION | | | | | | | |
| 06 08 05 2 01 Leachate Collection System | | 28,450 | 4,270 | 8,180 | 40,900 | | |
| LEACHATE COLLECTION | | 28,450 | 4,270 | 8,180 | 40,900 | | |
| CAPPING CONTAMINATED AREAS | | 3,139,860 | 470,980 | 1,065,260 | 4,676,100 | | |
| SOLID WASTE COLLECTION/CONTAINMT | | 3,139,860 | 470,980 | 1,065,260 | 4,676,100 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DEMOBILIZATION | | 11,930 | 1,790 | 2,740 | 16,460 | | |
| TRANSPORTATION | | 11,930 | 1,790 | 2,740 | 16,460 | | |
| DEMOB OF EQUIPMENT & FACILITIES | | 11,930 | 1,790 | 2,740 | 16,460 | | |
| DEMOBILIZATION | | 11,930 | 1,790 | 2,740 | 16,460 | | |
| REMEDIAL ACTIONS | | 3,532,900 | 529,940 | 1,155,900 | 5,218,740 | | |
| HANFORD: REMEDIATION | | 3,532,900 | 529,940 | 1,155,900 | 5,218,740 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTIONS | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT AND FACILITIES | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 7,900 | 1,180 | 1,820 | 10,900 | | 1 |
| TRANSPORTATION | | 7,900 | 1,180 | 1,820 | 10,900 | | |
| MOB OF EQUIPMENT AND FACILITIES | | 7,900 | 1,180 | 1,820 | 10,900 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | 100.00 HR | 3,780 | 570 | 2,170 | 6,520 | 65.15 | 2 |
| Assembly and Setup | | 3,780 | 570 | 2,170 | 6,520 | | 2 |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,170 | 6,520 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 3,020 | 450 | 0 | 3,470 | 43.44 | |
| Personnel Decon Facilities | | 3,020 | 450 | 0 | 3,470 | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | 40.00 HR | 1,520 | 230 | 0 | 1,750 | 43.82 | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,520 | 230 | 0 | 1,750 | | |
| DECONTAMINATION FACILITIES | | 4,550 | 680 | 0 | 5,230 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 8,320 | 1,250 | 2,170 | 11,740 | | |
| MOBILIZATION & PREPARATORY WORK | | 16,220 | 2,430 | 3,990 | 22,640 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 25.00 WK | 172,280 | 25,840 | 39,630 | 237,750 | 9510.13 | 1 |
| QA/Safety Monitoring | | 172,280 | 25,840 | 39,630 | 237,750 | | |
| QA/Safety Monitoring | | 172,280 | 25,840 | 39,630 | 237,750 | | |
| QA/Safety Monitoring | | 172,280 | 25,840 | 39,630 | 237,750 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 172,280 | 25,840 | 39,630 | 237,750 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING (& MISC) | | | | | | | |
| 06 03 05 1 FENCING | | | | | | | |
| 06 03 05 1 01 6' Security Perimeter Fencing | | | | | | | |
| 6' Security Perimeter Fencing | 6000.00 LF | 159,030 | 23,850 | 36,580 | 219,460 | 36.58 | 1 |
| FENCING | 6000.00 LF | 159,030 | 23,850 | 36,580 | 219,460 | 36.58 | |
| 06 03 05 2 MISCELLANEOUS IMPROVEMENTS | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 03 05 2 01 Warning Signs | | | | | | | |
| Warning Signs | | 450 | 70 | 80 | 590 | | 1 |
| MISCELLANEOUS IMPROVEMENTS | | 450 | 70 | 80 | 590 | | |
| 06 03 05 3 LANDSCAPING & TURFING | | | | | | | |
| 06 03 05 3 01 Dryland Grass | | | | | | | |
| Dryland Grass | 25.00 ACR | 33,130 | 4,970 | 7,620 | 45,720 | 1828.87 | 1 |
| LANDSCAPING & TURFING | 25.00 ACR | 33,130 | 4,970 | 7,620 | 45,720 | 1828.87 | |
| FENCING (& MISC) | | 192,610 | 28,890 | 44,270 | 265,780 | | |
| SITE WORK | | 192,610 | 28,890 | 44,270 | 265,780 | | |
| 06 08 SOLID WASTE COLLECTION/CONTAINMT | | | | | | | |
| 06 08 05 CAPPING CONTAMINATED AREAS | | | | | | | |
| 06 08 05 1 CAP CONSTRUCTION | | | | | | | |
| 06 08 05 1 01 WAC Cap | | | | | | | |
| 06 08 05 1 01 01 Random Fill - 1st 6" | 15000.00 CY | 191,170 | 28,680 | 76,950 | 296,800 | 19.79 | 3 |
| 06 08 05 1 01 02 Random Fill - Next 3.25' | 98000.00 CY | 1,221,380 | 183,210 | 421,380 | 1,825,960 | 18.63 | 3 |
| 06 08 05 1 01 03 6" Fine Grain Membrane Bedding | 17000.00 CY | 292,630 | 43,890 | 100,960 | 437,480 | 25.73 | 3 |
| 06 08 05 1 01 04 50-mil Geomembrane | 105000.00 SY | 925,350 | 138,800 | 266,040 | 1,330,190 | 12.67 | 1 |
| 06 08 05 1 01 05 Top Soil - 6" | 20000.00 CY | 465,340 | 69,800 | 187,300 | 722,450 | 36.12 | 3 |
| 06 08 05 1 01 06 Class D - PPEquip | 10.00 DAY | 15,530 | 2,330 | 4,460 | 22,320 | 2232.42 | 1 |
| WAC Cap | 121000.00 SY | 3,111,410 | 466,710 | 1,057,080 | 4,635,200 | 38.31 | |
| CAP CONSTRUCTION | | 3,111,410 | 466,710 | 1,057,080 | 4,635,200 | | |
| 06 08 05 2 LEACHATE COLLECTION | | | | | | | |
| 06 08 05 2 01 Leachate Collection System | | | | | | | |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| 06 08 05 2 01 01 | 4" Perforated Drain Pipe | 2750.00 LF | 21,910 | 3,290 | 6,300 | 31,500 | 11.46 | 1 |
| 06 08 05 2 01 02 | 4" Collection Pipe | 200.00 LF | 1,440 | 220 | 410 | 2,070 | 10.34 | 1 |
| 06 08 05 2 01 03 | Drywells - 48" D, perf manholes | 4.00 EA | 5,100 | 770 | 1,470 | 7,330 | 1833.15 | 1 |
| | Leachate Collection System | | 28,450 | 4,270 | 8,180 | 40,900 | | |
| | LEACHATE COLLECTION | | 28,450 | 4,270 | 8,180 | 40,900 | | |
| | CAPPING CONTAMINATED AREAS | | 3,139,860 | 470,980 | 1,065,260 | 4,676,100 | | |
| | SOLID WASTE COLLECTION/CONTAINMT | | 3,139,860 | 470,980 | 1,065,260 | 4,676,100 | | |
| 06 21 DEMOBILIZATION | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | |
| 06 21 04 01 01 DEMOBILIZATION | | | | | | | | |
| 06 21 04 01 01 01 | DEMOBILIZATION | | 11,930 | 1,790 | 2,740 | 16,460 | | 1 |
| | DEMOBILIZATION | | 11,930 | 1,790 | 2,740 | 16,460 | | |
| | TRANSPORTATION | | 11,930 | 1,790 | 2,740 | 16,460 | | |
| | DEMOB OF EQUIPMENT & FACILITIES | | 11,930 | 1,790 | 2,740 | 16,460 | | |
| | DEMOBILIZATION | | 11,930 | 1,790 | 2,740 | 16,460 | | |
| | REMEDIAL ACTIONS | | 3,532,900 | 529,940 | 1,155,900 | 5,218,740 | | |
| | HANFORD: REMEDIATION | | 3,532,900 | 529,940 | 1,155,900 | 5,218,740 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTIONS | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT AND FACILITIES | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | 5,960 | 890 | 340 | 580 | 50 | 80 | 7,900 | |
| TRANSPORTATION | | 5,960 | 890 | 340 | 580 | 50 | 80 | 7,900 | |
| MOB OF EQUIPMENT AND FACILITIES | | 5,960 | 890 | 340 | 580 | 50 | 80 | 7,900 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | 2,850 | 430 | 160 | 280 | 20 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 20 | 40 | 3,780 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,020 | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,520 | |
| DECONTAMINATION FACILITIES | | 3,430 | 510 | 200 | 330 | 30 | 50 | 4,550 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,280 | 940 | 360 | 610 | 50 | 80 | 8,320 | |
| MOBILIZATION & PREPARATORY WORK | | 12,240 | 1,840 | 700 | 1,180 | 100 | 160 | 16,220 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,050 | 1,710 | 172,280 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,050 | 1,710 | 172,280 | |
| QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,050 | 1,710 | 172,280 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 130,000 | 19,500 | 7,470 | 12,560 | 1,050 | 1,710 | 172,280 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING (& MISC) | | | | | | | | | |
| 06 03 05 1 FENCING | | | | | | | | | |
| 06 03 05 1 01 6' Security Perimeter Fencing | 6000.00 LF | 120,000 | 18,000 | 6,900 | 11,590 | 970 | 1,570 | 159,030 | 26.51 |
| FENCING | 6000.00 LF | 120,000 | 18,000 | 6,900 | 11,590 | 970 | 1,570 | 159,030 | 26.51 |
| 06 03 05 2 MISCELLANEOUS IMPROVEMENTS | | | | | | | | | |
| 06 03 05 2 01 Warning Signs | | 340 | 50 | 20 | 30 | 0 | 0 | 450 | |
| MISCELLANEOUS IMPROVEMENTS | | 340 | 50 | 20 | 30 | 0 | 0 | 450 | |
| 06 03 05 3 LANDSCAPING & TURFING | | | | | | | | | |
| 06 03 05 3 01 Dryland Grass | 25.00 ACR | 25,000 | 3,750 | 1,440 | 2,420 | 200 | 330 | 33,130 | 1325.27 |
| LANDSCAPING & TURFING | 25.00 ACR | 25,000 | 3,750 | 1,440 | 2,420 | 200 | 330 | 33,130 | 1325.27 |
| FENCING (& MISC) | | 145,340 | 21,800 | 8,360 | 14,040 | 1,170 | 1,910 | 192,610 | |
| SITE WORK | | 145,340 | 21,800 | 8,360 | 14,040 | 1,170 | 1,910 | 192,610 | |
| 06 08 SOLID WASTE COLLECTION/CONTAINMT | | | | | | | | | |
| 06 08 05 CAPPING CONTAMINATED AREAS | | | | | | | | | |
| 06 08 05 1 CAP CONSTRUCTION | | | | | | | | | |
| 06 08 05 1 01 WAC Cap | 121000.00 SY | 2,347,750 | 352,160 | 135,000 | 226,790 | 18,890 | 30,810 | 3,111,410 | 25.71 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| CAP CONSTRUCTION | | 2,347,750 | 352,160 | 135,000 | 226,790 | 18,890 | 30,810 | 3,111,410 | |
| 06 08 05 2 LEACHATE COLLECTION | | | | | | | | | |
| 06 08 05 2 01 Leachate Collection System | | 21,470 | 3,220 | 1,230 | 2,070 | 170 | 280 | 28,450 | |
| LEACHATE COLLECTION | | 21,470 | 3,220 | 1,230 | 2,070 | 170 | 280 | 28,450 | |
| CAPPING CONTAMINATED AREAS | | 2,369,220 | 355,380 | 136,230 | 228,870 | 19,070 | 31,090 | 3,139,860 | |
| SOLID WASTE COLLECTION/CONTAINMT | | 2,369,220 | 355,380 | 136,230 | 228,870 | 19,070 | 31,090 | 3,139,860 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 DEMOBILIZATION | | 9,000 | 1,350 | 520 | 870 | 70 | 120 | 11,930 | |
| TRANSPORTATION | | 9,000 | 1,350 | 520 | 870 | 70 | 120 | 11,930 | |
| DEMOB OF EQUIPMENT & FACILITIES | | 9,000 | 1,350 | 520 | 870 | 70 | 120 | 11,930 | |
| DEMOBILIZATION | | 9,000 | 1,350 | 520 | 870 | 70 | 120 | 11,930 | |
| REMEDIAL ACTIONS | | 2,665,800 | 399,870 | 153,280 | 257,520 | 21,450 | 34,980 | 3,532,900 | |
| HANFORD: REMEDIATION | | 2,665,800 | 399,870 | 153,280 | 257,520 | 21,450 | 34,980 | 3,532,900 | |
| S & A | | | | | | | | 529,940 | |
| SUBTOTAL | | | | | | | | 4,062,840 | |
| CONTINGENCY | | | | | | | | 1,155,900 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 5,218,740 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTIONS | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT AND FACILITIES | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | | | |
| Equipment Mob, Detailed List | | 5,960 | 890 | 340 | 580 | 50 | 80 | 7,900 | |
| TRANSPORTATION | | 5,960 | 890 | 340 | 580 | 50 | 80 | 7,900 | |
| MOB OF EQUIPMENT AND FACILITIES | | 5,960 | 890 | 340 | 580 | 50 | 80 | 7,900 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 20 | 40 | 3,780 | 37.77 |
| Assembly and Setup | | 2,850 | 430 | 160 | 280 | 20 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 20 | 40 | 3,780 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,020 | 37.77 |
| Personnel Decon Facilities | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,020 | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | 40.00 HR | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,520 | 38.10 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,520 | |
| DECONTAMINATION FACILITIES | | 3,430 | 510 | 200 | 330 | 30 | 50 | 4,550 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,280 | 940 | 360 | 610 | 50 | 80 | 8,320 | |
| MOBILIZATION & PREPARATORY WORK | | 12,240 | 1,840 | 700 | 1,180 | 100 | 160 | 16,220 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 25.00 WK | 130,000 | 19,500 | 7,470 | 12,560 | 1,050 | 1,710 | 172,280 | 6891.40 |
| QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,050 | 1,710 | 172,280 | |
| QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,050 | 1,710 | 172,280 | |
| QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,050 | 1,710 | 172,280 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 130,000 | 19,500 | 7,470 | 12,560 | 1,050 | 1,710 | 172,280 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING (& MISC) | | | | | | | | | |
| 06 03 05 1 FENCING | | | | | | | | | |
| 06 03 05 1 01 6' Security Perimeter Fencing | | | | | | | | | |
| 6' Security Perimeter Fencing | 6000.00 LF | 120,000 | 18,000 | 6,900 | 11,590 | 970 | 1,570 | 159,030 | 26.51 |
| FENCING | 6000.00 LF | 120,000 | 18,000 | 6,900 | 11,590 | 970 | 1,570 | 159,030 | 26.51 |
| 06 03 05 2 MISCELLANEOUS IMPROVEMENTS | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 03 05 2 01 Warning Signs | | | | | | | | | |
| Warning Signs | | 340 | 50 | 20 | 30 | 0 | 0 | 450 | |
| MISCELLANEOUS IMPROVEMENTS | | 340 | 50 | 20 | 30 | 0 | 0 | 450 | |
| 06 03 05 3 LANDSCAPING & TURFING | | | | | | | | | |
| 06 03 05 3 01 Dryland Grass | | | | | | | | | |
| Dryland Grass | 25.00 ACR | 25,000 | 3,750 | 1,440 | 2,420 | 200 | 330 | 33,130 | 1325.27 |
| LANDSCAPING & TURFING | 25.00 ACR | 25,000 | 3,750 | 1,440 | 2,420 | 200 | 330 | 33,130 | 1325.27 |
| FENCING (& MISC) | | 145,340 | 21,800 | 8,360 | 14,040 | 1,170 | 1,910 | 192,610 | |
| SITE WORK | | 145,340 | 21,800 | 8,360 | 14,040 | 1,170 | 1,910 | 192,610 | |
| 06 08 SOLID WASTE COLLECTION/CONTAINMT | | | | | | | | | |
| 06 08 05 CAPPING CONTAMINATED AREAS | | | | | | | | | |
| 06 08 05 1 CAP CONSTRUCTION | | | | | | | | | |
| 06 08 05 1 01 WAC Cap | | | | | | | | | |
| 06 08 05 1 01 01 Random Fill - 1st 6" | 15000.00 CY | 144,250 | 21,640 | 8,290 | 13,930 | 1,160 | 1,890 | 191,170 | 12.74 |
| 06 08 05 1 01 02 Random Fill - Next 3.25' | 98000.00 CY | 921,610 | 138,240 | 52,990 | 89,030 | 7,420 | 12,090 | 1,221,380 | 12.46 |
| 06 08 05 1 01 03 6" Fine Grain Membrane Bedding | 17000.00 CY | 220,810 | 33,120 | 12,700 | 21,330 | 1,780 | 2,900 | 292,630 | 17.21 |
| 06 08 05 1 01 04 50-mil Geomembrane | 105000.00 SY | 698,240 | 104,740 | 40,150 | 67,450 | 5,620 | 9,160 | 925,350 | 8.81 |
| 06 08 05 1 01 05 Top Soil - 6" | 20000.00 CY | 351,130 | 52,670 | 20,190 | 33,920 | 2,830 | 4,610 | 465,340 | 23.27 |
| 06 08 05 1 01 06 Class D - PPEquip | 10.00 DAY | 11,720 | 1,760 | 670 | 1,130 | 90 | 150 | 15,530 | 1552.98 |
| WAC Cap | 121000.00 SY | 2,347,750 | 352,160 | 135,000 | 226,790 | 18,890 | 30,810 | 3,111,410 | 25.71 |
| CAP CONSTRUCTION | | 2,347,750 | 352,160 | 135,000 | 226,790 | 18,890 | 30,810 | 3,111,410 | |
| 06 08 05 2 LEACHATE COLLECTION | | | | | | | | | |
| 06 08 05 2 01 Leachate Collection System | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 05 2 01 01 4" Perforated Drain Pipe | 2750.00 LF | 16,540 | 2,480 | 950 | 1,600 | 130 | 220 | 21,910 | 7.97 |
| 06 08 05 2 01 02 4" Collection Pipe | 200.00 LF | 1,090 | 160 | 60 | 100 | 10 | 10 | 1,440 | 7.19 |
| 06 08 05 2 01 03 Drywells - 48" D, perf manholes | 4.00 EA | 3,850 | 580 | 220 | 370 | 30 | 50 | 5,100 | 1275.24 |
| Leachate Collection System | | 21,470 | 3,220 | 1,230 | 2,070 | 170 | 280 | 28,450 | |
| LEACHATE COLLECTION | | 21,470 | 3,220 | 1,230 | 2,070 | 170 | 280 | 28,450 | |
| CAPPING CONTAMINATED AREAS | | 2,369,220 | 355,380 | 136,230 | 228,870 | 19,070 | 31,090 | 3,139,860 | |
| SOLID WASTE COLLECTION/CONTAINMT | | 2,369,220 | 355,380 | 136,230 | 228,870 | 19,070 | 31,090 | 3,139,860 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 01 01 01 DEMOBILIZATION | | 9,000 | 1,350 | 520 | 870 | 70 | 120 | 11,930 | |
| DEMOBILIZATION | | 9,000 | 1,350 | 520 | 870 | 70 | 120 | 11,930 | |
| TRANSPORTATION | | 9,000 | 1,350 | 520 | 870 | 70 | 120 | 11,930 | |
| DEMOB OF EQUIPMENT & FACILITIES | | 9,000 | 1,350 | 520 | 870 | 70 | 120 | 11,930 | |
| DEMOBILIZATION | | 9,000 | 1,350 | 520 | 870 | 70 | 120 | 11,930 | |
| REMEDIAL ACTIONS | | 2,665,800 | 399,870 | 153,280 | 257,520 | 21,450 | 34,980 | 3,532,900 | |
| HANFORD: REMEDIATION | | 2,665,800 | 399,870 | 153,280 | 257,520 | 21,450 | 34,980 | 3,532,900 | |
| S & A | | | | | | | | 529,940 | |
| SUBTOTAL | | | | | | | | 4,062,840 | |
| CONTINGENCY | | | | | | | | 1,155,900 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 5,218,740 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field Office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home Office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

.
.

06. REMEDIAL ACTIONS
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT AND FACILITIES
06 01 01 1. TRANSPORTATION

06 01 01 1 01. Equipment Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi Radius mob is assumed.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 1102 > Mob, Crane, Hyd, SP, 16-25 Ton, Rough Terrain, 4WD, 100-mi Rad | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 500.00 |
| USR AA <01505 3237 > Mob, FEnd Ldr, Wheel, 6.0-8 CY, Articulated Fr, 100-mi rad | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 1300.00<br>1,300 | 0.00<br>0 | 0.00<br>0 | 1300.00<br>1,300 | 1300.00 |
| USR AA <01505 4201 > Mob, Roller, Towed, 50-75 Ton, Pneumatic, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 550.00 |
| USR AA <01505 5203 > Mob, Motor Grader, 150-200 HP, Art. Fr, Pwr Shift, 100-mi Rad | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 525.00 |
| USR AA <01505 6116 > Mob, Dozer, Crawler, 225-350 HP w/blade, Incl Setup, 100-mi Rad | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 925.00<br>925 | 0.00<br>0 | 0.00<br>0 | 925.00<br>925 | 925.00 |
| USR AA <01505 7111 > Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 7123 > Mob, Bottom Dump trailer, 30 Ton | | | | | 0.00 | 0.00 | 125.00 | 0.00 | 0.00 | 125.00 | |
| w/CLT8000 Trk, 100-mi Radius | 12.00 | EA | | 0.00 | 0 | 0 | 1,500 | 0 | 0 | 1,500 | 125.00 |
| USR AA <01505 7131 > Mob, Water Tank, 3,000 Gal, | | | | | 0.00 | 0.00 | 150.00 | 0.00 | 0.00 | 150.00 | |
| Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | | 0.00 | 0 | 0 | 150 | 0 | 0 | 150 | 150.00 |
| USR AA <01505 8921 > Mob, Decontamination Trailer, | | | | | 0.00 | 0.00 | 135.00 | 0.00 | 0.00 | 135.00 | |
| w/25,000 GVW Trk, 100-mi Radius | 1.00 | EA | | 0.00 | 0 | 0 | 135 | 0 | 0 | 135 | 135.00 |
| M CIV AA <01500 1101 > Mob - Field Office Trailer | | | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 | EA | N/A | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| Equipment Mob, Detailed List | | | | | 0 | 0 | 5,960 | 0 | 0 | 5,960 | |
| TRANSPORTATION | | | | | 0 | 0 | 5,960 | 0 | 0 | 5,960 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01. Assembly and Setup | | | | | | | | | |
| 06 01 04 01 01 01. Assembly and Setup | | | | | | | | | |
| Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Assembly and Setup | 100.00 HR | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Assembly and Setup | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | | | |
| 06 01 04 02 01. Personnel Decon Facilities | | | | | | | | | | | |
| 06 01 04 02 01 01. Personnel Decon Facilities<br>Allow 80 mhrs for setup of Decontamination trailer. Self contained unit includes changing rooms and showers. An allowancy for some equipment and materials has been added. | | | | | | | | | | | |
| Personnel Decon Facilities | 80.00 | HR | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Personnel Decon Facilities | | | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| 06 01 04 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | | | |
| 06 01 04 02 02 01. Equip/Vehicle Decon Facilities<br>Allow 40 mhrs for setup of equipment decon facilities. | | | | | | | | | | | |
| Equip/Vehicle Decon Facilities | 40.00 | HR | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | 28.75 |
| Equip/Vehicle Decon Facilities | | | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| DECONTAMINATION FACILITIES | | | | | 0 | 3,000 | 300 | 130 | 0 | 3,430 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 91. QA/Safety Monitoring
06 02 91 01. QA/Safety Monitoring

06 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

06 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

| | | |
|---|---|---|
| WHC HPT: | 40 Hrs @ $50/Hr | = $2,000 |
| COE Safety Rep: | 40 Hrs @ $70/Hr | = 2,800 |
| COE S.A. for QA: | 8 Hrs @ $50/Hr | 400 |
| | | $5,200/wk |

Estimated duration of job is 25 weeks, with 1 week for Mob, Setup, & Demob.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | 25.00 WK | | 0 | 130,000 | 0 | 0 | 0 | 130,000 | 5200.00 |
| QA/Safety Monitoring | | | 0 | 130,000 | 0 | 0 | 0 | 130,000 | |
| QA/Safety Monitoring | | | 0 | 130,000 | 0 | 0 | 0 | 130,000 | |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03. SITE WORK | | | | | | | | | | | |
| 06 03 05. FENCING (& MISC) | | | | | | | | | | | |
| 06 03 05 1. FENCING | | | | | | | | | | | |
| 06 03 05 1 01. 6' Security Perimeter Fencing | | | | | | | | | | | |
| A 6' Security perimeter fence is needed around the site, including a 20' gate. A unit cost of $20/LF will be used for the fence based on recent bid opening prices. Assume following breakdown: $5.00 labor, $2.50 equip, and $12.50 Material. | | | | | | | | | | | |
| . | | | | | | | | | | | |
| 6' Security Perimeter Fencing | 6000.00 | LF | | | 780 | 30,000 | 15,000 | 75,000 | 0 | 120,000 | 20.00 |
| FENCING | 6000.00 | LF | | | 780 | 30,000 | 15,000 | 75,000 | 0 | 120,000 | 20.00 |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03 05 2. MISCELLANEOUS IMPROVEMENTS | | | | | | | | | | | |
| 06 03 05 2 01. Warning Signs | | | | | | | | | | | |
| USR AA <01951 7911 > 10"x 14" Warning signs | | | | | 0.00 | 1.75 | 0.00 | 15.09 | 0.00 | 16.84 | |
| Alum/Acrylic, attached to fence | 20.00 | EA | N/A | 0.00 | 0 | 35 | 0 | 302 | 0 | 337 | 16.84 |
| Warning Signs | | | | | 0 | 35 | 0 | 302 | 0 | 337 | |
| MISCELLANEOUS IMPROVEMENTS | | | | | 0 | 35 | 0 | 302 | 0 | 337 | |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03 05 3. LANDSCAPING & TURFING | | | | | | | | | | | |
| 06 03 05 3 01. Dryland Grass<br>Topsoil to be seeded with dryland grass, 25 Acres. Price used based on recent bid prices for dryland grass per acre.<br>. | | | | | | | | | | | |
| Dryland Grass | 25.00 | ACR | | | 0 | 17,500 | 6,250 | 1,250 | 0 | 25,000 | 1000.00 |
| LANDSCAPING & TURFING | 25.00 | ACR | | | 0 | 17,500 | 6,250 | 1,250 | 0 | 25,000 | 1000.00 |

| 06 08. SOLID WASTE COLLECTION/CONTAINMT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08. SOLID WASTE COLLECTION/CONTAINMT | | | | | | | | | |
| 06 08 05. CAPPING CONTAMINATED AREAS | | | | | | | | | |
| 06 08 05 1. CAP CONSTRUCTION | | | | | | | | | |
| 06 08 05 1 01. WAC Cap<br>WAC cap to cover about 25 Acres, or 121,000 SY. Cap is made from 4' of random fill covered by 6" of bedding material, 50-mil Geomembrane, and 6" of top soil. Special precautions must be taken for the first 6" layer, until the asbestos materials are covered. | | | | | | | | | |
| 06 08 05 1 01 01. Random Fill - 1st 6"<br>This item covers the first 6" of random fill. Fill material must be spread from the perimeter in, so as not create fugitive asbestos containing dust. Modified Class D worker protection will be required until this 6" layer is in-place. Random fill assumed available within 10-mi radius, will use a ten truck crew of 30-CY dumps. | | | | | | | | | |
| USR AA <02212 1001 > 6" random fill, spread to center to avoid asbestos disturbance. Q: 15,000 CY, use 1.2 swell factor == 18,000 LCY. | | | 0.02 | 0.49 | 0.59 | 0.00 | 0.00 | 1.09 | |
| | 18000 LCY ZHANC01 | 275.00 | 344 | 8,908 | 10,649 | 0 | 0 | 19,557 | 1.09 |
| USR AA <02225 3109 > 10, 30-CY Trucks, 10-mi Haul one-way. Assume: 20 mph ave haul, 90% fill factor, which yields = 275 LCY/HR. Assume random fill available for $3.50/CY (crew has 2 extra dump trucks on standby to allow for breakdowns & maintenance). | | | 0.05 | 1.26 | 1.51 | 3.77 | 0.00 | 6.54 | |
| | 18000 LCY ZHANC02 | 275.00 | 851 | 22,642 | 27,110 | 67,914 | 0 | 117,666 | 6.54 |
| L CIV AA <02225 2372 > Excav & Load, 7-CY Whl Mtd Ldr, Med Matl, 355 CY/Hr (275 CY/Hr based on haul production rate). | | | 0.01 | 0.14 | 0.25 | 0.00 | 0.00 | 0.39 | |
| | 18000 LCY CODLL | 275.00 | 99 | 2,578 | 4,451 | 0 | 0 | 7,029 | 0.39 |
| Random Fill - 1st 6" | 15000 CY | | 1,294 | 34,128 | 42,210 | 67,914 | 0 | 144,252 | 9.62 |

| 06 08. SOLID WASTE COLLECTION/CONTAINMT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 05 1 01 02. Random Fill - Next 3.25' This item covers placement of the next 3.25 Ft (98,000 CY) of random fill material. Fill can be spread as best suited. No further worker protection needed. | | | | | | | | | |
| USR AA <02212 1001 > Next 3.5' random fill, spread Q: 98,000 CY, use 1.2 swell factor == 115,000 LCY. | | | 0.02 | 0.49 | 0.59 | 0.00 | 0.00 | 1.09 | |
| | 115000 LCY ZHANC01 | 275.00 | 2,197 | 56,914 | 68,034 | 0 | 0 | 124,948 | 1.09 |
| USR AA <02225 3109 > 10, 30-CY Trucks, 10-mi Haul one-way. Assume: 20 mph ave haul, 90% fill factor, which yields = 275 LCY/HR. Assume random fill available for $3.50/CY (crew has 2 extra dump trucks on standby to allow for breakdowns & maintenance). | | | 0.05 | 1.26 | 1.51 | 3.77 | 0.00 | 6.54 | |
| | 115000 LCY ZHANC02 | 275.00 | 5,440 | 144,659 | 173,202 | 433,895 | 0 | 751,755 | 6.54 |
| L CIV AA <02225 2372 > Excav & Load, 7-CY Whl Mtd Ldr, Med Matl, 355 CY/Hr (275 CY/Hr based on haul production rate). | | | 0.01 | 0.14 | 0.25 | 0.00 | 0.00 | 0.39 | |
| | 115000 LCY CODLL | 275.00 | 633 | 16,468 | 28,440 | 0 | 0 | 44,908 | 0.39 |
| Random Fill - Next 3.25' | 98000 CY | | 8,269 | 218,040 | 269,675 | 433,895 | 0 | 921,610 | 9.40 |
| 06 08 05 1 01 03. 6" Fine Grain Membrane Bedding This item covers suppling the 6" fine grain membrane bedding material. Assume material available locally for $7.50/CY. | | | | | | | | | |
| USR AA <02212 1001 > 6" Fine grain bedding, 1" minus Q: 17,000 CY, use 1.1 swell factor == 18,500 LCY. | | | 0.02 | 0.49 | 0.59 | 0.00 | 0.00 | 1.09 | |
| | 18500 LCY ZHANC01 | 275.00 | 353 | 9,156 | 10,945 | 0 | 0 | 20,100 | 1.09 |
| USR AA <02225 3109 > 10, 30-CY Trucks, 10-mi Haul one-way. Assume: 20 mph ave haul, 90% fill factor, which yields = 275 LCY/HR. Assume bedding available for $7.50/CY (crew has 2 extra dump trucks on standby to allow for breakdowns & maintenance). | | | 0.05 | 1.26 | 1.51 | 8.09 | 0.00 | 10.85 | |
| | 18500 LCY ZHANC02 | 275.00 | 875 | 23,271 | 27,863 | 149,573 | 0 | 200,707 | 10.85 |
| 6" Fine Grain Membrane Bedding | 17000 CY | | 1,228 | 32,427 | 38,807 | 149,573 | 0 | 220,807 | 12.99 |

| 06 08. SOLID WASTE COLLECTION/CONTAINMT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 05 1 01 04. 50-mil Geomembrane<br>This item covers the installation of the geomembrane, assumed to be 50-mil PVC. The crew consists of 6 laborers, 2 skilled workers, a flatbed truck, and a 22-Ton Hydra crane. | | | | | | | | | |
| USR AA <02081 2144 > 50-Mil PVC membrane | | | 0.06 | 1.45 | 0.30 | 4.58 | 0.00 | 6.33 | |
| Q: 105,000 SY, no overlap, so add 5% == 110,250 SY | 110250 SY ZHANC03 | 165.00 | 6,681 | 160,403 | 32,722 | 505,110 | 0 | 698,235 | 6.33 |
| 50-mil Geomembrane | 105000 SY | | 6,681 | 160,403 | 32,722 | 505,110 | 0 | 698,235 | 6.65 |
| 06 08 05 1 01 05. Top Soil - 6"<br>This item covers placement of 6" top soil layer over the random fill. Assuming top soil locally available for $10/CY. | | | | | | | | | |
| USR AA <02212 1001 > 6" Top soil, spread/compact | | | 0.02 | 0.49 | 0.59 | 0.00 | 0.00 | 1.09 | |
| Q: 20,000 CY, use 1.2 swell factor == 24,000 LCY. | 24000 LCY ZHANC01 | 275.00 | 458 | 11,878 | 14,198 | 0 | 0 | 26,076 | 1.09 |
| USR AA <02225 3109 > 10, 30-CY Trucks, 10-mi Haul | | | 0.05 | 1.26 | 1.51 | 10.78 | 0.00 | 13.54 | |
| one-way. Assume: 20 mph ave haul, 90% fill factor, which yields = 275 LCY/HR. Assume top soil available for $10/CY (crew has 2 extra dump trucks on standby to allow for breakdowns & maintenance). | 24000 LCY ZHANC02 | 275.00 | 1,135 | 30,190 | 36,146 | 258,720 | 0 | 325,056 | 13.54 |
| Top Soil - 6" | 20000 CY | | 1,594 | 42,067 | 50,345 | 258,720 | 0 | 351,132 | 17.56 |
| 06 08 05 1 01 06. Class D - PPEquip<br>Assume workers in Class C PPE until 6" of random fill covers all of landfill area, estimated to be 10 working days. Included also is a decontam. shower, and equipment decontamination equipment. | | | | | | | | | |
| M HTW AA <01951 5101 > Latex Boots | | | 0.00 | 0.00 | 5.25 | 0.00 | 0.00 | 5.25 | |
| | 40.00 PR N/A | 0.00 | 0 | 0 | 210 | 0 | 0 | 210 | 5.25 |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 40.00 EA N/A | 0.00 | 0 | 0 | 460 | 0 | 0 | 460 | 11.50 |
| M HTW AA <01951 5303 > Basic Level B Suit (Lg) | | | 0.00 | 0.00 | 175.00 | 0.00 | 0.00 | 175.00 | |
| | 40.00 EA N/A | 0.00 | 0 | 0 | 7,000 | 0 | 0 | 7,000 | 175.00 |

| 06 08. SOLID WASTE COLLECTION/CONTAINMT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 40.00 | PR | N/A | 0.00 | 0 | 0 | 92 | 0 | 0 | 92 | 2.30 |
| M HTW AA <01951 5728 > Powered Air-Purifying (PARP) | | | | | 0.00 | 0.00 | 25.00 | 0.00 | 0.00 | 25.00 | |
| Respirator w/ Batt Pack | 40.00 | EA | N/A | 0.00 | 0 | 0 | 1,000 | 0 | 0 | 1,000 | 25.00 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, | | | | | 10.00 | 232.40 | 1.45 | 34.83 | 0.00 | 268.68 | |
| 4.2 gpm, 11 HP (Daily cost) | 10.00 | DAY | ULABA | 0.13 | 100 | 2,324 | 14 | 348 | 0 | 2,687 | 268.68 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| Fans (Monthly Rental) | 10.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 270 | 0 | 270 | 26.95 |
| Class D - PPEquip | 10.00 | DAY | | | 100 | 2,324 | 8,776 | 618 | 0 | 11,718 | 1171.83 |
| WAC Cap | 121000 | SY | | | 19,166 | 489,389 | 442,536 | 1,415,830 | 0 | 2,347,754 | 19.40 |
| CAP CONSTRUCTION | | | | | 19,166 | 489,389 | 442,536 | 1,415,830 | 0 | 2,347,754 | |

| 06 08. SOLID WASTE COLLECTION/CONTAINMT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08 05 2. LEACHATE COLLECTION | | | | | | | | | | | |
| 06 08 05 2 01. Leachate Collection System | | | | | | | | | | | |
| 06 08 05 2 01 01. 4" Perforated Drain Pipe<br>This item covers installation of the 4" D perforated drain piping, including trenching, bedding, and backfilling. | | | | | | | | | | | |
| USR AA <02221 1302 > Trench, 1 CY Backhoe, Med Soil | | | | | 0.02 | 0.38 | 0.12 | 0.00 | 0.00 | 0.50 | |
| 128 CY/Hr, use: 100 CY/Hr | 650.00 | LCY | CODEG | 100.00 | 10 | 249 | 76 | 0 | 0 | 325 | 0.50 |
| M USR AA <02221 8001 > Backfill Pipe Bedding w/Backhoe | | | | | 0.05 | 1.28 | 0.39 | 16.17 | 0.00 | 17.84 | |
| Without Compaction. Material cost covers buying and delivery of bedding material.<br>Q: 150 CY x 1.1 == 165 LCY | 165.00 | LCY | CODEG | 30.00 | 8 | 211 | 64 | 2,668 | 0 | 2,943 | 17.84 |
| USR AA <02082 1312 > 4" D, Sch 40, 2-4 rows of slots | | | | | 0.08 | 1.92 | 0.01 | 2.05 | 0.00 | 3.98 | |
| | 2750.00 | LF | ULABD | 40.00 | 224 | 5,275 | 41 | 5,633 | 0 | 10,948 | 3.98 |
| USR AA <02221 5003 > Backfill Trench w/Backhoe | | | | | 0.04 | 1.10 | 0.33 | 0.00 | 0.00 | 1.43 | |
| Without Compaction. Assuming backfill at 3x bedding quantity | 500.00 | LCY | CODEG | 35.00 | 21 | 548 | 167 | 0 | 0 | 715 | 1.43 |
| L MIL AA <02221 7002 > Compaction, 6" Layers, Vib Plate | | | | | 0.10 | 2.33 | 0.08 | 0.00 | 0.00 | 2.41 | |
| (15cm) Layers | 665.00 | CY | CLACC | 30.00 | 67 | 1,550 | 54 | 0 | 0 | 1,604 | 2.41 |
| 4" Perforated Drain Pipe | 2750.00 | LF | | | 330 | 7,832 | 403 | 8,301 | 0 | 16,536 | 6.01 |
| 06 08 05 2 01 02. 4" Collection Pipe<br>This item includes trenching, bedding, and backfilling. | | | | | | | | | | | |
| USR AA <02221 1302 > Trench, 1 CY Backhoe, Med Soil | | | | | 0.02 | 0.38 | 0.12 | 0.00 | 0.00 | 0.50 | |
| 128 CY/Hr, use: 100 CY/Hr | 45.00 | LCY | CODEG | 100.00 | 1 | 17 | 5 | 0 | 0 | 23 | 0.50 |
| M USR AA <02221 8001 > Backfill Pipe Bedding w/Backhoe | | | | | 0.05 | 1.28 | 0.39 | 16.17 | 0.00 | 17.84 | |
| Without Compaction. Material cost covers buying and delivery of bedding material.<br>Q: 10 CY x 1.1 == 11 LCY | 11.00 | LCY | CODEG | 30.00 | 1 | 14 | 4 | 178 | 0 | 196 | 17.84 |
| L USR AA <02082 1415 > 4" D, PVC, Sdr 21, collection | | | | | 0.09 | 2.19 | 0.02 | 1.35 | 0.00 | 3.56 | |
| | 200.00 | LF | ULABD | 35.00 | 19 | 438 | 3 | 270 | 0 | 711 | 3.56 |

| 06 08. SOLID WASTE COLLECTION/CONTAINMT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <02221 5003 > Backfill Trench w/Backhoe | | | | | 0.04 | 1.10 | 0.33 | 0.00 | 0.00 | 1.43 | |
| Without Compaction. Assuming backfill at 3x bedding quantity | 33.00 | LCY | CODEG | 35.00 | 1 | 36 | 11 | 0 | 0 | 47 | 1.43 |
| L MIL AA <02221 7002 > Compaction, 6" Layers, Vib Plate | | | | | 0.10 | 2.33 | 0.08 | 0.00 | 0.00 | 2.41 | |
| (15cm) Layers | 45.00 | CY | CLACC | 30.00 | 5 | 105 | 4 | 0 | 0 | 109 | 2.41 |
| 4" Collection Pipe | 200.00 | LF | | | 26 | 611 | 28 | 447 | 0 | 1,086 | 5.43 |
| 06 08 05 2 01 03. Drywells - 48" D, perf manholes | | | | | | | | | | | |
| Perforated drywells: 4' D x 10' deep. Includes excavation/backfill. | | | | | | | | | | | |
| HTW AA <02082 1615 > 3 Ft High x 4 Ft Dia Manhole | | | | | 3.25 | 76.72 | 0.60 | 209.13 | 0.00 | 286.45 | |
| Base - No Outlets | 4.00 | EA | ULABD | 1.00 | 13 | 307 | 2 | 837 | 0 | 1,146 | 286.45 |
| HTW AA <02082 1612 > 2-Ft High Riser Section, with | | | | | 1.63 | 38.36 | 0.30 | 125.05 | 0.00 | 163.71 | |
| steps - 4 Ft Dia, 2 ea needed per manhole. | 8.00 | EA | ULABD | 2.00 | 13 | 307 | 2 | 1,000 | 0 | 1,310 | 163.71 |
| HTW AA <02082 1613 > 3.25 Ft High Upper Unit, with | | | | | 3.25 | 76.72 | 0.60 | 187.57 | 0.00 | 264.89 | |
| steps - 4 Ft Dia | 4.00 | EA | ULABD | 1.00 | 13 | 307 | 2 | 750 | 0 | 1,060 | 264.89 |
| USR AA <02221 1302 > Trench, 1 CY Backhoe, Med Soil | | | | | 0.06 | 1.53 | 0.47 | 0.00 | 0.00 | 2.00 | |
| 128 CY/Hr, use: 100 CY/Hr Approximately: 12 LCY each x 4 == 48 LCY | 48.00 | LCY | CODEG | 25.00 | 3 | 74 | 22 | 0 | 0 | 96 | 2.00 |
| M USR AA <02221 8001 > Backfill Bedding w/Backhoe | | | | | 0.09 | 2.40 | 0.73 | 16.17 | 0.00 | 19.30 | |
| Without Compaction. Material cost covers buying and delivery of bedding material. Use: 0.5 CY ea x 4 == 2 LCY | 2.00 | LCY | CODEG | 16.00 | 0 | 5 | 1 | 32 | 0 | 39 | 19.30 |
| USR AA <02221 5003 > Backfill manhole w/Backhoe | | | | | 0.06 | 1.53 | 0.47 | 0.00 | 0.00 | 2.00 | |
| Without Compaction. Assuming backfill at 5 LCY each x 4 | 20.00 | LCY | CODEG | 25.00 | 1 | 31 | 9 | 0 | 0 | 40 | 2.00 |
| L MIL AA <02221 7002 > Compaction, 6" Layers, Vib Plate | | | | | 0.30 | 6.99 | 0.25 | 0.00 | 0.00 | 7.24 | |
| (15cm) Layers | 22.00 | CY | CLACC | 10.00 | 7 | 154 | 5 | 0 | 0 | 159 | 7.24 |
| Drywells - 48" D, perf manholes | 4.00 | EA | | | 50 | 1,184 | 46 | 2,620 | 0 | 3,849 | 962.25 |

| 06 08. SOLID WASTE COLLECTION/CONTAINMT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Leachate Collection System | | | | | 405 | 9,627 | 476 | 11,368 | 0 | 21,471 | |
| LEACHATE COLLECTION | | | | | 405 | 9,627 | 476 | 11,368 | 0 | 21,471 | |

| 06 21. DEMOBILIZATION | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 21. DEMOBILIZATION | | | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | | | |
| 06 21 04 01 01. DEMOBILIZATION | | | | | | | | | | | |
| 06 21 04 01 01 01. DEMOBILIZATION<br>Assume Demob at 75% of Mob and Setup. | | | | | | | | | | | |
| DEMOBILIZATION | | | | | 0 | 0 | 9,000 | 0 | 0 | 9,000 | |
| DEMOBILIZATION | | | | | 0 | 0 | 9,000 | 0 | 0 | 9,000 | |
| TRANSPORTATION | | | | | 0 | 0 | 9,000 | 0 | 0 | 9,000 | |
| HANFORD: REMEDIATION | | | | | 20,351 | 682,051 | 479,772 | 1,503,979 | 0 | 2,665,802 | |

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CLACC | 3 B-laborer + 1 Hand Vibrating Compactor, 4 Hp | | | PROD = 100% | | | | CREW HOURS = | 52 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 1.00 | HR | 23.64 | 1.00 | 23.64 | | | 23.64 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 2.00 | HR | 23.14 | 2.00 | 46.28 | | | 46.28 |
| MIL | C10WC003 E | RAMMER,VIB,MAN, 13" X 11" SHOE | 1.00 | HR | 2.14 | | | 1.00 | 2.14 | 2.14 |
| MIL | XMIXX020 E | Small Tools | 0.23 | HR | 1.39 | | | 0.23 | 0.32 | 0.32 |
| | TOTAL | | | | | 3.00 | 69.92 | 1.23 | 2.46 | 72.38 |
| | CODEG | 1 B-eqoprmed + 1 Backhoe Loader, 55 Hp | | | PROD = 100% | | | | CREW HOURS = | 62 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 11.69 | 50.03 |
| | CODLL | 1 B-eqoprmed + 1 Front End Ldr, 7 Cy, Wheel Mtd | | | PROD = 100% | | | | CREW HOURS = | 967 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRCRNL | Eq Oper, Crane/Shovl | 1.00 | HR | 27.82 | 1.00 | 27.82 | | | 27.82 |
| MIL | L40FI008 E | LDR,FE,WH,7.00CY 4WD ARTIC PWSH | 1.00 | HR | 68.00 | | | 1.00 | 68.00 | 68.00 |
| | TOTAL | | | | | 1.50 | 39.39 | 1.00 | 68.00 | 107.39 |
| | ULABA | 1 B-laborer + Small Tools | | | PROD = 100% | | | | CREW HOURS = | 160 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 1.25 | 29.05 | 0.13 | 0.18 | 29.23 |
| | ULABD | 2 B-skillwkr + Small Tools | | | PROD = 100% | | | | CREW HOURS = | 173 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-SKILLWKRL | Skilled Worker | 2.00 | HR | 23.76 | 2.00 | 47.52 | | | 47.52 |
| MIL | B-SKILLWKRF | Skilled Worker | 0.25 | HR | 24.26 | 0.25 | 6.07 | | | 6.07 |
| MIL | XMIXX020 E | Small Tools | 0.43 | HR | 1.39 | | | 0.43 | 0.60 | 0.60 |
| | TOTAL | | | | | 3.25 | 76.72 | 0.43 | 0.60 | 77.32 |
| | ZHANC01 | Mat Distr Crew: D8 Dozer + 14G Grader + Water Tk | | | PROD = 100% | | | | CREW HOURS = | 1276 |
| MIL * | R40HY004 E | ROLL,VIB,TOWED,STL,PAD,58"D,60" | 1.00 | HR | 10.62 | | | 1.00 | 10.62 | 10.62 |
| MIL | T10CA017 E | BLADE, UNIVERSAL,HYDR,FOR D8 | 1.00 | HR | 7.20 | | | 1.00 | 7.20 | 7.20 |
| MIL | T15CA015 E | DOZER,CWLR,CAT D-8L, (ADD BLADE | 1.00 | HR | 73.29 | | | 1.00 | 73.29 | 73.29 |
| MIL | G15CA005 E | GRADER,MOTOR,CAT14-G, ARTIC | 1.00 | HR | 41.08 | | | 1.00 | 41.08 | 41.08 |
| MIL | T40XX033 E | WATER TANK, 3000 GAL (ADD TRUCK | 1.00 | HR | 3.15 | | | 1.00 | 3.15 | 3.15 |
| MIL | T50FQ015 E | TRK, HWY, 54,000 GVW, 3 AXLE | 1.00 | HR | 25.97 | | | 1.00 | 25.97 | 25.97 |
| MIL | XMIXX020 E | Small Tools | 1.00 | HR | 1.39 | | | 1.00 | 1.39 | 1.39 |
| MIL | B-EQOPRCRNL | Eq Oper, Crane/Shovl | 1.00 | HR | 27.82 | 1.00 | 27.82 | | | 27.82 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | B-EQOPROILL | Eq Oper, Oilers | 1.00 | HR | 24.54 | 1.00 | 24.54 | | | 24.54 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |

9 3 1 2 3 5 2 1 4 5 7

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MIL | B-TRKDVRHVL Truck Drivers, Heavy | 1.00 HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| USR | B-EQOPRCRNF Eq Oper, Crane/Shovl | 0.25 HR | 28.32 | 0.25 | 7.08 | | | 7.08 |
| | TOTAL | | | 5.25 | 136.09 | 7.00 | 162.70 | 298.79 |

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | **** LABOR **** COST | **** EQUIP **** HOURS | **** EQUIP **** COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | ZHANC02 | 12 Bottom Dump Trks, 30-CY & Drivers | | | PROD = 100% | | | | CREW HOURS = | 1276 |
| MIL * | XMIXX020 E | Small Tools | 1.00 | HR | 1.39 | | | 1.00 | 1.39 | 1.39 |
| MIL * | T45XX003 E | TRK TRLR,BOTTOM DUMP, 30CY,30T | 10.00 | HR | 7.11 | | | 10.00 | 71.06 | 71.06 |
| MIL * | T50KE003 E | TRK, HWY, 3AXLE, 46,000 GVW | 10.00 | HR | 32.37 | | | 10.00 | 323.66 | 323.66 |
| MIL * | B-TRKDVRHVL | Truck Drivers, Heavy | 11.00 | HR | 27.24 | 11.00 | 299.64 | | | 299.64 |
| MIL * | B-LABORER L | Laborer (Semi-Skilled) | 2.00 | HR | 23.14 | 2.00 | 46.28 | | | 46.28 |
| USR | T45XX003 U | TRK TRLR,BOTTOM DUMP, 30CY,30T | 2.00 | HR | 2.25 | 2.00 | 4.50 | | | 4.50 |
| MIL | T50KE003 U | TRK, HWY, 3AXLE, 46,000 GVW | 2.00 | HR | 6.79 | 2.00 | 13.58 | | | 13.58 |
| | TOTAL | | | | | 13.00 | 345.92 | 25.00 | 414.19 | 760.11 |
| | ZHANC03 | Skilled Laborers + 3T Flatbed + 22 Ton Hydr Crn | | | PROD = 100% | | | | CREW HOURS = | 1336 |
| MIL * | XMIXX020 E | Small Tools | 2.00 | HR | 1.39 | | | 2.00 | 2.78 | 2.78 |
| MIL * | T50FO006 E | TRK, HWY,F600,21,000 GVW, 2 AXL | 1.00 | HR | 15.12 | | | 1.00 | 15.12 | 15.12 |
| MIL | T40XX012 E | TRUCK OPT,FLATBED, 8' x 9.0' | 1.00 | HR | 0.49 | | | 1.00 | 0.49 | 0.49 |
| MIL | C75GV007 E | CRANE,HYD,SELF,ROUGH TER,4WD,22 | 1.00 | HR | 30.57 | | | 1.00 | 30.57 | 30.57 |
| MIL * | B-LABORER L | Laborer (Semi-Skilled) | 6.00 | HR | 23.14 | 6.00 | 138.84 | | | 138.84 |
| MIL * | B-SKILLWKRL | Skilled Worker | 1.00 | HR | 23.76 | 1.00 | 23.76 | | | 23.76 |
| USR | B-SKILLWKRF | Skilled Worker | 1.00 | HR | 24.26 | 1.00 | 24.26 | | | 24.26 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | B-TRKDVRLTL | Truck Drivers, Light | 1.00 | HR | 26.93 | 1.00 | 26.93 | | | 26.93 |
| | TOTAL | | | | | 10.00 | 240.06 | 5.00 | 48.97 | 289.03 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-EQOPRCRN | Eq Oper, Crane/Shovl | 27.82 | 0.0% | 0.0% | 0.00 | 0.00 | 27.82 | HR | 10/22/92 | 21.20 | 2563 |
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 2675 |
| MIL | B-EQOPROIL | Eq Oper, Oilers | 24.54 | 0.0% | 0.0% | 0.00 | 0.00 | 24.54 | HR | 10/22/92 | 11.00 | 1276 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 12890 |
| MIL | B-SKILLWKR | Skilled Worker | 23.76 | 0.0% | 0.0% | 0.00 | 0.00 | 23.76 | HR | 10/22/92 | 13.34 | 3062 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 15316 |
| MIL | B-TRKDVRLT | Truck Drivers, Light | 26.93 | 0.0% | 0.0% | 0.00 | 0.00 | 26.93 | HR | 10/22/92 | 9.26 | 1336 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | TOTAL HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | C10WC003 | RAMMER,VIB,MAN, 13" X 11" SHOE | 0.56 | 0.09 | 0.45 | 0.1 | 0.93 | | | 2.14 | HR | 52 |
| MIL | C75GV007 | CRANE,HYD,SELF,ROUGH TER,4WD,22T | 9.81 | 3.67 | 4.31 | 1.2 | 10.53 | 0.85 | 0.13 | 30.57 | HR | 1336 |
| MIL | G15CA005 | GRADER,MOTOR,CAT14-G, ARTIC | 13.24 | 5.29 | 5.41 | 1.8 | 13.62 | 1.47 | 0.22 | 41.08 | HR | 1276 |
| MIL | L40FI008 | LDR,FE,WH,7.00CY 4WD ARTIC PWSHF | 20.27 | 6.84 | 10.33 | 3.1 | 18.29 | 7.98 | 1.20 | 68.00 | HR | 967 |
| MIL | L50CS002 | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 3.42 | 1.16 | 1.86 | 0.6 | 4.04 | 0.53 | 0.08 | 11.69 | HR | 62 |
| MIL | R40HY004 | ROLL,VIB,TOWED,STL,PAD,58"D,60"W | 3.76 | 0.90 | 1.48 | 0.4 | 4.02 | | | 10.62 | HR | 1276 |
| MIL | T10CA017 | BLADE, UNIVERSAL,HYDR,FOR D8 | 2.97 | 0.87 | | 0.1 | 3.23 | | | 7.20 | HR | 1276 |
| MIL | T15CA015 | DOZER,CWLR,CAT D-8L, (ADD BLADE) | 22.47 | 6.58 | 10.71 | 3.0 | 30.53 | | | 73.29 | HR | 1276 |
| MIL | T40XX012 | TRUCK OPT,FLATBED, 8' x 9.0' | 0.24 | 0.06 | | | 0.20 | | | 0.49 | HR | 1336 |
| MIL | T40XX033 | WATER TANK, 3000 GAL (ADD TRUCK) | 1.52 | 0.37 | | | 1.26 | | | 3.15 | HR | 1276 |
| MIL | T45XX003 | TRK TRLR,BOTTOM DUMP, 30CY,30T | 2.85 | 0.82 | | 0.0 | 2.61 | 0.64 | 0.10 | 7.11 | HR | 12764 |
| MIL | T50FO006 | TRK, HWY,F600,21,000 GVW, 2 AXLE | 2.32 | 0.65 | 7.20 | 2.1 | 2.20 | 0.51 | 0.08 | 15.12 | HR | 1336 |
| MIL | T50FO015 | TRK, HWY, 54,000 GVW, 3 AXLE | 6.23 | 1.58 | 8.74 | 2.4 | 5.48 | 1.31 | 0.20 | 25.97 | HR | 1276 |
| MIL | T50KE003 | TRK, HWY, 3AXLE, 46,000 GVW | 9.16 | 2.21 | 9.83 | 2.7 | 7.97 | 0.39 | 0.06 | 32.37 | HR | 12764 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 5333 |

THIS PAGE INTENTIONALLY
LEFT BLANK

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/01/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 1 |
| Level 6 ID : | 4 | - | Task | 2 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 12

| | | | | | |
|---|---|---|---|---|---|
| Col Type | P | X | X | X | X |
| Rep Width | 25 | 0 | 0 | 0 | 0 |
| Title | PROJECT | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | R | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 4
Table of Contents Levels : 5

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |
| | Print Unit Cost Row : | Y | | | | | | | |
| | Print Page Footer : | N | | | | | | | |
| | Show Cost Codes : | Y | | | | | | | |
| COLUMNS OPTIONS | Print Crew Id : | Y | | | | | | | |
| | Crew Output : | Y | | | | | | | |
| | Unit Cost : | Y | | | | | | | |
| UPB TITLES | No. of Levels to Print : | 0 | | | | | | | |
| | Bracket Titles With : | - : | | | | | | | |
| | Include titles Notes : | Y | | | | | | | |

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y
Link Listing : N

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) |
|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 1 2 3 4 5 6 |
| Detail : | Y | | | |
| Project : | N | Y | Y | N N N N Y Y |
| Contractor : | N | N | | N N N N N N N |
| Division : | N | N | N | Y N N N N N N |
| System : | N | N | N | Y N N N N N N |
| 2nd View : | N | | | |
| Crew : | Y | | | Y N N N N N N |
| Labor : | Y | | | |
| Equipment : | Y | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| Project Information Record | | | | | | | |
| 06 REMEDIAL ACTIONS | | | | | | | |
| | S & A | P | 15.00 | | | | |
| | CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT AND FACILITIES | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | O | | | | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | O | | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING (& MISC) | | | | | | | |
| 06 03 05 1 FENCING | | | | | | | |
| 06 03 05 1 01 6' Security Perimeter Fencing | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 03 05 2 | MISCELLANEOUS IMPROVEMENTS | | | | | | |
| 06 03 05 2 01 | Warning Signs | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 15.00 | | | | |
| 06 03 05 3 | LANDSCAPING & TURFING | | | | | | |
| 06 03 05 3 01 | Dryland Grass | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 08 | SOLID WASTE COLLECTION/CONTAINMT | | | | | | |
| 06 08 05 | CAPPING CONTAMINATED AREAS | | | | | | |
| 06 08 05 1 | CAP CONSTRUCTION | | | | | | |
| 06 08 05 1 01 | WAC Cap | | | | | | |
| 06 08 05 1 01 01 | Random Fill - 1st 6" | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 35.00 | | | | |
| 06 08 05 1 01 02 | Random Fill - Next 3.25' | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 30.00 | | | | |
| 06 08 05 1 01 03 | 6" Fine Grain Membrane Bedding | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 30.00 | | | | |
| 06 08 05 1 01 04 | 50-mil Geomembrane | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 08 05 1 01 05 | Top Soil - 6" | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 35.00 | | | | |
| 06 08 05 1 01 06 | Class D - PPEquip | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 08 05 2 | LEACHATE COLLECTION | | | | | | |
| 06 08 05 2 01 | Leachate Collection System | | | | | | |
| 06 08 05 2 01 01 | 4" Perforated Drain Pipe | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 08 05 2 01 02 4" Collection Pipe | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 08 05 2 01 03 Drywells - 48" D, perf manholes | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DEMOBILIZATION | | | | | | | |
| 06 21 04 01 01 01 DEMOBILIZATION | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

DOE/RL-92-67

# HORN RAPIDS LANDFILL
# ASBESTOS CAP

9 3 1 2 3 2 1 4 5 8

THIS PAGE INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
HORN RAPIDS LANDFILL
ASBESTOS CAP

Designed By: CENPW ENVIRONMENTAL BRANCH
Estimated By: COST ENGR BRANCH

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/23/92
Est Construction Time: 65 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.2 1100-EM-1 Baselines

This is the structure for the 1100-EM-1 Area remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

"23" is the subproject (ie. 1100-EM)

"01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of Contractor overhead percentages.

This estimate covers the Horn Rapids Landfill - Asbestos cap, which is one alternative being looked at by NPW's Enivornmental Engineering Branch (EE). This Asbestos cap (AsbCap) will cover about a 25 Acre landfill site, that contains various hazardous wastes. The AsbCap will consist of 18-inches of random fill, covered by 6-inches of top soil with Dryland grass seeding. A 6,000 LF perimeter fence will enclose the area.

1. Normal Contingency for this level of estimate is 20-30%.

2. Using 50% Contingency for Setup, as it is undefined.

3. Using higher Contingency for the random fill and top soil as quantities may change, and location and costs of fill and top soil have been assumed.

THIS PAGE INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 5.....1
PROJECT OWNER SUMMARY - LEVEL 6.....4
PROJECT INDIRECT SUMMARY - LEVEL 5.....8
PROJECT INDIRECT SUMMARY - LEVEL 6.....11
CONTRACTOR INDIRECT SUMMARY.....15

DETAILED ESTIMATE DETAIL PAGE

06. REMEDIAL ACTIONS
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT AND FACILITIES
1. TRANSPORTATION
01-. Equipment Mob, Detailed List.....1
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
02-. Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....5
03. SITE WORK
05. FENCING (& MISC)
1. FENCING
03-. 6' Security Perimeter Fencing.....6
2. MISCELLANEOUS IMPROVEMENTS
04-. Warning Signs.....7
3. LANDSCAPING & TURFING
05-. Dryland Grass.....8
08. SOLID WASTE COLLECTION/CONTAINMT
05. CAPPING CONTAMINATED AREAS
1. CAP CONSTRUCTION
06-. Asbestos Cap.....9
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & FACILITIES
01. TRANSPORTATION
07-. DEMOBILIZATION.....12

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1

LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTIONS | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT AND FACILITIES | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01- Equipment Mob, Detailed List | | 7,910 | 1,190 | 1,820 | 10,910 | | 1 |
| TRANSPORTATION | | 7,910 | 1,190 | 1,820 | 10,910 | | |
| MOB OF EQUIPMENT AND FACILITIES | | 7,910 | 1,190 | 1,820 | 10,910 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 02- Office Trailers - setup | | 3,780 | 570 | 2,170 | 6,520 | | 2 |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,170 | 6,520 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | 3,030 | 450 | 0 | 3,480 | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | 1,530 | 230 | 0 | 1,750 | | |
| DECONTAMINATION FACILITIES | | 4,550 | 680 | 0 | 5,230 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 8,330 | 1,250 | 2,170 | 11,760 | | |
| MOBILIZATION & PREPARATORY WORK | | 16,240 | 2,440 | 3,990 | 22,670 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | 62,100 | 9,310 | 14,280 | 85,690 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | | 62,100 | 9,310 | 14,280 | 85,690 | | |
| QA/Safety Monitoring | | 62,100 | 9,310 | 14,280 | 85,690 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 62,100 | 9,310 | 14,280 | 85,690 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING (& MISC) | | | | | | | |
| 06 03 05 1 FENCING | | | | | | | |
| 06 03 05 1 03- 6' Security Perimeter Fencing | 6000.00 LF | 159,220 | 23,880 | 36,620 | 219,730 | 36.62 | 1 |
| FENCING | 6000.00 LF | 159,220 | 23,880 | 36,620 | 219,730 | 36.62 | |
| 06 03 05 2 MISCELLANEOUS IMPROVEMENTS | | | | | | | |
| 06 03 05 2 04- Warning Signs | | 450 | 70 | 80 | 590 | | |
| MISCELLANEOUS IMPROVEMENTS | | 450 | 70 | 80 | 590 | | |
| 06 03 05 3 LANDSCAPING & TURFING | | | | | | | |
| 06 03 05 3 05- Dryland Grass | 25.00 ACR | 33,170 | 4,980 | 7,630 | 45,780 | 1831.05 | 1 |
| LANDSCAPING & TURFING | 25.00 ACR | 33,170 | 4,980 | 7,630 | 45,780 | 1831.05 | |
| FENCING (& MISC) | | 192,840 | 28,930 | 44,330 | 266,090 | | |
| SITE WORK | | 192,840 | 28,930 | 44,330 | 266,090 | | |
| 06 08 SOLID WASTE COLLECTION/CONTAINMT | | | | | | | |
| 06 08 05 CAPPING CONTAMINATED AREAS | | | | | | | |
| 06 08 05 1 CAP CONSTRUCTION | | | | | | | |
| 06 08 05 1 06- Asbestos Cap | 121000.00 SY | 1,055,280 | 158,290 | 423,840 | 1,637,410 | 13.53 | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| CAP CONSTRUCTION | | 1,055,280 | 158,290 | 423,840 | 1,637,410 | | |
| CAPPING CONTAMINATED AREAS | | 1,055,280 | 158,290 | 423,840 | 1,637,410 | | |
| SOLID WASTE COLLECTION/CONTAINMT | | 1,055,280 | 158,290 | 423,840 | 1,637,410 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 07- DEMOBILIZATION | | 9,450 | 1,420 | 2,170 | 13,050 | | |
| TRANSPORTATION | | 9,450 | 1,420 | 2,170 | 13,050 | | |
| DEMOB OF EQUIPMENT & FACILITIES | | 9,450 | 1,420 | 2,170 | 13,050 | | |
| DEMOBILIZATION | | 9,450 | 1,420 | 2,170 | 13,050 | | |
| REMEDIAL ACTIONS | | 1,335,910 | 200,390 | 488,620 | 2,024,910 | | |
| HANFORD: REMEDIATION | | 1,335,910 | 200,390 | 488,620 | 2,024,910 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTIONS | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT AND FACILITIES | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01- Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 7,910 | 1,190 | 1,820 | 10,910 | | 1 |
| TRANSPORTATION | | 7,910 | 1,190 | 1,820 | 10,910 | | |
| MOB OF EQUIPMENT AND FACILITIES | | 7,910 | 1,190 | 1,820 | 10,910 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 02- Office Trailers - setup | | | | | | | |
| 06 01 04 01 02- 01 Assembly and Setup | 100.00 HR | 3,780 | 570 | 2,170 | 6,520 | 65.23 | 2 |
| Office Trailers - setup | | 3,780 | 570 | 2,170 | 6,520 | | 2 |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,170 | 6,520 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 3,030 | 450 | 0 | 3,480 | 43.49 | |
| Personnel Decon Facilities | | 3,030 | 450 | 0 | 3,480 | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | 40.00 HR | 1,530 | 230 | 0 | 1,750 | 43.87 | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,530 | 230 | 0 | 1,750 | | |
| DECONTAMINATION FACILITIES | | 4,550 | 680 | 0 | 5,230 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 8,330 | 1,250 | 2,170 | 11,760 | | |
| MOBILIZATION & PREPARATORY WORK | | 16,240 | 2,440 | 3,990 | 22,670 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 9.00 WK | 62,100 | 9,310 | 14,280 | 85,690 | 9521.45 | 1 |
| QA/Safety Monitoring | | 62,100 | 9,310 | 14,280 | 85,690 | | |
| QA/Safety Monitoring | | 62,100 | 9,310 | 14,280 | 85,690 | | |
| QA/Safety Monitoring | | 62,100 | 9,310 | 14,280 | 85,690 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 62,100 | 9,310 | 14,280 | 85,690 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING (& MISC) | | | | | | | |
| 06 03 05 1 FENCING | | | | | | | |
| 06 03 05 1 03- 6' Security Perimeter Fencing | | | | | | | |
| 6' Security Perimeter Fencing | 6000.00 LF | 159,220 | 23,880 | 36,620 | 219,730 | 36.62 | 1 |
| FENCING | 6000.00 LF | 159,220 | 23,880 | 36,620 | 219,730 | 36.62 | |
| 06 03 05 2 MISCELLANEOUS IMPROVEMENTS | | | | | | | |

9 3 1 2 3 5 2 1 4 7 9



| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 03 05 2 04- Warning Signs | | | | | | | |
| Warning Signs | | 450 | 70 | 80 | 590 | | |
| MISCELLANEOUS IMPROVEMENTS | | 450 | 70 | 80 | 590 | | |
| 06 03 05 3 LANDSCAPING & TURFING | | | | | | | |
| 06 03 05 3 05- Dryland Grass | | | | | | | |
| Dryland Grass | 25.00 ACR | 33,170 | 4,980 | 7,630 | 45,780 | 1831.05 | 1 |
| LANDSCAPING & TURFING | 25.00 ACR | 33,170 | 4,980 | 7,630 | 45,780 | 1831.05 | |
| FENCING (& MISC) | | 192,840 | 28,930 | 44,330 | 266,090 | | |
| SITE WORK | | 192,840 | 28,930 | 44,330 | 266,090 | | |
| 06 08 SOLID WASTE COLLECTION/CONTAINMT | | | | | | | |
| 06 08 05 CAPPING CONTAMINATED AREAS | | | | | | | |
| 06 08 05 1 CAP CONSTRUCTION | | | | | | | |
| 06 08 05 1 06- Asbestos Cap | | | | | | | |
| 06 08 05 1 06- 1 Random Fill - 1st 6" | 15000.00 CY | 191,400 | 28,710 | 77,040 | 297,150 | 19.81 | 3 |
| 06 08 05 1 06- 2 Random Fill - Next 12" | 33500.00 CY | 427,460 | 64,120 | 172,050 | 663,630 | 19.81 | 3 |
| 06 08 05 1 06- 3 Top Soil - 6" | 18000.00 CY | 428,510 | 64,280 | 172,470 | 665,260 | 36.96 | 3 |
| 06 08 05 1 06- 4 PPEquip, Modified Class D | 10.00 DAY | 7,910 | 1,190 | 2,270 | 11,370 | 1136.70 | 1 |
| Asbestos Cap | 121000.00 SY | 1,055,280 | 158,290 | 423,840 | 1,637,410 | 13.53 | |
| CAP CONSTRUCTION | | 1,055,280 | 158,290 | 423,840 | 1,637,410 | | |
| CAPPING CONTAMINATED AREAS | | 1,055,280 | 158,290 | 423,840 | 1,637,410 | | |
| SOLID WASTE COLLECTION/CONTAINMT | | 1,055,280 | 158,290 | 423,840 | 1,637,410 | | |
| 06 21 DEMOBILIZATION | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 07- DEMOBILIZATION | | | | | | | |
| 06 21 04 01 07- 01 DEMOBILIZATION | | 9,450 | 1,420 | 2,170 | 13,050 | | 1 |
| DEMOBILIZATION | | 9,450 | 1,420 | 2,170 | 13,050 | | |
| TRANSPORTATION | | 9,450 | 1,420 | 2,170 | 13,050 | | |
| DEMOB OF EQUIPMENT & FACILITIES | | 9,450 | 1,420 | 2,170 | 13,050 | | |
| DEMOBILIZATION | | 9,450 | 1,420 | 2,170 | 13,050 | | |
| REMEDIAL ACTIONS | | 1,335,910 | 200,390 | 488,620 | 2,024,910 | | |
| HANFORD: REMEDIATION | | 1,335,910 | 200,390 | 488,620 | 2,024,910 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTIONS | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT AND FACILITIES | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01- Equipment Mob, Detailed List | | 5,960 | 890 | 340 | 580 | 60 | 80 | 7,910 | |
| TRANSPORTATION | | 5,960 | 890 | 340 | 580 | 60 | 80 | 7,910 | |
| MOB OF EQUIPMENT AND FACILITIES | | 5,960 | 890 | 340 | 580 | 60 | 80 | 7,910 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 02- Office Trailers - setup | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | |
| DECONTAMINATION FACILITIES | | 3,430 | 510 | 200 | 330 | 30 | 50 | 4,550 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,280 | 940 | 360 | 610 | 60 | 80 | 8,330 | |
| MOBILIZATION & PREPARATORY WORK | | 12,240 | 1,840 | 700 | 1,180 | 120 | 160 | 16,240 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | 46,800 | 7,020 | 2,690 | 4,520 | 450 | 610 | 62,100 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | | 46,800 | 7,020 | 2,690 | 4,520 | 450 | 610 | 62,100 | |
| QA/Safety Monitoring | | 46,800 | 7,020 | 2,690 | 4,520 | 450 | 610 | 62,100 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 46,800 | 7,020 | 2,690 | 4,520 | 450 | 610 | 62,100 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING (& MISC) | | | | | | | | | |
| 06 03 05 1 FENCING | | | | | | | | | |
| 06 03 05 1 03- 6' Security Perimeter Fencing | 6000.00 LF | 120,000 | 18,000 | 6,900 | 11,590 | 1,150 | 1,580 | 159,220 | 26.54 |
| FENCING | 6000.00 LF | 120,000 | 18,000 | 6,900 | 11,590 | 1,150 | 1,580 | 159,220 | 26.54 |
| 06 03 05 2 MISCELLANEOUS IMPROVEMENTS | | | | | | | | | |
| 06 03 05 2 04- Warning Signs | | 340 | 50 | 20 | 30 | 0 | 0 | 450 | |
| MISCELLANEOUS IMPROVEMENTS | | 340 | 50 | 20 | 30 | 0 | 0 | 450 | |
| 06 03 05 3 LANDSCAPING & TURFING | | | | | | | | | |
| 06 03 05 3 05- Dryland Grass | 25.00 ACR | 25,000 | 3,750 | 1,440 | 2,420 | 240 | 330 | 33,170 | 1326.85 |
| LANDSCAPING & TURFING | 25.00 ACR | 25,000 | 3,750 | 1,440 | 2,420 | 240 | 330 | 33,170 | 1326.85 |
| FENCING (& MISC) | | 145,340 | 21,800 | 8,360 | 14,040 | 1,400 | 1,910 | 192,840 | |
| SITE WORK | | 145,340 | 21,800 | 8,360 | 14,040 | 1,400 | 1,910 | 192,840 | |
| 06 08 SOLID WASTE COLLECTION/CONTAINMT | | | | | | | | | |
| 06 08 05 CAPPING CONTAMINATED AREAS | | | | | | | | | |
| 06 08 05 1 CAP CONSTRUCTION | | | | | | | | | |
| 06 08 05 1 06- Asbestos Cap | 121000.00 SY | 795,330 | 119,300 | 45,730 | 76,830 | 7,640 | 10,450 | 1,055,280 | 8.72 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| CAP CONSTRUCTION | | 795,330 | 119,300 | 45,730 | 76,830 | 7,640 | 10,450 | 1,055,280 | |
| CAPPING CONTAMINATED AREAS | | 795,330 | 119,300 | 45,730 | 76,830 | 7,640 | 10,450 | 1,055,280 | |
| SOLID WASTE COLLECTION/CONTAINMT | | 795,330 | 119,300 | 45,730 | 76,830 | 7,640 | 10,450 | 1,055,280 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 07- DEMOBILIZATION | | 7,130 | 1,070 | 410 | 690 | 70 | 90 | 9,450 | |
| TRANSPORTATION | | 7,130 | 1,070 | 410 | 690 | 70 | 90 | 9,450 | |
| DEMOB OF EQUIPMENT & FACILITIES | | 7,130 | 1,070 | 410 | 690 | 70 | 90 | 9,450 | |
| DEMOBILIZATION | | 7,130 | 1,070 | 410 | 690 | 70 | 90 | 9,450 | |
| REMEDIAL ACTIONS | | 1,006,830 | 151,020 | 57,890 | 97,260 | 9,670 | 13,230 | 1,335,910 | |
| HANFORD: REMEDIATION | | 1,006,830 | 151,020 | 57,890 | 97,260 | 9,670 | 13,230 | 1,335,910 | |
| S & A | | | | | | | | 200,390 | |
| SUBTOTAL | | | | | | | | 1,536,290 | |
| CONTINGENCY | | | | | | | | 488,620 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 2,024,910 | |

| | QUANTITY | UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTIONS | | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT AND FACILITIES | | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | | |
| 06 01 01 1 01- Equipment Mob, Detailed List | | | | | | | | | | |
| Equipment Mob, Detailed List | | | 5,960 | 890 | 340 | 580 | 60 | 80 | 7,910 | |
| TRANSPORTATION | | | 5,960 | 890 | 340 | 580 | 60 | 80 | 7,910 | |
| MOB OF EQUIPMENT AND FACILITIES | | | 5,960 | 890 | 340 | 580 | 60 | 80 | 7,910 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | | |
| 06 01 04 01 02- Office Trailers - setup | | | | | | | | | | |
| 06 01 04 01 02- 01 Assembly and Setup | 100.00 | HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | 37.82 |
| Office Trailers - setup | | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 | HR | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | 37.82 |
| Personnel Decon Facilities | | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | 40.00 | HR | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | 38.15 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | |
| DECONTAMINATION FACILITIES | | 3,430 | 510 | 200 | 330 | 30 | 50 | 4,550 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,280 | 940 | 360 | 610 | 60 | 80 | 8,330 | |
| MOBILIZATION & PREPARATORY WORK | | 12,240 | 1,840 | 700 | 1,180 | 120 | 160 | 16,240 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 9.00 WK | 46,800 | 7,020 | 2,690 | 4,520 | 450 | 610 | 62,100 | 6899.60 |
| QA/Safety Monitoring | | 46,800 | 7,020 | 2,690 | 4,520 | 450 | 610 | 62,100 | |
| QA/Safety Monitoring | | 46,800 | 7,020 | 2,690 | 4,520 | 450 | 610 | 62,100 | |
| QA/Safety Monitoring | | 46,800 | 7,020 | 2,690 | 4,520 | 450 | 610 | 62,100 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 46,800 | 7,020 | 2,690 | 4,520 | 450 | 610 | 62,100 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING (& MISC) | | | | | | | | | |
| 06 03 05 1 FENCING | | | | | | | | | |
| 06 03 05 1 03- 6' Security Perimeter Fencing | | | | | | | | | |
| 6' Security Perimeter Fencing | 6000.00 LF | 120,000 | 18,000 | 6,900 | 11,590 | 1,150 | 1,580 | 159,220 | 26.54 |
| FENCING | 6000.00 LF | 120,000 | 18,000 | 6,900 | 11,590 | 1,150 | 1,580 | 159,220 | 26.54 |
| 06 03 05 2 MISCELLANEOUS IMPROVEMENTS | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 03 05 2 04- Warning Signs | | | | | | | | | |
| Warning Signs | | 340 | 50 | 20 | 30 | 0 | 0 | 450 | |
| MISCELLANEOUS IMPROVEMENTS | | 340 | 50 | 20 | 30 | 0 | 0 | 450 | |
| 06 03 05 3 LANDSCAPING & TURFING | | | | | | | | | |
| 06 03 05 3 05- Dryland Grass | | | | | | | | | |
| Dryland Grass | 25.00 ACR | 25,000 | 3,750 | 1,440 | 2,420 | 240 | 330 | 33,170 | 1326.85 |
| LANDSCAPING & TURFING | 25.00 ACR | 25,000 | 3,750 | 1,440 | 2,420 | 240 | 330 | 33,170 | 1326.85 |
| FENCING (& MISC) | | 145,340 | 21,800 | 8,360 | 14,040 | 1,400 | 1,910 | 192,840 | |
| SITE WORK | | 145,340 | 21,800 | 8,360 | 14,040 | 1,400 | 1,910 | 192,840 | |
| 06 08 SOLID WASTE COLLECTION/CONTAINMT | | | | | | | | | |
| 06 08 05 CAPPING CONTAMINATED AREAS | | | | | | | | | |
| 06 08 05 1 CAP CONSTRUCTION | | | | | | | | | |
| 06 08 05 1 06- Asbestos Cap | | | | | | | | | |
| 06 08 05 1 06- 1 Random Fill - 1st 6" | 15000.00 CY | 144,250 | 21,640 | 8,290 | 13,930 | 1,390 | 1,900 | 191,400 | 12.76 |
| 06 08 05 1 06- 2 Random Fill - Next 12" | 33500.00 CY | 322,160 | 48,320 | 18,520 | 31,120 | 3,100 | 4,230 | 427,460 | 12.76 |
| 06 08 05 1 06- 3 Top Soil - 6" | 18000.00 CY | 322,950 | 48,440 | 18,570 | 31,200 | 3,100 | 4,240 | 428,510 | 23.81 |
| 06 08 05 1 06- 4 PPEquip, Modified Class D | 10.00 DAY | 5,960 | 890 | 340 | 580 | 60 | 80 | 7,910 | 790.75 |
| Asbestos Cap | 121000.00 SY | 795,330 | 119,300 | 45,730 | 76,830 | 7,640 | 10,450 | 1,055,280 | 8.72 |
| CAP CONSTRUCTION | | 795,330 | 119,300 | 45,730 | 76,830 | 7,640 | 10,450 | 1,055,280 | |
| CAPPING CONTAMINATED AREAS | | 795,330 | 119,300 | 45,730 | 76,830 | 7,640 | 10,450 | 1,055,280 | |
| SOLID WASTE COLLECTION/CONTAINMT | | 795,330 | 119,300 | 45,730 | 76,830 | 7,640 | 10,450 | 1,055,280 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 07- DEMOBILIZATION | | | | | | | | | |
| 06 21 04 01 07- 01 DEMOBILIZATION | | 7,130 | 1,070 | 410 | 690 | 70 | 90 | 9,450 | |
| DEMOBILIZATION | | 7,130 | 1,070 | 410 | 690 | 70 | 90 | 9,450 | |
| TRANSPORTATION | | 7,130 | 1,070 | 410 | 690 | 70 | 90 | 9,450 | |
| DEMOB OF EQUIPMENT & FACILITIES | | 7,130 | 1,070 | 410 | 690 | 70 | 90 | 9,450 | |
| DEMOBILIZATION | | 7,130 | 1,070 | 410 | 690 | 70 | 90 | 9,450 | |
| REMEDIAL ACTIONS | | 1,006,830 | 151,020 | 57,890 | 97,260 | 9,670 | 13,230 | 1,335,910 | |
| HANFORD: REMEDIATION | | 1,006,830 | 151,020 | 57,890 | 97,260 | 9,670 | 13,230 | 1,335,910 | |
| S & A | | | | | | | | 200,390 | |
| SUBTOTAL | | | | | | | | 1,536,290 | |
| CONTINGENCY | | | | | | | | 488,620 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 2,024,910 | |

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT 11HASB: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, HORN RAPIDS LANDFILL, ASBESTOS CAP
** CONTRACTOR INDIRECT SUMMARY (Rounded to 10's) **



| | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | 1,006,830 | 151,020 | 57,890 | 97,260 | 9,670 | 13,230 | 1,335,910 | |

THIS PAGE INTENTIONALLY
LEFT BLANK

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field Office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home Office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

.

.

06. REMEDIAL ACTIONS
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT AND FACILITIES
06 01 01 1. TRANSPORTATION

06 01 01 1 01-. Equipment Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi Radius mob is assumed.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 1102 > | Mob, Crane, Hyd, SP, 16-25 Ton, Rough Terrain, 4WD, 100-mi Rad | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 500.00 |
| USR AA <01505 3237 > | Mob, FEnd Ldr, Wheel, 6.0-8 CY, Articulated Fr, 100-mi rad | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 1300.00<br>1,300 | 0.00<br>0 | 0.00<br>0 | 1300.00<br>1,300 | 1300.00 |
| USR AA <01505 4201 > | Mob, Roller, Towed, 50-75 Ton, Pneumatic, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 550.00 |
| USR AA <01505 5203 > | Mob, Motor Grader, 150-200 HP, Art. Fr, Pwr Shift, 100-mi Rad | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 525.00 |
| USR AA <01505 6116 > | Mob, Dozer, Crawler, 225-350 HP w/blade, Incl Setup, 100-mi Rad | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 925.00<br>925 | 0.00<br>0 | 0.00<br>0 | 925.00<br>925 | 925.00 |
| USR AA <01505 7111 > | Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 7123 > Mob, Bottom Dump trailer, 30 Ton | | | | | 0.00 | 0.00 | 125.00 | 0.00 | 0.00 | 125.00 | |
| w/CLT8000 Trk, 100-mi Radius | 12.00 | EA | | 0.00 | 0 | 0 | 1,500 | 0 | 0 | 1,500 | 125.00 |
| USR AA <01505 7131 > Mob, Water Tank, 3,000 Gal, | | | | | 0.00 | 0.00 | 150.00 | 0.00 | 0.00 | 150.00 | |
| Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | | 0.00 | 0 | 0 | 150 | 0 | 0 | 150 | 150.00 |
| USR AA <01505 8921 > Mob, Decontamination Trailer, | | | | | 0.00 | 0.00 | 135.00 | 0.00 | 0.00 | 135.00 | |
| w/25,000 GVW Trk, 100-mi Radius | 1.00 | EA | | 0.00 | 0 | 0 | 135 | 0 | 0 | 135 | 135.00 |
| M CIV AA <01500 1101 > Mob - Field Office Trailer | | | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 | EA | N/A | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| Equipment Mob, Detailed List | | | | | 0 | 0 | 5,960 | 0 | 0 | 5,960 | |
| TRANSPORTATION | | | | | 0 | 0 | 5,960 | 0 | 0 | 5,960 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | | | |
| 06 01 04 01 02-. Office Trailers - setup | | | | | | | | | | | |
| 06 01 04 01 02- 01. Assembly and Setup<br>Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Assembly and Setup | 100.00 | HR | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Office Trailers - setup | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | | | |
| 06 01 04 02 01. Personnel Decon Facilities | | | | | | | | | | | |
| 06 01 04 02 01 01. Personnel Decon Facilities<br>Allow 80 mhrs for setup of Decontamination trailer. Self contained unit includes changing rooms and showers. An allowancy for some equipment and materials has been added. | | | | | | | | | | | |
| Personnel Decon Facilities | 80.00 | HR | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Personnel Decon Facilities | | | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| 06 01 04 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | | | |
| 06 01 04 02 02 01. Equip/Vehicle Decon Facilities<br>Allow 40 mhrs for setup of equipment decon facilities. | | | | | | | | | | | |
| Equip/Vehicle Decon Facilities | 40.00 | HR | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | 28.75 |
| Equip/Vehicle Decon Facilities | | | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| DECONTAMINATION FACILITIES | | | | | 0 | 3,000 | 300 | 130 | 0 | 3,430 | |

06 02. MONITOR, SAMPLE, TEST, ANALYSIS

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 91. QA/Safety Monitoring
06 02 91 01. QA/Safety Monitoring

06 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

06 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

| | | |
|---|---|---|
| WHC HPT: 40 Hrs @ $50/Hr | = | $2,000 |
| COE Safety Rep: 40 Hrs @ $70/Hr | = | 2,800 |
| COE S.A. for QA: 8 Hrs @ $50/Hr | | 400 |
| | | $5,200/wk |

Estimated duration of job is 9 weeks, with 1 week for Mob, Setup, & Demob.

| | QUANTY UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | 9.00 WK | | | 0 | 46,800 | 0 | 0 | 0 | 46,800 | 5200.00 |
| QA/Safety Monitoring | | | | 0 | 46,800 | 0 | 0 | 0 | 46,800 | |
| QA/Safety Monitoring | | | | 0 | 46,800 | 0 | 0 | 0 | 46,800 | |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03. SITE WORK | | | | | | | | | | | |
| 06 03 05. FENCING (& MISC) | | | | | | | | | | | |
| 06 03 05 1. FENCING | | | | | | | | | | | |
| 06 03 05 1 03-. 6' Security Perimeter Fencing | | | | | | | | | | | |
| A 6' Security perimeter fence is needed around the site, including a 20' gate. A unit cost of $20/LF will be used for the fence based on recent bid opening prices. Assume following breakdown: $5.00 labor, $2.50 equip, and $12.50 Material. | | | | | | | | | | | |
| 6' Security Perimeter Fencing | 6000.00 | LF | | | 780 | 30,000 | 15,000 | 75,000 | 0 | 120,000 | 20.00 |
| FENCING | 6000.00 | LF | | | 780 | 30,000 | 15,000 | 75,000 | 0 | 120,000 | 20.00 |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03 05 2. MISCELLANEOUS IMPROVEMENTS | | | | | | | | | | | |
| 06 03 05 2 04-. Warning Signs | | | | | | | | | | | |
| USR AA <01951 7911 > 10"x 14" Warning signs | | | | | 0.00 | 1.75 | 0.00 | 15.09 | 0.00 | 16.84 | |
| Alum/Acrylic, attached to fence | 20.00 | EA | N/A | 0.00 | 0 | 35 | 0 | 302 | 0 | 337 | 16.84 |
| Warning Signs | | | | | 0 | 35 | 0 | 302 | 0 | 337 | |
| MISCELLANEOUS IMPROVEMENTS | | | | | 0 | 35 | 0 | 302 | 0 | 337 | |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03 05 3. LANDSCAPING & TURFING | | | | | | | | | | | |
| 06 03 05 3 05-. Dryland Grass<br>Topsoil to be seeded with dryland grass, 25 Acres. Price used based on recent bid prices for dryland grass per acre.<br>. | | | | | | | | | | | |
| Dryland Grass | 25.00 | ACR | | | 0 | 17,500 | 6,250 | 1,250 | 0 | 25,000 | 1000.00 |
| LANDSCAPING & TURFING | 25.00 | ACR | | | 0 | 17,500 | 6,250 | 1,250 | 0 | 25,000 | 1000.00 |

| 06 08. SOLID WASTE COLLECTION/CONTAINMT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

06 08. SOLID WASTE COLLECTION/CONTAINMT
06 08 05. CAPPING CONTAMINATED AREAS
06 08 05 1. CAP CONSTRUCTION

06 08 05 1 06-. Asbestos Cap
Asbestos Cap to cover about 25 Acres, or 121,000 SY. Cap is made from 18" of random fill covered by 6" of top soil. Special precautions must be taken for the first 6" layer, until the asbestos materials are covered.
.

06 08 05 1 06- 1. Random Fill - 1st 6"
This item covers the first 6" of random fill. Fill material must be spread from the perimeter in, so as not create fugitive asbestos containing dust. Class C worker protection will be required until this 6" layer is in-place. Random fill assumed available within 10-mi radius, will use a ten truck crew of 30-CY dumps.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <02212 1001 > | 6" random fill, spread to center | | | 0.02 | 0.49 | 0.59 | 0.00 | 0.00 | 1.09 | |
| | to avoid asbestos disturbance. Q: 15,000 CY, use 1.2 swell factor == 18,000 CY. | 18000 CY ZHANC01 | 275.00 | 344 | 8,908 | 10,649 | 0 | 0 | 19,557 | 1.09 |
| USR AA <02225 3109 > | 10, 30-CY Trucks, 10-mi Haul | | | 0.05 | 1.26 | 1.51 | 3.77 | 0.00 | 6.54 | |
| | one-way. Assume: 20 mph ave haul, 90% fill factor, which yields = 275 LCY/HR. Assume random fill available for $3.50/CY (crew has 2 extra dump trucks on standby to allow for breakdowns & maintenance). | 18000 CY ZHANC02 | 275.00 | 851 | 22,642 | 27,110 | 67,914 | 0 | 117,666 | 6.54 |
| L CIV AA <02225 2372 > | Excav & Load, 7-CY Whl Mtd Ldr, | | | 0.01 | 0.14 | 0.25 | 0.00 | 0.00 | 0.39 | |
| | Med Matl, 355 CY/Hr (275 CY/Hr based on haul production rate). | 18000 CY CODLL | 275.00 | 99 | 2,578 | 4,451 | 0 | 0 | 7,029 | 0.39 |
| | Random Fill - 1st 6" | 15000 CY | | 1,294 | 34,128 | 42,210 | 67,914 | 0 | 144,252 | 9.62 |

06 08 05 1 06- 2. Random Fill - Next 12"
This item covers placement of the next 12" of random fill material. Material can be spread as best suited. No Class C worker protection.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <02212 1001 > | Next 12" random fill, spread | | | 0.02 | 0.49 | 0.59 | 0.00 | 0.00 | 1.09 | |
| | Q: 33,500 CY, use 1.2 swell factor == 40,200 CY. | 40200 CY ZHANC01 | 275.00 | 768 | 19,895 | 23,782 | 0 | 0 | 43,677 | 1.09 |

| 06 08. SOLID WASTE COLLECTION/CONTAINMT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <02225 3109 > 10, 30-CY Trucks, 10-mi Haul one-way. Assume: 20 mph ave haul, 90% fill factor, which yields = 275 LCY/HR. Assume random fill available for $3.50/CY (crew has 2 extra dump trucks on standby to allow for breakdowns & maintenance). | 40200 | CY | ZHANC02 | 275.00 | 0.05<br>1,901 | 1.26<br>50,568 | 1.51<br>60,545 | 3.77<br>151,675 | 0.00<br>0 | 6.54<br>262,787 | 6.54 |
| L CIV AA <02225 2372 > Excav & Load, 7-CY Whl Mtd Ldr, Med Matl, 355 CY/Hr (275 CY/Hr based on haul production rate). | 40200 | CY | CODLL | 275.00 | 0.01<br>221 | 0.14<br>5,757 | 0.25<br>9,941 | 0.00<br>0 | 0.00<br>0 | 0.39<br>15,698 | 0.39 |
| Random Fill - Next 12" | 33500 | CY | | | 2,890 | 76,219 | 94,269 | 151,675 | 0 | 322,163 | 9.62 |
| 06 08 05 1 06- 3. Top Soil - 6"<br>This item covers placement of 6" top soil layer over the random fill.<br>Assuming top soil locally available for $10/CY. | | | | | | | | | | | |
| USR AA <02212 1001 > 6" Top soil, spread/compact Q: 18,000 CY, use 1.2 swell factor == 21,500 CY. | 21500 | CY | ZHANC01 | 275.00 | 0.02<br>411 | 0.49<br>10,640 | 0.59<br>12,719 | 0.00<br>0 | 0.00<br>0 | 1.09<br>23,360 | 1.09 |
| USR AA <02225 3109 > 10, 30-CY Trucks, 10-mi Haul one-way. Assume: 20 mph ave haul, 90% fill factor, which yields = 275 LCY/HR. Assume top soil available for $10/CY (crew has 2 extra dump trucks on standby to allow for breakdowns & maintenance). | 21500 | CY | ZHANC02 | 275.00 | 0.05<br>1,017 | 1.26<br>27,045 | 1.51<br>32,381 | 10.78<br>231,770 | 0.00<br>0 | 13.54<br>291,196 | 13.54 |
| L CIV AA <02225 2372 > Excav & Load, 7-CY Whl Mtd Ldr, Med Matl, 355 CY/Hr (275 CY/Hr based on haul production rate). | 21500 | CY | CODLL | 275.00 | 0.01<br>118 | 0.14<br>3,079 | 0.25<br>5,317 | 0.00<br>0 | 0.00<br>0 | 0.39<br>8,396 | 0.39 |
| Top Soil - 6" | 18000 | CY | | | 1,546 | 40,764 | 50,418 | 231,770 | 0 | 322,952 | 17.94 |

| 06 08. SOLID WASTE COLLECTION/CONTAINMT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08 05 1 06- 4. PPEquip, Modified Class D<br>Assume workers in modified Class D PPE (require negative respirator) until 6" of random fill covers all of landfill area, estimated to be 10 working days. Included also is a decon shower, and equipment decon equipment. | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 40.00 | EA | N/A | 0.00 | 0 | 0 | 460 | 0 | 0 | 460 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 40.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 302 | 0 | 302 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 40.00 | PR | N/A | 0.00 | 0 | 0 | 92 | 0 | 0 | 92 | 2.30 |
| HTW AA <01951 5726 > Half-Mask Air Purifying Respirators | | | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| | 4.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 80 | 0 | 80 | 19.94 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | | | 10.00 | 232.40 | 1.45 | 34.83 | 0.00 | 268.68 | |
| | 10.00 | DAY | ULABA | 0.13 | 100 | 2,324 | 14 | 348 | 0 | 2,687 | 268.68 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | 10.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 270 | 0 | 270 | 26.95 |
| HTW AA <01951 5723 > Cartridges, Respirator | | | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | 80.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 2,070 | 0 | 2,070 | 25.87 |
| PPEquip, Modified Class D | 10.00 | DAY | | | 100 | 2,324 | 566 | 3,069 | 0 | 5,960 | 595.96 |
| Asbestos Cap | 121000 | SY | | | 5,830 | 153,435 | 187,463 | 454,428 | 0 | 795,326 | 6.57 |
| CAP CONSTRUCTION | | | | | 5,830 | 153,435 | 187,463 | 454,428 | 0 | 795,326 | |

06 21. DEMOBILIZATION

06 21. DEMOBILIZATION
06 21 04. DEMOB OF EQUIPMENT & FACILITIES
06 21 04 01. TRANSPORTATION

06 21 04 01 07-. DEMOBILIZATION

06 21 04 01 07- 01. DEMOBILIZATION
Assume Demob at 75% of Mob.

| | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEMOBILIZATION | | | | | 0 | 0 | 7,125 | 0 | 0 | 7,125 | |
| DEMOBILIZATION | | | | | 0 | 0 | 7,125 | 0 | 0 | 7,125 | |
| TRANSPORTATION | | | | | 0 | 0 | 7,125 | 0 | 0 | 7,125 | |
| HANFORD: REMEDIATION | | | | | 6,610 | 253,270 | 222,348 | 531,210 | 0 | 1,006,828 | |

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT 11HASB: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, HORN RAPIDS LANDFILL, ASBESTOS CAP
** CREW BACKUP **

TIME 10:43:30



| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CODLL | 1 B-eqoprmed + 1 Front End Ldr, 7 Cy, Wheel Mtd | | | PROD = | 100% | | | CREW HOURS = | 580 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRCRNL | Eq Oper, Crane/Shovl | 1.00 | HR | 27.82 | 1.00 | 27.82 | | | 27.82 |
| MIL | L40FI008 E | LDR,FE,WH,7.00CY 4WD ARTIC PWSH | 1.00 | HR | 68.00 | | | 1.00 | 68.00 | 68.00 |
| | TOTAL | | | | | 1.50 | 39.39 | 1.00 | 68.00 | 107.39 |
| | ULABA | 1 B-laborer + Small Tools | | | PROD = | 100% | | | CREW HOURS = | 160 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 1.25 | 29.05 | 0.13 | 0.18 | 29.23 |
| | ZHANC01 | Mat Distr Crew: D8 Dozer + 14G Grader + Water Tk | | | PROD = | 100% | | | CREW HOURS = | 580 |
| MIL * | R40HY004 E | ROLL,VIB,TOWED,STL,PAD,58"D,60" | 1.00 | HR | 10.62 | | | 1.00 | 10.62 | 10.62 |
| MIL | T10CA017 E | BLADE, UNIVERSAL,HYDR,FOR D8 | 1.00 | HR | 7.20 | | | 1.00 | 7.20 | 7.20 |
| MIL | T15CA015 E | DOZER,CWLR,CAT D-8L, (ADD BLADE | 1.00 | HR | 73.29 | | | 1.00 | 73.29 | 73.29 |
| MIL | G15CA005 E | GRADER,MOTOR,CAT14-G, ARTIC | 1.00 | HR | 41.08 | | | 1.00 | 41.08 | 41.08 |
| MIL | T40XX033 E | WATER TANK, 3000 GAL (ADD TRUCK | 1.00 | HR | 3.15 | | | 1.00 | 3.15 | 3.15 |
| MIL | T50FO015 E | TRK, HWY, 54,000 GVW, 3 AXLE | 1.00 | HR | 25.97 | | | 1.00 | 25.97 | 25.97 |
| MIL | XMIXX020 E | Small Tools | 1.00 | HR | 1.39 | | | 1.00 | 1.39 | 1.39 |
| MIL | B-EQOPRCRNL | Eq Oper, Crane/Shovl | 1.00 | HR | 27.82 | 1.00 | 27.82 | | | 27.82 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | B-EQOPROILL | Eq Oper, Oilers | 1.00 | HR | 24.54 | 1.00 | 24.54 | | | 24.54 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 1.00 | HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| USR | B-EQOPRCRNF | Eq Oper, Crane/Shovl | 0.25 | HR | 28.32 | 0.25 | 7.08 | | | 7.08 |
| | TOTAL | | | | | 5.25 | 136.09 | 7.00 | 162.70 | 298.79 |
| | ZHANC02 | 12 Bottom Dump Trks, 30-CY & Drivers | | | PROD = | 100% | | | CREW HOURS = | 580 |
| MIL * | XMIXX020 E | Small Tools | 1.00 | HR | 1.39 | | | 1.00 | 1.39 | 1.39 |
| MIL * | T45XX003 E | TRK TRLR,BOTTOM DUMP, 30CY,30T | 10.00 | HR | 7.11 | | | 10.00 | 71.06 | 71.06 |
| MIL * | T50KE003 E | TRK, HWY, 3AXLE, 46,000 GVW | 10.00 | HR | 32.37 | | | 10.00 | 323.66 | 323.66 |
| MIL * | B-TRKDVRHVL | Truck Drivers, Heavy | 11.00 | HR | 27.24 | 11.00 | 299.64 | | | 299.64 |
| MIL * | B-LABORER L | Laborer (Semi-Skilled) | 2.00 | HR | 23.14 | 2.00 | 46.28 | | | 46.28 |
| USR | T45XX003 U | TRK TRLR,BOTTOM DUMP, 30CY,30T | 2.00 | HR | 2.25 | 2.00 | 4.50 | | | 4.50 |
| MIL | T50KE003 U | TRK, HWY, 3AXLE, 46,000 GVW | 2.00 | HR | 6.79 | 2.00 | 13.58 | | | 13.58 |
| | TOTAL | | | | | 13.00 | 345.92 | 25.00 | 414.19 | 760.11 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-EQOPRCRN | Eq Oper, Crane/Shovl | 27.82 | 0.0% | 0.0% | 0.00 | 0.00 | 27.82 | HR | 10/22/92 | 21.20 | 1304 |
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 580 |
| MIL | B-EQOPROIL | Eq Oper, Oilers | 24.54 | 0.0% | 0.0% | 0.00 | 0.00 | 24.54 | HR | 10/22/92 | 11.00 | 580 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 2229 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 6956 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | G15CA005 | GRADER,MOTOR,CAT14-G, ARTIC | 13.24 | 5.29 | 5.41 | 1.8 | 13.62 | 1.47 | 0.22 | 41.08 | HR | 580 |
| MIL | L40FI008 | LDR,FE,WH,7.00CY 4WD ARTIC PWSHF | 20.27 | 6.84 | 10.33 | 3.1 | 18.29 | 7.98 | 1.20 | 68.00 | HR | 580 |
| MIL | R40HY004 | ROLL,VIB,TOWED,STL,PAD,58"D,60"W | 3.76 | 0.90 | 1.48 | 0.4 | 4.02 | | | 10.62 | HR | 580 |
| MIL | T10CA017 | BLADE, UNIVERSAL,HYDR,FOR D8 | 2.97 | 0.87 | | 0.1 | 3.23 | | | 7.20 | HR | 580 |
| MIL | T15CA015 | DOZER,CWLR,CAT D-8L, (ADD BLADE) | 22.47 | 6.58 | 10.71 | 3.0 | 30.53 | | | 73.29 | HR | 580 |
| MIL | T40XX033 | WATER TANK, 3000 GAL (ADD TRUCK) | 1.52 | 0.37 | | | 1.26 | | | 3.15 | HR | 580 |
| MIL | T45XX003 | TRK TRLR,BOTTOM DUMP, 30CY,30T | 2.85 | 0.82 | | 0.0 | 2.61 | 0.64 | 0.10 | 7.11 | HR | 5796 |
| MIL | T50FO015 | TRK, HWY, 54,000 GVW, 3 AXLE | 6.23 | 1.58 | 8.74 | 2.4 | 5.48 | 1.31 | 0.20 | 25.97 | HR | 580 |
| MIL | T50KE003 | TRK, HWY, 3AXLE, 46,000 GVW | 9.16 | 2.21 | 9.83 | 2.7 | 7.97 | 0.39 | 0.06 | 32.37 | HR | 5796 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 1180 |

THIS PAGE INTENTIONALLY
LEFT BLANK

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/01/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 1 |
| Level 6 ID : | 4 | - | Task | 2 |

Owner Cost Level : 1

** PROJECT SETTINGS **

---

2ND VIEW COLUMNS
Quantity Column Width : 12

| | | | | | |
|---|---|---|---|---|---|
| Col Type | P | X | X | X | X |
| Rep Width | 25 | 0 | 0 | 0 | 0 |
| Title | PROJECT | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | R | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 4
Table of Contents Levels : 5

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |

Print Unit Cost Row : Y
Print Page Footer : N
Show Cost Codes : Y

COLUMNS OPTIONS
Print Crew Id : Y
Crew Output : Y
Unit Cost : Y

UPB TITLES
No. of Levels to Print : 0
Bracket Titles With : - :
Include titles Notes : Y

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

| | |
|---|---|
| Column 1 FOOH | : JOB OFFICE OVERHEAD |
| Column 2 HOOH | : HOME OFFICE OVERHEAD |
| Column 3 PROF | : PROFIT |
| Column 4 BOND | : PERFORMANCE BOND |
| Column 5 B&O TAX | : B & O AND OTHER TAXES |

| | |
|---|---|
| Column 1 S & A | : S & A |
| Column 2 CONTG | : CONTINGENCY |
| Column 3 (Unused) | : |
| Column 4 (Unused) | : |
| Column 5 (Unused) | : |

| STANDARD COLUMN WIDTHS | | SUMMARY FEATURES | |
|---|---|---|---|
| Quantity Columns | : 10 | Round Totals Column | : T-Tens |
| Total cost Columns | : 12 | Contingency Notes | : Yes |
| Unit Cost Columns | : 12 | Show Project Totals | : Yes |

REPORT SELECTION

| | |
|---|---|
| Project Settings | : Y |
| Contractor Settings | : Y |
| Link Listing | : N |

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Detail : | Y | | | | | | | | | |
| Project : | N | Y | Y | | N | N | N | N | Y | Y |
| Contractor : | N | Y | | Y | N | N | N | N | N | N |
| Division : | N | N | N | Y | N | N | N | N | N | N |
| System : | N | N | N | Y | N | N | N | N | N | N |
| 2nd View : | N | | | | | | | | | |
| Crew : | Y | | | Y | N | N | N | N | N | N |
| Labor : | Y | | | | | | | | | |
| Equipment : | Y | | | | | | | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTIONS | | | | | | |
| S & A | P | 15.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT AND FACILITIES | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | |
| 06 01 01 1 01- Equipment Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 04 01 02- Office Trailers - setup | | | | | | |
| 06 01 04 01 02- 01 Assembly and Setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | O | | | | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | O | | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 03 SITE WORK | | | | | | |
| 06 03 05 FENCING (& MISC) | | | | | | |
| 06 03 05 1 FENCING | | | | | | |
| 06 03 05 1 03- 6' Security Perimeter Fencing | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 03 05 2 MISCELLANEOUS IMPROVEMENTS | | | | | | | |
| 06 03 05 2 04- Warning Signs | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 15.00 | | | | |
| 06 03 05 3 LANDSCAPING & TURFING | | | | | | | |
| 06 03 05 3 05- Dryland Grass | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 08 SOLID WASTE COLLECTION/CONTAINMT | | | | | | | |
| 06 08 05 CAPPING CONTAMINATED AREAS | | | | | | | |
| 06 08 05 1 CAP CONSTRUCTION | | | | | | | |
| 06 08 05 1 06- Asbestos Cap | | | | | | | |
| 06 08 05 1 06- 1 Random Fill - 1st 6" | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 35.00 | | | | |
| 06 08 05 1 06- 2 Random Fill - Next 12" | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 35.00 | | | | |
| 06 08 05 1 06- 3 Top Soil - 6" | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 35.00 | | | | |
| 06 08 05 1 06- 4 PPEquip, Modified Class D | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 07- DEMOBILIZATION | | | | | | | |
| 06 21 04 01 07- 01 DEMOBILIZATION | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

# UN-1100-6
# ONSITE INCINERATION

9 3 1 2 3 2 1 5 1 0

THIS PAGE INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
UN-1100-6, BEHPs
ON-SITE INCINERATION

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/23/92
Est Construction Time: 220 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This project file covers the cleanup of the discolored soils, defined as the UN-1100-6 sub-operable unit. This option will use On-site Incineration to clean up the BEHP contaminated soils, estimated at about 450 CY. The cost for the incinerator will be shared with the Ephemeral Pool site.

1. Normal Contingency for this level of estimate is 20-30%.

2. Using 50% Contingency for Setup, as it is undefined.

3. Using higher Contingency for quantitized ground soil activities, as quantities are not definite, and costs and location of fill and top soil have been assumed.

THIS PAGE INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS — SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 6.....1
PROJECT INDIRECT SUMMARY - LEVEL 6.....6

DETAILED ESTIMATE — DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & FACILITIES
1. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
02. Mob, Incinerator.....2
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Assembly and Setup.....3
02. DECONTAMINATION FACILITIES
01. Assembly and Setup.....4
05. PRELIMINARY SITE PREP
01. 100'x100' Graded Pad.....5
02. Perimeter Security Fence.....5
05. CONSTRUCT TEMPORARY UTILITIES
01. POWER AND SITE LIGHTING
01. Temporary Power.....6
03. WATER, SEWER, AND GAS
01. Temporary Water Service.....7
02. Temporary Sewer Service.....7
02. MONITOR, SAMPLE, TEST, ANALYSIS
06. SAMPLING SOIL, SED & SOLID WASTE
01. SURFACE SOIL
01. PHASE I, Soil Sample.....8
02. PHASE II, Soil Sample.....8
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....9
03. SITE WORK
05. FENCING
03. FENCING
01. Temporary Fencing.....10
14. THERMAL TREATMENT
01. INCINERATION
01. SOLIDS PREPARATION AND HANDLING
01. Phase I - Incineration.....11
02. Phase II - Incineration.....12
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & FACILITIES

DETAILED ESTIMATE DETAIL PAGE

01. TRANSPORTATION
01. Demobilization.....15

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 3,470 | 520 | 800 | 4,780 | | 1 |
| 06 01 01 1 02 Mob, Incinerator | | | | | | | |
| 06 01 01 1 02 01 Mob, Incinerator | | 132,770 | 19,920 | 30,540 | 183,220 | | 1 |
| 06 01 01 1 02 02 Trial Burn and Lab Analysis | | 26,550 | 3,980 | 6,110 | 36,640 | | 1 |
| Mob, Incinerator | | 159,320 | 23,900 | 36,640 | 219,860 | | 1 |
| TRANSPORTATION | | 162,790 | 24,420 | 37,440 | 224,650 | | |
| MOB OF EQUIPMENT & FACILITIES | | 162,790 | 24,420 | 37,440 | 224,650 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | 100.00 HR | 3,780 | 570 | 2,180 | 6,530 | 65.27 | 2 |
| Assembly and Setup | | 3,780 | 570 | 2,180 | 6,530 | | 2 |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,180 | 6,530 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | 80.00 HR | 3,030 | 450 | 1,740 | 5,220 | 65.27 | 2 |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Assembly and Setup | | 3,030 | 450 | 1,740 | 5,220 | | 2 |
| DECONTAMINATION FACILITIES | | 3,030 | 450 | 1,740 | 5,220 | | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | | |
| 06 01 04 05 01 100'x100' Graded Pad | | | | | | | |
| 100'x100' Graded Pad | 1110.00 SY | 9,280 | 1,390 | 2,670 | 13,350 | 12.02 | 1 |
| 06 01 04 05 02 Perimeter Security Fence | | | | | | | |
| Perimeter Security Fence | 400.00 LF | 10,620 | 1,590 | 2,440 | 14,660 | 36.64 | 1 |
| PRELIMINARY SITE PREP | | 19,910 | 2,990 | 5,110 | 28,000 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 26,720 | 4,010 | 9,030 | 39,750 | | |
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | | |
| 06 01 05 01 POWER AND SITE LIGHTING | | | | | | | |
| 06 01 05 01 01 Temporary Power | | | | | | | |
| 06 01 05 01 01 01 Temporary Power (3 PH, 800 AMP) | | 3,320 | 500 | 1,910 | 5,730 | | 2 |
| Temporary Power | | 3,320 | 500 | 1,910 | 5,730 | | |
| POWER AND SITE LIGHTING | | 3,320 | 500 | 1,910 | 5,730 | | |
| 06 01 05 03 WATER, SEWER, AND GAS | | | | | | | |
| 06 01 05 03 01 Temporary Water Service | | | | | | | |
| 06 01 05 03 01 01 Temporary Water Service | | 6,640 | 1,000 | 3,820 | 11,450 | | 2 |
| Temporary Water Service | | 6,640 | 1,000 | 3,820 | 11,450 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 01 05 03 02 Temporary Sewer Service | | | | | | | |
| 06 01 05 03 02 01 Temporary Sewer Service | | 6,640 | 1,000 | 3,820 | 11,450 | | 2 |
| Temporary Sewer Service | | 6,640 | 1,000 | 3,820 | 11,450 | | |
| WATER, SEWER, AND GAS | | 13,280 | 1,990 | 7,630 | 22,900 | | |
| CONSTRUCT TEMPORARY UTILITIES | | 16,600 | 2,490 | 9,540 | 28,630 | | |
| MOBILIZATION & PREPARATORY WORK | | 206,100 | 30,920 | 56,010 | 293,030 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 39,830 | 5,970 | 9,160 | 54,970 | 916.10 | 1 |
| 06 02 06 01 01 02 QA Report | | 3,580 | 540 | 820 | 4,950 | | 1 |
| PHASE I, Soil Sample | 60.00 EA | 43,420 | 6,510 | 9,990 | 59,910 | 998.55 | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 49,790 | 7,470 | 11,450 | 68,710 | 1145.13 | 1 |
| 06 02 06 01 02 02 QA Report | | 3,580 | 540 | 820 | 4,950 | | 1 |
| PHASE II, Soil Sample | 60.00 EA | 53,370 | 8,010 | 12,280 | 73,650 | 1227.58 | |
| SURFACE SOIL | | 96,790 | 14,520 | 22,260 | 133,570 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 96,790 | 14,520 | 22,260 | 133,570 | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| 06 02 91 01 01 01 | QA/Safety Monitoring | 30.00 WK | 207,120 | 31,070 | 47,640 | 285,820 | 9527.47 | 1 |
| | QA/Safety Monitoring | | 207,120 | 31,070 | 47,640 | 285,820 | | |
| | QA/Safety Monitoring | | 207,120 | 31,070 | 47,640 | 285,820 | | |
| | QA/Safety Monitoring | | 207,120 | 31,070 | 47,640 | 285,820 | | |
| | MONITOR, SAMPLE, TEST, ANALYSIS | | 303,910 | 45,590 | 69,900 | 419,390 | | |
| 06 03 SITE WORK | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | |
| 06 03 05 03 FENCING | | | | | | | | |
| 06 03 05 03 01 Temporary Fencing | | | | | | | | |
| 06 03 05 03 01 01 | Temporary Fencing - 6' Security | 500.00 LF | 16,600 | 2,490 | 3,820 | 22,900 | 45.81 | 1 |
| | Temporary Fencing | 750.00 LF | 16,600 | 2,490 | 3,820 | 22,900 | 30.54 | |
| | FENCING | | 16,600 | 2,490 | 3,820 | 22,900 | | |
| | FENCING | | 16,600 | 2,490 | 3,820 | 22,900 | | |
| | SITE WORK | | 16,600 | 2,490 | 3,820 | 22,900 | | |
| 06 14 THERMAL TREATMENT | | | | | | | | |
| 06 14 01 INCINERATION | | | | | | | | |
| 06 14 01 01 SOLIDS PREPARATION AND HANDLING | | | | | | | | |
| 06 14 01 01 01 Phase I - Incineration | | | | | | | | |
| 06 14 01 01 01 01 | PPEquip, Class D | 2.00 DAY | 1,010 | 150 | 290 | 1,450 | 727.18 | 1 |
| 06 14 01 01 01 02A | Excavate, haul to Incinerator | 290.00 CY | 1,940 | 290 | 670 | 2,900 | 10.00 | 3 |
| 06 14 01 01 01 02B | On-site Incineration | 290.00 CY | 215,750 | 32,360 | 74,430 | 322,540 | 1112.22 | 3 |
| 06 14 01 01 01 02C | Disposal, On-site | 260.00 CY | 1,580 | 240 | 540 | 2,360 | 9.07 | 3 |
| | Phase I - Incineration | 290.00 CY | 220,280 | 33,040 | 75,940 | 329,260 | 1135.37 | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 14 01 01 02 Phase II - Incineration | | | | | | | |
| 06 14 01 01 02 01 PPEquip, Class D | 1.00 DAY | 510 | 80 | 150 | 730 | 727.18 | 1 |
| 06 14 01 01 02 02A Excavate, haul to Incinerator | 150.00 CY | 560 | 80 | 190 | 840 | 5.62 | 3 |
| 06 14 01 01 02 02B On-site Incineration | 150.00 CY | 112,850 | 16,930 | 38,930 | 168,720 | 1124.77 | 3 |
| 06 14 01 01 02 02C Disposal, On-site | 135.00 CY | 800 | 120 | 280 | 1,200 | 8.88 | 3 |
| Phase II - Incineration | 150.00 CY | 114,720 | 17,210 | 39,550 | 171,480 | 1143.22 | |
| SOLIDS PREPARATION AND HANDLING | | 335,000 | 50,250 | 115,490 | 500,740 | | |
| INCINERATION | | 335,000 | 50,250 | 115,490 | 500,740 | | |
| THERMAL TREATMENT | | 335,000 | 50,250 | 115,490 | 500,740 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 Demobilization | | | | | | | |
| 06 21 04 01 01 01 Demob - Equipment & Setup | | 27,380 | 4,110 | 6,300 | 37,790 | | 1 |
| 06 21 04 01 01 02 Demobilization - Incinerator | | 99,580 | 14,940 | 22,900 | 137,420 | | 1 |
| Demobilization | | 126,960 | 19,040 | 29,200 | 175,200 | | |
| TRANSPORTATION | | 126,960 | 19,040 | 29,200 | 175,200 | | |
| DEMOB OF EQUIPMENT & FACILITIES | | 126,960 | 19,040 | 29,200 | 175,200 | | |
| DEMOBILIZATION | | 126,960 | 19,040 | 29,200 | 175,200 | | |
| REMEDIAL ACTION | | 988,570 | 148,280 | 274,420 | 1,411,270 | | |
| HANFORD: REMEDIATION | | 988,570 | 148,280 | 274,420 | 1,411,270 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | | | |
| Equipment Mob, Detailed List | | 2,610 | 390 | 150 | 250 | 30 | 30 | 3,470 | |
| 06 01 01 1 02 Mob, Incinerator | | | | | | | | | |
| 06 01 01 1 02 01 Mob, Incinerator | | 100,000 | 15,000 | 5,750 | 9,660 | 1,040 | 1,310 | 132,770 | |
| 06 01 01 1 02 02 Trial Burn and Lab Analysis | | 20,000 | 3,000 | 1,150 | 1,930 | 210 | 260 | 26,550 | |
| Mob, Incinerator | | 120,000 | 18,000 | 6,900 | 11,590 | 1,250 | 1,580 | 159,320 | |
| TRANSPORTATION | | 122,610 | 18,390 | 7,050 | 11,840 | 1,280 | 1,610 | 162,790 | |
| MOB OF EQUIPMENT & FACILITIES | | 122,610 | 18,390 | 7,050 | 11,840 | 1,280 | 1,610 | 162,790 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | 37.84 |
| Assembly and Setup | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | 80.00 HR | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | 37.84 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Assembly and Setup | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | |
| DECONTAMINATION FACILITIES | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | | | | |
| 06 01 04 05 01 100'x100' Graded Pad | | | | | | | | | |
| 100'x100' Graded Pad | 1110.00 SY | 6,990 | 1,050 | 400 | 680 | 70 | 90 | 9,280 | 8.36 |
| 06 01 04 05 02 Perimeter Security Fence | | | | | | | | | |
| Perimeter Security Fence | 400.00 LF | 8,000 | 1,200 | 460 | 770 | 80 | 110 | 10,620 | 26.55 |
| PRELIMINARY SITE PREP | | 14,990 | 2,250 | 860 | 1,450 | 160 | 200 | 19,910 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 20,120 | 3,020 | 1,160 | 1,940 | 210 | 260 | 26,720 | |
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | | | | |
| 06 01 05 01 POWER AND SITE LIGHTING | | | | | | | | | |
| 06 01 05 01 01 Temporary Power | | | | | | | | | |
| 06 01 05 01 01 01 Temporary Power (3 PH, 800 AMP) | | 2,500 | 380 | 140 | 240 | 30 | 30 | 3,320 | |
| Temporary Power | | 2,500 | 380 | 140 | 240 | 30 | 30 | 3,320 | |
| POWER AND SITE LIGHTING | | 2,500 | 380 | 140 | 240 | 30 | 30 | 3,320 | |
| 06 01 05 03 WATER, SEWER, AND GAS | | | | | | | | | |
| 06 01 05 03 01 Temporary Water Service | | | | | | | | | |
| 06 01 05 03 01 01 Temporary Water Service | | 5,000 | 750 | 290 | 480 | 50 | 70 | 6,640 | |
| Temporary Water Service | | 5,000 | 750 | 290 | 480 | 50 | 70 | 6,640 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 05 03 02 Temporary Sewer Service | | | | | | | | | |
| 06 01 05 03 02 01 Temporary Sewer Service | | 5,000 | 750 | 290 | 480 | 50 | 70 | 6,640 | |
| Temporary Sewer Service | | 5,000 | 750 | 290 | 480 | 50 | 70 | 6,640 | |
| WATER, SEWER, AND GAS | | 10,000 | 1,500 | 580 | 970 | 100 | 130 | 13,280 | |
| CONSTRUCT TEMPORARY UTILITIES | | 12,500 | 1,880 | 720 | 1,210 | 130 | 160 | 16,600 | |
| MOBILIZATION & PREPARATORY WORK | | 155,230 | 23,280 | 8,930 | 15,000 | 1,620 | 2,040 | 206,100 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 30,000 | 4,500 | 1,720 | 2,900 | 310 | 390 | 39,830 | 663.84 |
| 06 02 06 01 01 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,580 | |
| PHASE I, Soil Sample | 60.00 EA | 32,700 | 4,910 | 1,880 | 3,160 | 340 | 430 | 43,420 | 723.59 |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 37,500 | 5,630 | 2,160 | 3,620 | 390 | 490 | 49,790 | 829.80 |
| 06 02 06 01 02 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,580 | |
| PHASE II, Soil Sample | 60.00 EA | 40,200 | 6,030 | 2,310 | 3,880 | 420 | 530 | 53,370 | 889.55 |
| SURFACE SOIL | | 72,900 | 10,940 | 4,190 | 7,040 | 760 | 960 | 96,790 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 10,940 | 4,190 | 7,040 | 760 | 960 | 96,790 | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |

| | | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| 06 02 91 01 01 01 | QA/Safety Monitoring | 30.00 WK | 156,000 | 23,400 | 8,970 | 15,070 | 1,630 | 2,050 | 207,120 | 6903.96 |
| | QA/Safety Monitoring | | 156,000 | 23,400 | 8,970 | 15,070 | 1,630 | 2,050 | 207,120 | |
| | QA/Safety Monitoring | | 156,000 | 23,400 | 8,970 | 15,070 | 1,630 | 2,050 | 207,120 | |
| | QA/Safety Monitoring | | 156,000 | 23,400 | 8,970 | 15,070 | 1,630 | 2,050 | 207,120 | |
| | MONITOR, SAMPLE, TEST, ANALYSIS | | 228,900 | 34,340 | 13,160 | 22,110 | 2,390 | 3,010 | 303,910 | |
| 06 03 SITE WORK | | | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | | | |
| 06 03 05 03 FENCING | | | | | | | | | | |
| 06 03 05 03 01 Temporary Fencing | | | | | | | | | | |
| 06 03 05 03 01 01 | Temporary Fencing - 6' Security | 500.00 LF | 12,500 | 1,880 | 720 | 1,210 | 130 | 160 | 16,600 | 33.19 |
| | Temporary Fencing | 750.00 LF | 12,500 | 1,880 | 720 | 1,210 | 130 | 160 | 16,600 | 22.13 |
| | FENCING | | 12,500 | 1,880 | 720 | 1,210 | 130 | 160 | 16,600 | |
| | FENCING | | 12,500 | 1,880 | 720 | 1,210 | 130 | 160 | 16,600 | |
| | SITE WORK | | 12,500 | 1,880 | 720 | 1,210 | 130 | 160 | 16,600 | |
| 06 14 THERMAL TREATMENT | | | | | | | | | | |
| 06 14 01 INCINERATION | | | | | | | | | | |
| 06 14 01 01 SOLIDS PREPARATION AND HANDLING | | | | | | | | | | |
| 06 14 01 01 01 Phase I - Incineration | | | | | | | | | | |
| 06 14 01 01 01 01 | PPEquip, Class D | 2.00 DAY | 760 | 110 | 40 | 70 | 10 | 10 | 1,010 | 505.86 |
| 06 14 01 01 01 02A | Excavate, haul to Incinerator | 290.00 CY | 1,460 | 220 | 80 | 140 | 20 | 20 | 1,940 | 6.69 |
| 06 14 01 01 01 02B | On-site Incineration | 290.00 CY | 162,500 | 24,380 | 9,340 | 15,700 | 1,700 | 2,140 | 215,750 | 743.96 |
| 06 14 01 01 01 02C | Disposal, On-site | 260.00 CY | 1,190 | 180 | 70 | 110 | 10 | 20 | 1,580 | 6.07 |
| | Phase I - Incineration | 290.00 CY | 165,910 | 24,890 | 9,540 | 16,030 | 1,730 | 2,180 | 220,280 | 759.58 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 14 01 01 02 Phase II - Incineration | | | | | | | | | |
| 06 14 01 01 02 01 PPEquip, Class D | 1.00 DAY | 380 | 60 | 20 | 40 | 0 | 10 | 510 | 505.86 |
| 06 14 01 01 02 02A Excavate, haul to Incinerator | 150.00 CY | 420 | 60 | 20 | 40 | 0 | 10 | 560 | 3.76 |
| 06 14 01 01 02 02B On-site Incineration | 150.00 CY | 85,000 | 12,750 | 4,890 | 8,210 | 890 | 1,120 | 112,850 | 752.35 |
| 06 14 01 01 02 02C Disposal, On-site | 135.00 CY | 600 | 90 | 30 | 60 | 10 | 10 | 800 | 5.94 |
| Phase II - Incineration | 150.00 CY | 86,410 | 12,960 | 4,970 | 8,350 | 900 | 1,140 | 114,720 | 764.83 |
| SOLIDS PREPARATION AND HANDLING | | 252,320 | 37,850 | 14,510 | 24,370 | 2,630 | 3,320 | 335,000 | |
| INCINERATION | | 252,320 | 37,850 | 14,510 | 24,370 | 2,630 | 3,320 | 335,000 | |
| THERMAL TREATMENT | | 252,320 | 37,850 | 14,510 | 24,370 | 2,630 | 3,320 | 335,000 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 Demobilization | | | | | | | | | |
| 06 21 04 01 01 01 Demob - Equipment & Setup | | 20,630 | 3,090 | 1,190 | 1,990 | 220 | 270 | 27,380 | |
| 06 21 04 01 01 02 Demobilization - Incinerator | | 75,000 | 11,250 | 4,310 | 7,250 | 780 | 990 | 99,580 | |
| Demobilization | | 95,630 | 14,340 | 5,500 | 9,240 | 1,000 | 1,260 | 126,960 | |
| TRANSPORTATION | | 95,630 | 14,340 | 5,500 | 9,240 | 1,000 | 1,260 | 126,960 | |
| DEMOB OF EQUIPMENT & FACILITIES | | 95,630 | 14,340 | 5,500 | 9,240 | 1,000 | 1,260 | 126,960 | |
| DEMOBILIZATION | | 95,630 | 14,340 | 5,500 | 9,240 | 1,000 | 1,260 | 126,960 | |
| REMEDIAL ACTION | | 744,580 | 111,690 | 42,810 | 71,930 | 7,770 | 9,790 | 988,570 | |
| HANFORD: REMEDIATION | | 744,580 | 111,690 | 42,810 | 71,930 | 7,770 | 9,790 | 988,570 | |
| S & A | | | | | | | | 148,280 | |
| SUBTOTAL | | | | | | | | 1,136,850 | |
| CONTINGENCY | | | | | | | | 274,420 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 1,411,270 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT & FACILITIES
06 01 01 1. TRANSPORTATION

06 01 01 1 01. Equipment Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi Radius mob is assumed.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 3237 > | Mob, FEnd Ldr, Wheel, 4.0-6 CY, Articulated Fr, 100-mi rad | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 4201 > | Mob, Roller, Towed, 50-75 Ton, Pneumatic, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 550.00 |
| USR AA <01505 5203 > | Mob, Motor Grader, 150-200 HP, Art. Fr, Pwr Shift, 100-mi Rad | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 525.00 |
| USR AA <01505 7111 > | Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 7123 > | Mob, End Dump trailer, 12 CY w/CLT8000 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 7131 > | Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 150.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 8921 > Mob, Decontamination Trailer, | | | 0.00 | 0.00 | 135.00 | 0.00 | 0.00 | 135.00 | |
| w/25,000 GVW Trk, 100-mi Radius | 1.00 EA | 0.00 | 0 | 0 | 135 | 0 | 0 | 135 | 135.00 |
| M CIV AA <01500 1101 > Mob - Field Office Trailer | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 EA N/A | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| Equipment Mob, Detailed List | | | 0 | 0 | 2,610 | 0 | 0 | 2,610 | |

06 01 01 1 02. Mob, Incinerator
Mob cost for Incinerator from Vesta Technology.

06 01 01 1 02 01. Mob, Incinerator
Mob cost total: $200,000 (Vesta Technology). However, the UN-1100-6 site is one of three sites that would use the incinerator, the other two sites being the Ephemeral pool and the Horn Rapids Landfill PCB hot spot. However, the HRL PCB site is considered incidental, so will use approximately 1/2 mob cost for each site: $100,000.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Mob, Incinerator | | | 0 | 0 | 0 | 0 | 100,000 | 100,000 |

06 01 01 1 02 02. Trial Burn and Lab Analysis
Assume one Trial burn and Lab Analysis needed for each site's soil.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Trial Burn and Lab Analysis | | | 0 | 0 | 0 | 0 | 20,000 | 20,000 |
| Mob, Incinerator | | | 0 | 0 | 0 | 0 | 120,000 | 120,000 |
| TRANSPORTATION | | | 0 | 0 | 2,610 | 0 | 120,000 | 122,610 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | | | |
| 06 01 04 01 01. Assembly and Setup | | | | | | | | | | | |
| 06 01 04 01 01 01. Assembly and Setup | | | | | | | | | | | |
| Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Assembly and Setup | 100.00 | HR | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Assembly and Setup | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | | | |
| 06 01 04 02 01. Assembly and Setup | | | | | | | | | | | |
| 06 01 04 02 01 01. Assembly and Setup<br>Allow 80 mhrs for setup of Decontamination trailer. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Assembly and Setup | 80.00 | HR | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Assembly and Setup | | | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| DECONTAMINATION FACILITIES | | | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 05. PRELIMINARY SITE PREP | | | | | | | | | |
| 06 01 04 05 01. 100'x100' Graded Pad | | | | | | | | | |
| M USR AA <02619 1001 > Gravel Surfacing, Delivered | | | 0.20 | 5.13 | 2.03 | 26.95 | 0.00 | 34.11 | |
| Assume 6" layer, 185 CY x 1.1 = 205 LCY. | 205.00 LCY COFCF | 20.00 | 41 | 1,053 | 415 | 5,525 | 0 | 6,993 | 34.11 |
| 100'x100' Graded Pad | 1110.00 SY | | 41 | 1,053 | 415 | 5,525 | 0 | 6,993 | 6.30 |
| 06 01 04 05 02. Perimeter Security Fence<br>A 6' temporary Security perimeter fence is needed around the incinerator site. A unit cost $20/LF will be used for the fence based on recent bid opening prices.<br>. | | | | | | | | | |
| Perimeter Security Fence | 400.00 LF | | 0 | 2,000 | 1,000 | 5,000 | 0 | 8,000 | 20.00 |
| PRELIMINARY SITE PREP | | | 41 | 3,053 | 1,415 | 10,525 | 0 | 14,993 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 05. CONSTRUCT TEMPORARY UTILITIES | | | | | | | | | | | |
| 06 01 05 01. POWER AND SITE LIGHTING | | | | | | | | | | | |
| 06 01 05 01 01. Temporary Power | | | | | | | | | | | |
| 06 01 05 01 01 01. Temporary Power (3 PH, 800 AMP) Allow $2,500 for temporary power service hookup. | | | | | | | | | | | |
| Temporary Power (3 PH, 800 AMP) | | | | | 0 | 0 | 0 | 0 | 2,500 | 2,500 | |
| Temporary Power | | | | | 0 | 0 | 0 | 0 | 2,500 | 2,500 | |
| POWER AND SITE LIGHTING | | | | | 0 | 0 | 0 | 0 | 2,500 | 2,500 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 05 03. WATER, SEWER, AND GAS | | | | | | | | | | | |
| 06 01 05 03 01. Temporary Water Service | | | | | | | | | | | |
| 06 01 05 03 01 01. Temporary Water Service<br>Allow $5,000 for temporary water service hookup. | | | | | | | | | | | |
| Temporary Water Service | | | | | 0 | 0 | 0 | 0 | 5,000 | 5,000 | |
| Temporary Water Service | | | | | 0 | 0 | 0 | 0 | 5,000 | 5,000 | |
| 06 01 05 03 02. Temporary Sewer Service | | | | | | | | | | | |
| 06 01 05 03 02 01. Temporary Sewer Service<br>Allow $5,000 for temporary sewer service hookup. | | | | | | | | | | | |
| Temporary Sewer Service | | | | | 0 | 0 | 0 | 0 | 5,000 | 5,000 | |
| Temporary Sewer Service | | | | | 0 | 0 | 0 | 0 | 5,000 | 5,000 | |
| WATER, SEWER, AND GAS | | | | | 0 | 0 | 0 | 0 | 10,000 | 10,000 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06. SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01. SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01. PHASE I, Soil Sample | | | | | | | | | |
| After the top 12" of soil is removed, soil samples will be taken. | | | | | | | | | |
| 06 02 06 01 01 01. Soil Sampling | | | | | | | | | |
| Sample on 15'x15' grid (50 samples) with analysis at off site lab for BEHP only, with 14-day turnaround. Method 8270. Add 10 QA samples. | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 30,000 | 30,000 | 500.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE I, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 32,700 | 32,700 | 545.00 |
| 06 02 06 01 02. PHASE II, Soil Sample | | | | | | | | | |
| Another set of soil samples will be taken after the next 6" soil layer is excavated. | | | | | | | | | |
| 06 02 06 01 02 01. Soil Sampling | | | | | | | | | |
| Same as Phase I, except with 7-day turnaround, add 25%. | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 37,500 | 37,500 | 625.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE II, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 40,200 | 40,200 | 670.00 |
| SURFACE SOIL | | | 0 | 0 | 0 | 0 | 72,900 | 72,900 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 02 91. QA/Safety Monitoring | | | | | | | | | | | |
| 06 02 91 01. QA/Safety Monitoring | | | | | | | | | | | |
| 06 02 91 01 01. QA/Safety Monitoring | | | | | | | | | | | |
| This item covers the QA/Safety Monitoring required for the Hanford site. Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA. | | | | | | | | | | | |
| 06 02 91 01 01 01. QA/Safety Monitoring | | | | | | | | | | | |
| This covers cost of QA and Safety oversight per week: WHC HPT: 40 Hrs @ $50/Hr; COE Safety Rep: 40 Hrs @ $70/Hr; COE S.A. for QA: 8 Hrs @ $50/Hr | | | | | | | | | | | |
| Estimated duration of job is 30 weeks, with 1 week for Mob, Setup, & Demob. | | | | | | | | | | | |
| QA/Safety Monitoring | 30.00 | WK | | | 0 | 156,000 | 0 | 0 | 0 | 156,000 | 5200.00 |
| QA/Safety Monitoring | | | | | 0 | 156,000 | 0 | 0 | 0 | 156,000 | |
| QA/Safety Monitoring | | | | | 0 | 156,000 | 0 | 0 | 0 | 156,000 | |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03. SITE WORK | | | | | | | | | | | |
| 06 03 05. FENCING | | | | | | | | | | | |
| 06 03 05 03. FENCING | | | | | | | | | | | |
| 06 03 05 03 01. Temporary Fencing | | | | | | | | | | | |
| 06 03 05 03 01 01. Temporary Fencing - 6' Security<br>A 6' Security fence will be required during the duration of the cleanup activities around the work site. Cost taken from recent bid quotes. "Other" cost for removal.<br>. | | | | | | | | | | | |
| Temporary Fencing - 6' Security | 500.00 | LF | | | 0 | 2,500 | 1,250 | 6,250 | 2,500 | 12,500 | 25.00 |
| Temporary Fencing | 750.00 | LF | | | 0 | 2,500 | 1,250 | 6,250 | 2,500 | 12,500 | 16.67 |
| FENCING | | | | | 0 | 2,500 | 1,250 | 6,250 | 2,500 | 12,500 | |

| 06 14. THERMAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 14. THERMAL TREATMENT | | | | | | | | | | | |
| 06 14 01. INCINERATION | | | | | | | | | | | |
| 06 14 01 01. SOLIDS PREPARATION AND HANDLING | | | | | | | | | | | |
| 06 14 01 01 01. Phase I - Incineration | | | | | | | | | | | |
| 06 14 01 01 01 01. PPEquip, Class D<br>Assume workers in Class D PPE during excavation and hauling to incinerator site, estimated to be 2 working days. Included also is a decon shower, and equipment decon equipment. This item covers 4 personnel. | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 92 | 0 | 0 | 92 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 60 | 0 | 60 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 8.00 | PR | N/A | 0.00 | 0 | 0 | 18 | 0 | 0 | 18 | 2.30 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | | | 10.00 | 232.40 | 1.45 | 34.83 | 0.00 | 268.68 | |
| | 2.00 | DAY | ULABA | 0.13 | 20 | 465 | 3 | 70 | 0 | 537 | 268.68 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | 2.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 54 | 0 | 54 | 26.95 |
| PPEquip, Class D | 2.00 | DAY | | | 20 | 465 | 113 | 184 | 0 | 762 | 381.01 |
| 06 14 01 01 01 02A. Excavate, haul to Incinerator<br>Assume incinerator within a mile of site. Excavate, haul, and stockpile at incinerator site. | | | | | | | | | | | |
| USR AA <02225 2112 > Excavate & Load, 1-CY Backhoe, Med Matl, 20 CY/Hr | | | | | 0.08 | 1.92 | 0.58 | 0.00 | 0.00 | 2.50 | |
| | 325.00 | CY | CODEG | 20.00 | 24 | 623 | 190 | 0 | 0 | 813 | 2.50 |
| USR AA <02225 3104 > Haul, 12 CY Truck, 1-Mi one-way 20 MPH, 4 Cycles/Hr | | | | | 0.04 | 1.09 | 0.90 | 0.00 | 0.00 | 1.99 | |
| | 325.00 | CY | COEID | 25.00 | 13 | 354 | 294 | 0 | 0 | 648 | 1.99 |
| Excavate, haul to Incinerator | 290.00 | CY | | | 37 | 977 | 484 | 0 | 0 | 1,461 | 5.04 |

| 06 14. THERMAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 14 01 01 01 02B. On-site Incineration | | | | | | | | | | | |
| On-site Incineration: processing rate - 5 Ton/D (3.35 LCY/D) cost - $500/CY (BEHP), includes power, water, & operator. (Vesta Technology) | | | | | | | | | | | |
| USR AA <02080 0501 > Processing - BHEP soils | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 500.00 | 500.00 | |
| Processing cost: $500/CY | 325.00 | LCY | | 0.00 | 0 | 0 | 0 | 0 | 162,500 | 162,500 | 500.00 |
| Processing Rate: 5 tons/day | | | | | | | | | | | |
| 1 LCY = 2,940 LB = 1.5 Ton | | | | | | | | | | | |
| 5 T/D / 1.5 T/LCY = 3.35 LCY/D. | | | | | | | | | | | |
| Q: 290 BCY x 1.12 = 325 LCY | | | | | | | | | | | |
| On-site Incineration | 290.00 | CY | | | 0 | 0 | 0 | 0 | 162,500 | 162,500 | 560.34 |
| 06 14 01 01 01 02C. Disposal, On-site | | | | | | | | | | | |
| Assume clean soil spread close to incinerator site. Soil is then covered with a 6" layer of random fill. | | | | | | | | | | | |
| USR AA <02221 6002 > Spread clean soil, 12" Layers | | | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 285.00 | CY | CODTE | 60.00 | 6 | 157 | 204 | 0 | 0 | 360 | 1.26 |
| USR AA <02225 3104 > Haul, 12 CY Truck, 10-Mi one-way | | | | | 0.05 | 1.36 | 1.13 | 3.77 | 0.00 | 6.27 | |
| 2 Cycles/Hr, haul in random-fill | 110.00 | CY | COEID | 20.00 | 6 | 150 | 124 | 415 | 0 | 689 | 6.27 |
| M USR AA <02221 6001 > Spread Random Fill, 6" Layer, | | | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 110.00 | CY | CODTE | 60.00 | 2 | 60 | 79 | 0 | 0 | 139 | 1.26 |
| Disposal, On-site | 260.00 | CY | | | 14 | 367 | 407 | 415 | 0 | 1,189 | 4.57 |
| Phase I - Incineration | 290.00 | CY | | | 71 | 1,809 | 1,004 | 599 | 162,500 | 165,912 | 572.11 |
| 06 14 01 01 02. Phase II - Incineration | | | | | | | | | | | |
| 06 14 01 01 02 01. PPEquip, Class D | | | | | | | | | | | |
| Assume workers in Class D PPE during excavation and hauling to incinerator site, estimated to be 1 working day. Included also is a decon shower, and equipment decon equipment. This item covers 4 personnel. | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 4.00 | EA | N/A | 0.00 | 0 | 0 | 46 | 0 | 0 | 46 | 11.50 |

| 06 14. THERMAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 4.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 30 | 0 | 30 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 4.00 | PR | N/A | 0.00 | 0 | 0 | 9 | 0 | 0 | 9 | 2.30 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, | | | | | 10.00 | 232.40 | 1.45 | 34.83 | 0.00 | 268.68 | |
| 4.2 gpm, 11 HP (Daily cost) | 1.00 | DAY | ULABA | 0.13 | 10 | 232 | 1 | 35 | 0 | 269 | 268.68 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| Fans (Monthly Rental) | 1.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 27 | 0 | 27 | 26.95 |
| PPEquip, Class D | 1.00 | DAY | | | 10 | 232 | 57 | 92 | 0 | 381 | 381.01 |
| 06 14 01 01 02 02A. Excavate, haul to Incinerator<br>Assume incinerator within a mile of site. Excavate, haul, and stockpile at incinerator site. | | | | | | | | | | | |
| USR AA <02225 2112 > Excavate & Load, 1-CY Backhoe, | | | | | 0.04 | 0.96 | 0.29 | 0.00 | 0.00 | 1.25 | |
| Med Matl, 40 CY/Hr | 170.00 | LCY | CODEG | 40.00 | 6 | 163 | 50 | 0 | 0 | 213 | 1.25 |
| USR AA <02225 3104 > Haul, 12 CY Truck, 1-Mi | | | | | 0.03 | 0.68 | 0.57 | 0.00 | 0.00 | 1.25 | |
| 20 MPH, 4 Cycles/Hr | 170.00 | LCY | COEID | 40.00 | 4 | 116 | 96 | 0 | 0 | 212 | 1.25 |
| Excavate, haul to Incinerator | 150.00 | CY | | | 11 | 279 | 146 | 0 | 0 | 424 | 2.83 |
| 06 14 01 01 02 02B. On-site Incineration<br>On-site Incineration:<br>processing rate - 5 Ton/D (3.35 LCY/D)<br>cost - $500/CY (BEHP), includes power, water, & operator.<br>(Vesta Technology) | | | | | | | | | | | |
| USR AA <02080 0501 > Processing - BHEP soils | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 500.00 | 500.00 | |
| Processing Cost: $500/CY | 170.00 | LCY | | 0.00 | 0 | 0 | 0 | 0 | 85,000 | 85,000 | 500.00 |
| Processing Rate: 5 tons/day<br>1 LCY = 2,940 LB = 1.5 Ton<br>5 T/D / 1.5 T/LCY = 3.35 LCY/D<br>Q: 150 BCY x 1.12 = 170 LCY | | | | | | | | | | | |
| On-site Incineration | 150.00 | CY | | | 0 | 0 | 0 | 0 | 85,000 | 85,000 | 566.67 |

| 06 14. THERMAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 14 01 01 02 02C. Disposal, On-site<br>Assume clean soil spread close to incinerator site. Soil then covered with a 6" layer of random fill. | | | | | | | | | | | |
| USR AA <02221 6002 > Spread clean soil, 12" Layers | | | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 150.00 | CY | CODTE | 60.00 | 3 | 82 | 107 | 0 | 0 | 190 | 1.26 |
| USR AA <02225 3104 > Haul, 12 CY Truck, 10-Mi one-way | | | | | 0.05 | 1.36 | 1.13 | 3.77 | 0.00 | 6.27 | |
| 2 Cycles/Hr, haul in random-fill | 55.00 | CY | COEID | 20.00 | 3 | 75 | 62 | 208 | 0 | 345 | 6.27 |
| M USR AA <02221 6001 > Spread Random Fill, 6" Layer, | | | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 55.00 | CY | CODTE | 60.00 | 1 | 30 | 39 | 0 | 0 | 70 | 1.26 |
| Disposal, On-site | 135.00 | CY | | | 7 | 188 | 209 | 208 | 0 | 604 | 4.47 |
| Phase II - Incineration | 150.00 | CY | | | 28 | 699 | 411 | 299 | 85,000 | 86,409 | 576.06 |
| SOLIDS PREPARATION AND HANDLING | | | | | 99 | 2,507 | 1,415 | 898 | 247,500 | 252,321 | |

| 06 21. DEMOBILIZATION | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 21. DEMOBILIZATION | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01. Demobilization | | | | | | | | | |
| 06 21 04 01 01 01. Demob - Equipment & Setup<br>Assume Demob at 75% of Mob and Site setup. | | | | | | | | | |
| Demob - Equipment & Setup | | | 0 | 0 | 20,625 | 0 | 0 | 20,625 | |
| 06 21 04 01 01 02. Demobilization - Incinerator<br>Assume Demob at 75% of Mob. | | | | | | | | | |
| Demobilization - Incinerator | | | 0 | 0 | 0 | 0 | 75,000 | 75,000 | |
| Demobilization | | | 0 | 0 | 20,625 | 0 | 75,000 | 95,625 | |
| TRANSPORTATION | | | 0 | 0 | 20,625 | 0 | 75,000 | 95,625 | |
| HANFORD: REMEDIATION | | | 140 | 168,560 | 27,765 | 17,853 | 530,400 | 744,579 | |

THIS PAGE INTENTIONALLY
LEFT BLANK

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT 1160SI: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, UN-1100-6, ON-SITE INCINERATION
** CREW BACKUP **

TIME 11:12:58



| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CODEG | 1 B-eqoprmed + 1 Backhoe Loader, 55 Hp | | | | PROD = 100% | | | CREW HOURS = | 41 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 11.69 | 50.03 |
| | CODTE | 1 B-eqoprmed + 1 Dozer, Cat D-6h, 165 Hp | | | | PROD = 100% | | | CREW HOURS = | 20 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 0.25 | HR | 26.77 | 0.25 | 6.69 | | | 6.69 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | T10CA010 E | BLADE, ANGLE, HYDR, FOR D6 | 1.00 | HR | 3.95 | | | 1.00 | 3.95 | 3.95 |
| MIL | T15CA010 E | DOZER,CWLR,D-6H,PS,(ADD BLADE) | 1.00 | HR | 38.96 | | | 1.00 | 38.96 | 38.96 |
| | TOTAL | | | | | 1.25 | 32.96 | 2.00 | 42.90 | 75.86 |
| | COEID | 1 B-trkdvrhv + 1 Dump Truck, 12 Cy | | | | PROD = 100% | | | CREW HOURS = | 51 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 1.00 | HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| MIL | T40XX010 E | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.00 | HR | 2.63 | | | 1.00 | 2.63 | 2.63 |
| MIL | T50GM016 E | TRK, HWY, 3 AXLE, 41000 GVW, 6X | 1.00 | HR | 19.97 | | | 1.00 | 19.97 | 19.97 |
| | TOTAL | | | | | 1.00 | 27.24 | 2.00 | 22.60 | 49.84 |
| | COFCF | 2 B-eqoprmed + 1 Grader, Cat 12g, 135 Hp | | | | PROD = 100% | | | CREW HOURS = | 21 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 0.50 | HR | 26.77 | 0.50 | 13.39 | | | 13.39 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 2.00 | HR | 26.27 | 2.00 | 52.54 | | | 52.54 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 0.50 | HR | 27.24 | 0.50 | 13.62 | | | 13.62 |
| MIL | G15CA003 E | GRADER,MOTOR,CAT12-G, ARTIC | 1.00 | HR | 27.05 | | | 1.00 | 27.05 | 27.05 |
| MIL | XMIXX020 E | Small Tools | 0.16 | HR | 1.39 | | | 0.16 | 0.22 | 0.22 |
| MIL | R301G003 E | ROLLER,STATIC,SELF,15T, 11 TIRE | 1.00 | HR | 13.25 | | | 1.00 | 13.25 | 13.25 |
| | TOTAL | | | | | 4.00 | 102.69 | 2.16 | 40.53 | 143.21 |
| | ULABA | 1 B-laborer + Small Tools | | | | PROD = 100% | | | CREW HOURS = | 48 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 1.25 | 29.05 | 0.13 | 0.18 | 29.23 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 117 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 101 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 61 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | TOTAL HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | G15CA003 | GRADER,MOTOR,CAT12-G, ARTIC | 8.89 | 3.49 | 3.65 | 1.2 | 9.10 | 0.58 | 0.09 | 27.05 | HR | 21 |
| MIL | L50CS002 | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 3.42 | 1.16 | 1.86 | 0.6 | 4.04 | 0.53 | 0.08 | 11.69 | HR | 41 |
| MIL | R30IG003 | ROLLER,STATIC,SELF,15T, 11 TIRE | 4.30 | 1.11 | 2.36 | 0.5 | 4.09 | 0.72 | 0.11 | 13.25 | HR | 21 |
| MIL | T10CA010 | BLADE, ANGLE, HYDR, FOR D6 | 1.62 | 0.48 | | 0.0 | 1.77 | | | 3.95 | HR | 20 |
| MIL | T15CA010 | DOZER,CWLR,D-6H,PS,(ADD BLADE) | 10.34 | 3.36 | 5.28 | 1.9 | 18.09 | | | 38.96 | HR | 20 |
| MIL | T40XX010 | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.15 | 0.28 | | 0.0 | 1.11 | | | 2.63 | HR | 51 |
| MIL | T50GM016 | TRK, HWY, 3 AXLE, 41000 GVW, 6X4 | 4.17 | 1.08 | 7.46 | 2.0 | 3.69 | 1.29 | 0.19 | 19.97 | HR | 51 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 10 |

THIS PAGE INTENTIONALLY
LEFT BLANK

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 4
Table of Contents Levels : 5

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |
| | Print Unit Cost Row : | Y | | | | | | | |
| | Print Page Footer : | N | | | | | | | |
| | Show Cost Codes : | Y | | | | | | | |
| COLUMNS OPTIONS | Print Crew Id : | Y | | | | | | | |
| | Crew Output : | Y | | | | | | | |
| | Unit Cost : | Y | | | | | | | |
| UPB TITLES | No. of Levels to Print : | 0 | | | | | | | |
| | Bracket Titles With : | - : | | | | | | | |
| | Include titles Notes : | Y | | | | | | | |

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

| STANDARD COLUMN WIDTHS | | SUMMARY FEATURES | |
|---|---|---|---|
| Quantity Columns : | 10 | Round Totals Column : | T-Tens |
| Total cost Columns : | 12 | Contingency Notes : | Yes |
| Unit Cost Columns : | 12 | Show Project Totals : | Yes |

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y  Measurement Units : Original
Link Listing : N

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) |
|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 1 2 3 4 5 6 |
| Detail : | Y | | | |
| Project : | N | Y | Y | N N N N N Y |
| Contractor : | N | N | | N N N N N N N |
| Division : | N | N | N | Y N N N N N N |
| System : | N | N | N | Y N N N N N N |
| 2nd View : | N | | | |
| Crew : | Y | | | Y N N N N N N |
| Labor : | Y | | | |
| Equipment : | Y | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| Project Information Record | | | | | | | |
| 06 REMEDIAL ACTION | | | | | | | |
| | S & A | P | 15.00 | | | | |
| | CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 01 1 02 Mob, Incinerator | | | | | | | |
| 06 01 01 1 02 01 Mob, Incinerator | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 01 1 02 02 Trial Burn and Lab Analysis | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | | |
| 06 01 04 05 01 100'x100' Graded Pad | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 01 04 05 02 Perimeter Security Fence | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | | |
| 06 01 05 01 POWER AND SITE LIGHTING | | | | | | | |
| 06 01 05 01 01 Temporary Power | | | | | | | |
| 06 01 05 01 01 01 Temporary Power (3 PH, 800 AMP) | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 50.00 | | | | |
| 06 01 05 03 WATER, SEWER, AND GAS | | | | | | | |
| 06 01 05 03 01 Temporary Water Service | | | | | | | |
| 06 01 05 03 01 01 Temporary Water Service | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 50.00 | | | | |
| 06 01 05 03 02 Temporary Sewer Service | | | | | | | |
| 06 01 05 03 02 01 Temporary Sewer Service | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 50.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 01 02 QA Report | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 02 02 QA Report | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |
| 06 03 05 03 FENCING | | | | | | | |
| 06 03 05 03 01 Temporary Fencing | | | | | | | |
| 06 03 05 03 01 01 Temporary Fencing - 6' Security | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |
| 06 14 THERMAL TREATMENT | | | | | | | |
| 06 14 01 INCINERATION | | | | | | | |
| 06 14 01 01 SOLIDS PREPARATION AND HANDLING | | | | | | | |
| 06 14 01 01 01 Phase I - Incineration | | | | | | | |
| 06 14 01 01 01 01 PPEquip, Class D | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 25.00 | | | | |
| 06 14 01 01 01 02A Excavate, haul to Incinerator | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |
| 06 14 01 01 01 02B On-site Incineration | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |
| 06 14 01 01 01 02C Disposal, On-site | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |
| 06 14 01 01 02 Phase II - Incineration | | | | | | | |
| 06 14 01 01 02 01 PPEquip, Class D | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 25.00 | | | | |
| 06 14 01 01 02 02A Excavate, haul to Incinerator | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |
| 06 14 01 01 02 02B On-site Incineration | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |
| 06 14 01 01 02 02C Disposal, On-site | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 Demobilization | | | | | | | |
| 06 21 04 01 01 01 Demob - Equipment & Setup | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 21 04 01 01 02 Demobilization - Incinerator | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

DOE/RL-92-67

# EPHEMERAL POOL
# ONSITE INCINERATION

9 3 1 2 3 2 1 5 5 2

THIS PAGE INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
EPHEMERAL POOL (PCBs)
ON-SITE INCINERATION

Designed By: CENPW-EN-EE/WHC
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/23/92
Est Construction Time: 175 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This project estimate covers the cleanup of PCBs in the Ephemeral Pool by On-site Incineration. The "pool" contains areas of PCB contaminated soil, estimated at about 350 CY. The cost for the incinerator will be shared with the UN-1100-6 site.

1. Normal Contingency for this level of estimate is 20-30%.

2. Using 50% Contingency for Setup, as it is undefined.

3. Using higher Contingency for the random fill and top soil as quantities may change, and location and costs of fill and top soil have been assumed.

THIS PAGE INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS — SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 6.....1
PROJECT INDIRECT SUMMARY - LEVEL 6.....6

DETAILED ESTIMATE — DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & FACILITIES
1. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
02. Mob, Incinerator.....2
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Assembly and Setup.....3
02. DECONTAMINATION FACILITIES
01. Assembly and Setup.....4
05. PRELIMINARY SITE PREP
01. 100'x100' Graded Pad.....5
02. Perimeter Security Fence.....5
05. CONSTRUCT TEMPORARY UTILITIES
01. POWER AND SITE LIGHTING
01. Temporary Power.....6
03. WATER, SEWER, AND GAS
01. Temporary Water Service.....7
02. Temporary Sewer Service.....7
02. MONITOR, SAMPLE, TEST, ANALYSIS
06. SAMPLING SOIL, SED & SOLID WASTE
01. SURFACE SOIL
01. PHASE I, Soil Sample.....8
02. PHASE II, Soil Sample.....8
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....9
03. SITE WORK
05. FENCING
03. FENCING
01. Temporary Fencing.....10
14. THERMAL TREATMENT
01. INCINERATION
01. SOLIDS PREPARATION AND HANDLING
01. Phase I - Incineration.....11
02. Phase II - Incineration.....12
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & FACILITIES

---

DETAILED ESTIMATE DETAIL PAGE

01. TRANSPORTATION
01. Demobilization.....15

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 3,470 | 520 | 800 | 4,780 | | 1 |
| 06 01 01 1 02 Mob, Incinerator | | | | | | | |
| 06 01 01 1 02 01 Mob, Incinerator | | 132,790 | 19,920 | 30,540 | 183,250 | | 1 |
| 06 01 01 1 02 02 Trial Burn and Lab Analysis | | 26,560 | 3,980 | 6,110 | 36,650 | | 1 |
| Mob, Incinerator | | 159,350 | 23,900 | 36,650 | 219,900 | | 1 |
| TRANSPORTATION | | 162,810 | 24,420 | 37,450 | 224,680 | | |
| MOB OF EQUIPMENT & FACILITIES | | 162,810 | 24,420 | 37,450 | 224,680 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | 100.00 HR | 3,780 | 570 | 2,180 | 6,530 | 65.28 | 2 |
| Assembly and Setup | | 3,780 | 570 | 2,180 | 6,530 | | 2 |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,180 | 6,530 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | 80.00 HR | 3,030 | 450 | 1,740 | 5,220 | 65.28 | 2 |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Assembly and Setup | | 3,030 | 450 | 1,740 | 5,220 | | 2 |
| DECONTAMINATION FACILITIES | | 3,030 | 450 | 1,740 | 5,220 | | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | | |
| 06 01 04 05 01 100'x100' Graded Pad | | | | | | | |
| 100'x100' Graded Pad | 1110.00 SY | 9,290 | 1,390 | 2,670 | 13,350 | 12.03 | 1 |
| 06 01 04 05 02 Perimeter Security Fence | | | | | | | |
| Perimeter Security Fence | 400.00 LF | 10,620 | 1,590 | 2,440 | 14,660 | 36.65 | 1 |
| PRELIMINARY SITE PREP | | 19,910 | 2,990 | 5,110 | 28,010 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 26,720 | 4,010 | 9,030 | 39,760 | | |
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | | |
| 06 01 05 01 POWER AND SITE LIGHTING | | | | | | | |
| 06 01 05 01 01 Temporary Power | | | | | | | |
| 06 01 05 01 01 01 Temporary Power (3 PH, 800 AMP) | | 3,320 | 500 | 1,910 | 5,730 | | 2 |
| Temporary Power | | 3,320 | 500 | 1,910 | 5,730 | | |
| POWER AND SITE LIGHTING | | 3,320 | 500 | 1,910 | 5,730 | | |
| 06 01 05 03 WATER, SEWER, AND GAS | | | | | | | |
| 06 01 05 03 01 Temporary Water Service | | | | | | | |
| 06 01 05 03 01 01 Temporary Water Service | | 6,640 | 1,000 | 3,820 | 11,450 | | 2 |
| Temporary Water Service | | 6,640 | 1,000 | 3,820 | 11,450 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 01 05 03 02 Temporary Sewer Service | | | | | | | |
| 06 01 05 03 02 01 Temporary Sewer Service | | 6,640 | 1,000 | 3,820 | 11,450 | | 2 |
| Temporary Sewer Service | | 6,640 | 1,000 | 3,820 | 11,450 | | |
| WATER, SEWER, AND GAS | | 13,280 | 1,990 | 7,640 | 22,910 | | |
| CONSTRUCT TEMPORARY UTILITIES | | 16,600 | 2,490 | 9,540 | 28,630 | | |
| MOBILIZATION & PREPARATORY WORK | | 206,130 | 30,920 | 56,020 | 293,080 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 12,750 | 1,910 | 2,930 | 17,590 | 293.20 | 1 |
| 06 02 06 01 01 02 QA Report | | 3,590 | 540 | 820 | 4,950 | | 1 |
| PHASE I, Soil Sample | 60.00 EA | 16,330 | 2,450 | 3,760 | 22,540 | 375.67 | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 15,930 | 2,390 | 3,670 | 21,990 | 366.50 | 1 |
| 06 02 06 01 02 02 QA Report | | 3,590 | 540 | 820 | 4,950 | | 1 |
| PHASE II, Soil Sample | 60.00 EA | 19,520 | 2,930 | 4,490 | 26,940 | 448.97 | |
| SURFACE SOIL | | 35,850 | 5,380 | 8,250 | 49,480 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 35,850 | 5,380 | 8,250 | 49,480 | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| 06 02 91 01 01 01 | QA/Safety Monitoring | 25.00 WK | 172,630 | 25,890 | 39,700 | 238,230 | 9529.07 | 1 |
| | QA/Safety Monitoring | | 172,630 | 25,890 | 39,700 | 238,230 | | |
| | QA/Safety Monitoring | | 172,630 | 25,890 | 39,700 | 238,230 | | |
| | QA/Safety Monitoring | | 172,630 | 25,890 | 39,700 | 238,230 | | |
| | MONITOR, SAMPLE, TEST, ANALYSIS | | 208,480 | 31,270 | 47,950 | 287,700 | | |
| 06 03 SITE WORK | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | |
| 06 03 05 03 FENCING | | | | | | | | |
| 06 03 05 03 01 Temporary Fencing | | | | | | | | |
| 06 03 05 03 01 01 | Temporary Fencing - 6' Security | 750.00 LF | 24,900 | 3,730 | 5,730 | 34,360 | 45.81 | 1 |
| | Temporary Fencing | 750.00 LF | 24,900 | 3,730 | 5,730 | 34,360 | 45.81 | |
| | FENCING | | 24,900 | 3,730 | 5,730 | 34,360 | | |
| | FENCING | | 24,900 | 3,730 | 5,730 | 34,360 | | |
| | SITE WORK | | 24,900 | 3,730 | 5,730 | 34,360 | | |
| 06 14 THERMAL TREATMENT | | | | | | | | |
| 06 14 01 INCINERATION | | | | | | | | |
| 06 14 01 01 SOLIDS PREPARATION AND HANDLING | | | | | | | | |
| 06 14 01 01 01 Phase I - Incineration | | | | | | | | |
| 06 14 01 01 01 01 | PPEquip, Class D | 2.00 DAY | 1,010 | 150 | 290 | 1,450 | 727.30 | 1 |
| 06 14 01 01 01 02A | Excavate, haul to Incinerator | 230.00 CY | 1,520 | 230 | 530 | 2,280 | 9.89 | 3 |
| 06 14 01 01 01 02B | On-site Incineration | 230.00 CY | 237,030 | 35,550 | 81,780 | 354,360 | 1540.71 | 3 |
| 06 14 01 01 01 02C | Disposal, On-site | 210.00 CY | 890 | 130 | 310 | 1,320 | 6.31 | 3 |
| | Phase I - Incineration | 230.00 CY | 240,450 | 36,070 | 82,900 | 359,420 | 1562.68 | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 14 01 01 02 Phase II - Incineration | | | | | | | |
| 06 14 01 01 02 01 PPEquip, Class D | 1.00 DAY | 510 | 80 | 150 | 730 | 727.30 | 1 |
| 06 14 01 01 02 02A Excavate, haul to Incinerator | 110.00 CY | 410 | 60 | 140 | 620 | 5.63 | 3 |
| 06 14 01 01 02 02B On-site Incineration | 110.00 CY | 116,190 | 17,430 | 40,090 | 173,710 | 1579.16 | 3 |
| 06 14 01 01 02 02C Disposal, On-site | 100.00 CY | 430 | 70 | 150 | 650 | 6.50 | 3 |
| Phase II - Incineration | 110.00 CY | 117,550 | 17,630 | 40,520 | 175,700 | 1597.31 | |
| SOLIDS PREPARATION AND HANDLING | | 358,000 | 53,700 | 123,420 | 535,120 | | |
| INCINERATION | | 358,000 | 53,700 | 123,420 | 535,120 | | |
| THERMAL TREATMENT | | 358,000 | 53,700 | 123,420 | 535,120 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 Demobilization | | | | | | | |
| 06 21 04 01 01 01 Demob - Equipment & Setup | | 27,390 | 4,110 | 6,300 | 37,800 | | 1 |
| 06 21 04 01 01 02 Demobilization - Incinerator | | 99,590 | 14,940 | 22,910 | 137,440 | | 1 |
| Demobilization | | 126,980 | 19,050 | 29,210 | 175,230 | | |
| TRANSPORTATION | | 126,980 | 19,050 | 29,210 | 175,230 | | |
| DEMOB OF EQUIPMENT & FACILITIES | | 126,980 | 19,050 | 29,210 | 175,230 | | |
| DEMOBILIZATION | | 126,980 | 19,050 | 29,210 | 175,230 | | |
| REMEDIAL ACTION | | 924,500 | 138,670 | 262,330 | 1,325,500 | | |
| HANFORD: REMEDIATION | | 924,500 | 138,670 | 262,330 | 1,325,500 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | | | |
| Equipment Mob, Detailed List | | 2,610 | 390 | 150 | 250 | 30 | 30 | 3,470 | |
| 06 01 01 1 02 Mob, Incinerator | | | | | | | | | |
| 06 01 01 1 02 01 Mob, Incinerator | | 100,000 | 15,000 | 5,750 | 9,660 | 1,070 | 1,310 | 132,790 | |
| 06 01 01 1 02 02 Trial Burn and Lab Analysis | | 20,000 | 3,000 | 1,150 | 1,930 | 210 | 260 | 26,560 | |
| Mob, Incinerator | | 120,000 | 18,000 | 6,900 | 11,590 | 1,280 | 1,580 | 159,350 | |
| TRANSPORTATION | | 122,610 | 18,390 | 7,050 | 11,840 | 1,310 | 1,610 | 162,810 | |
| MOB OF EQUIPMENT & FACILITIES | | 122,610 | 18,390 | 7,050 | 11,840 | 1,310 | 1,610 | 162,810 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | 37.85 |
| Assembly and Setup | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | 80.00 HR | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | 37.85 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Assembly and Setup | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | |
| DECONTAMINATION FACILITIES | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | | | | |
| 06 01 04 05 01 100'x100' Graded Pad | | | | | | | | | |
| 100'x100' Graded Pad | 1110.00 SY | 6,990 | 1,050 | 400 | 680 | 70 | 90 | 9,290 | 8.37 |
| 06 01 04 05 02 Perimeter Security Fence | | | | | | | | | |
| Perimeter Security Fence | 400.00 LF | 8,000 | 1,200 | 460 | 770 | 90 | 110 | 10,620 | 26.56 |
| PRELIMINARY SITE PREP | | 14,990 | 2,250 | 860 | 1,450 | 160 | 200 | 19,910 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 20,120 | 3,020 | 1,160 | 1,940 | 210 | 260 | 26,720 | |
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | | | | |
| 06 01 05 01 POWER AND SITE LIGHTING | | | | | | | | | |
| 06 01 05 01 01 Temporary Power | | | | | | | | | |
| 06 01 05 01 01 01 Temporary Power (3 PH, 800 AMP) | | 2,500 | 380 | 140 | 240 | 30 | 30 | 3,320 | |
| Temporary Power | | 2,500 | 380 | 140 | 240 | 30 | 30 | 3,320 | |
| POWER AND SITE LIGHTING | | 2,500 | 380 | 140 | 240 | 30 | 30 | 3,320 | |
| 06 01 05 03 WATER, SEWER, AND GAS | | | | | | | | | |
| 06 01 05 03 01 Temporary Water Service | | | | | | | | | |
| 06 01 05 03 01 01 Temporary Water Service | | 5,000 | 750 | 290 | 480 | 50 | 70 | 6,640 | |
| Temporary Water Service | | 5,000 | 750 | 290 | 480 | 50 | 70 | 6,640 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 05 03 02 Temporary Sewer Service | | | | | | | | | |
| 06 01 05 03 02 01 Temporary Sewer Service | | 5,000 | 750 | 290 | 480 | 50 | 70 | 6,640 | |
| Temporary Sewer Service | | 5,000 | 750 | 290 | 480 | 50 | 70 | 6,640 | |
| WATER, SEWER, AND GAS | | 10,000 | 1,500 | 580 | 970 | 110 | 130 | 13,280 | |
| CONSTRUCT TEMPORARY UTILITIES | | 12,500 | 1,880 | 720 | 1,210 | 130 | 160 | 16,600 | |
| MOBILIZATION & PREPARATORY WORK | | 155,230 | 23,280 | 8,930 | 15,000 | 1,650 | 2,040 | 206,130 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 9,600 | 1,440 | 550 | 930 | 100 | 130 | 12,750 | 212.47 |
| 06 02 06 01 01 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,590 | |
| PHASE I, Soil Sample | 60.00 EA | 12,300 | 1,850 | 710 | 1,190 | 130 | 160 | 16,330 | 272.22 |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 12,000 | 1,800 | 690 | 1,160 | 130 | 160 | 15,930 | 265.58 |
| 06 02 06 01 02 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,590 | |
| PHASE II, Soil Sample | 60.00 EA | 14,700 | 2,210 | 850 | 1,420 | 160 | 190 | 19,520 | 325.34 |
| SURFACE SOIL | | 27,000 | 4,050 | 1,550 | 2,610 | 290 | 350 | 35,850 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 27,000 | 4,050 | 1,550 | 2,610 | 290 | 350 | 35,850 | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |

| | | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| 06 02 91 01 01 01 | QA/Safety Monitoring | 25.00 WK | 130,000 | 19,500 | 7,470 | 12,560 | 1,390 | 1,710 | 172,630 | 6905.13 |
| | QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,390 | 1,710 | 172,630 | |
| | QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,390 | 1,710 | 172,630 | |
| | QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,390 | 1,710 | 172,630 | |
| | MONITOR, SAMPLE, TEST, ANALYSIS | | 157,000 | 23,550 | 9,030 | 15,170 | 1,670 | 2,060 | 208,480 | |
| 06 03 SITE WORK | | | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | | | |
| 06 03 05 03 FENCING | | | | | | | | | | |
| 06 03 05 03 01 Temporary Fencing | | | | | | | | | | |
| 06 03 05 03 01 01 | Temporary Fencing - 6' Security | 750.00 LF | 18,750 | 2,810 | 1,080 | 1,810 | 200 | 250 | 24,900 | 33.20 |
| | Temporary Fencing | 750.00 LF | 18,750 | 2,810 | 1,080 | 1,810 | 200 | 250 | 24,900 | 33.20 |
| | FENCING | | 18,750 | 2,810 | 1,080 | 1,810 | 200 | 250 | 24,900 | |
| | FENCING | | 18,750 | 2,810 | 1,080 | 1,810 | 200 | 250 | 24,900 | |
| | SITE WORK | | 18,750 | 2,810 | 1,080 | 1,810 | 200 | 250 | 24,900 | |
| 06 14 THERMAL TREATMENT | | | | | | | | | | |
| 06 14 01 INCINERATION | | | | | | | | | | |
| 06 14 01 01 SOLIDS PREPARATION AND HANDLING | | | | | | | | | | |
| 06 14 01 01 01 Phase I - Incineration | | | | | | | | | | |
| 06 14 01 01 01 01 | PPEquip, Class D | 2.00 DAY | 760 | 110 | 40 | 70 | 10 | 10 | 1,010 | 505.95 |
| 06 14 01 01 01 02A | Excavate, haul to Incinerator | 230.00 CY | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,520 | 6.62 |
| 06 14 01 01 01 02B | On-site Incineration | 230.00 CY | 178,500 | 26,780 | 10,260 | 17,240 | 1,900 | 2,350 | 237,030 | 1030.57 |
| 06 14 01 01 01 02C | Disposal, On-site | 210.00 CY | 670 | 100 | 40 | 60 | 10 | 10 | 890 | 4.22 |
| | Phase I - Incineration | 230.00 CY | 181,080 | 27,160 | 10,410 | 17,490 | 1,930 | 2,380 | 240,450 | 1045.44 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 14 01 01 02 Phase II - Incineration | | | | | | | | | |
| 06 14 01 01 02 01 PPEquip, Class D | 1.00 DAY | 380 | 60 | 20 | 40 | 0 | 10 | 510 | 505.95 |
| 06 14 01 01 02 02A Excavate, haul to Incinerator | 110.00 CY | 310 | 50 | 20 | 30 | 0 | 0 | 410 | 3.77 |
| 06 14 01 01 02 02B On-site Incineration | 110.00 CY | 87,500 | 13,130 | 5,030 | 8,450 | 930 | 1,150 | 116,190 | 1056.29 |
| 06 14 01 01 02 02C Disposal, On-site | 100.00 CY | 330 | 50 | 20 | 30 | 0 | 0 | 430 | 4.35 |
| Phase II - Incineration | 110.00 CY | 88,520 | 13,280 | 5,090 | 8,550 | 940 | 1,160 | 117,550 | 1068.61 |
| SOLIDS PREPARATION AND HANDLING | | 269,600 | 40,440 | 15,500 | 26,040 | 2,870 | 3,540 | 358,000 | |
| INCINERATION | | 269,600 | 40,440 | 15,500 | 26,040 | 2,870 | 3,540 | 358,000 | |
| THERMAL TREATMENT | | 269,600 | 40,440 | 15,500 | 26,040 | 2,870 | 3,540 | 358,000 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 Demobilization | | | | | | | | | |
| 06 21 04 01 01 01 Demob - Equipment & Setup | | 20,630 | 3,090 | 1,190 | 1,990 | 220 | 270 | 27,390 | |
| 06 21 04 01 01 02 Demobilization - Incinerator | | 75,000 | 11,250 | 4,310 | 7,250 | 800 | 990 | 99,590 | |
| Demobilization | | 95,630 | 14,340 | 5,500 | 9,240 | 1,020 | 1,260 | 126,980 | |
| TRANSPORTATION | | 95,630 | 14,340 | 5,500 | 9,240 | 1,020 | 1,260 | 126,980 | |
| DEMOB OF EQUIPMENT & FACILITIES | | 95,630 | 14,340 | 5,500 | 9,240 | 1,020 | 1,260 | 126,980 | |
| DEMOBILIZATION | | 95,630 | 14,340 | 5,500 | 9,240 | 1,020 | 1,260 | 126,980 | |
| REMEDIAL ACTION | | 696,200 | 104,430 | 40,030 | 67,250 | 7,420 | 9,150 | 924,500 | |
| HANFORD: REMEDIATION | | 696,200 | 104,430 | 40,030 | 67,250 | 7,420 | 9,150 | 924,500 | |
| S & A | | | | | | | | 138,670 | |
| SUBTOTAL | | | | | | | | 1,063,170 | |
| CONTINGENCY | | | | | | | | 262,330 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 1,325,500 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT & FACILITIES
06 01 01 1. TRANSPORTATION

06 01 01 1 01. Equipment Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi Radius mob is assumed.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 3237 > | Mob, FEnd Ldr, Wheel, 4.0-6 CY, | | | | 0.00 | 0.00 | 750.00 | 0.00 | 0.00 | 750.00 | |
| | Articulated Fr, 100-mi rad | 1.00 | EA | 0.00 | 0 | 0 | 750 | 0 | 0 | 750 | 750.00 |
| USR AA <01505 4201 > | Mob, Roller, Towed, 50-75 Ton, | | | | 0.00 | 0.00 | 550.00 | 0.00 | 0.00 | 550.00 | |
| | Pneumatic, 100-mi Radius | 1.00 | EA | 0.00 | 0 | 0 | 550 | 0 | 0 | 550 | 550.00 |
| USR AA <01505 5203 > | Mob, Motor Grader, 150-200 HP, | | | | 0.00 | 0.00 | 525.00 | 0.00 | 0.00 | 525.00 | |
| | Art. Fr, Pwr Shift, 100-mi Rad | 1.00 | EA | 0.00 | 0 | 0 | 525 | 0 | 0 | 525 | 525.00 |
| USR AA <01505 7111 > | Mob, Flatbed w/ Sides, 8'x10', | | | | 0.00 | 0.00 | 125.00 | 0.00 | 0.00 | 125.00 | |
| | Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0 | 0 | 125 | 0 | 0 | 125 | 125.00 |
| USR AA <01505 7123 > | Mob, End Dump trailer, 12 CY | | | | 0.00 | 0.00 | 125.00 | 0.00 | 0.00 | 125.00 | |
| | w/CLT8000 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0 | 0 | 125 | 0 | 0 | 125 | 125.00 |
| USR AA <01505 7131 > | Mob, Water Tank, 3,000 Gal, | | | | 0.00 | 0.00 | 150.00 | 0.00 | 0.00 | 150.00 | |
| | Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0 | 0 | 150 | 0 | 0 | 150 | 150.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 8921 > Mob, Decontamination Trailer, | | | 0.00 | 0.00 | 135.00 | 0.00 | 0.00 | 135.00 | |
| w/25,000 GVW Trk, 100-mi Radius | 1.00 EA | 0.00 | 0 | 0 | 135 | 0 | 0 | 135 | 135.00 |
| M CIV AA <01500 1101 > Mob - Field Office Trailer | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 EA N/A | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| Equipment Mob, Detailed List | | | 0 | 0 | 2,610 | 0 | 0 | 2,610 | |

06 01 01 1 02. Mob, Incinerator
Mob cost for Incinerator from Vesta Technology.

06 01 01 1 02 01. Mob, Incinerator
Mob cost total: $200,000 (Vesta Technology). However, the UN-1100-6 site is one of three sites that would use the incinerator, the other two sites being the Ephemeral pool and the Horn Rapids Landfill PCB hot spot. However, the HRL PCB site in considered incindental, so will use approximately 1/2 mob cost for each site: $100,000.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Mob, Incinerator | | | 0 | 0 | 0 | 0 | 100,000 | 100,000 |

06 01 01 1 02 02. Trial Burn and Lab Analysis
Assume one Trial burn and Lab Analysis needed for each site's soil.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Trial Burn and Lab Analysis | | | 0 | 0 | 0 | 0 | 20,000 | 20,000 |
| Mob, Incinerator | | | 0 | 0 | 0 | 0 | 120,000 | 120,000 |
| TRANSPORTATION | | | 0 | 0 | 2,610 | 0 | 120,000 | 122,610 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01. Assembly and Setup | | | | | | | | | |
| 06 01 04 01 01 01. Assembly and Setup<br>Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Assembly and Setup | 100.00 HR | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Assembly and Setup | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | | | |
| 06 01 04 02 01. Assembly and Setup | | | | | | | | | | | |
| 06 01 04 02 01 01. Assembly and Setup<br>Allow 80 mhrs for setup of Decontamination trailer. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Assembly and Setup | 80.00 | HR | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Assembly and Setup | | | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| DECONTAMINATION FACILITIES | | | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 05. PRELIMINARY SITE PREP | | | | | | | | | |
| 06 01 04 05 01. 100'x100' Graded Pad | | | | | | | | | |
| M USR AA <02619 1001 > Gravel Surfacing, Delivered | | | 0.20 | 5.13 | 2.03 | 26.95 | 0.00 | 34.11 | |
| Assume 6" layer, 185 CY x 1.1 = 205 LCY. | 205.00 LCY COFCF | 20.00 | 41 | 1,053 | 415 | 5,525 | 0 | 6,993 | 34.11 |
| 100'x100' Graded Pad | 1110.00 SY | | 41 | 1,053 | 415 | 5,525 | 0 | 6,993 | 6.30 |
| 06 01 04 05 02. Perimeter Security Fence<br>A 6' temporary Security perimeter fence is needed around the incinerator site. A unit cost $20/LF will be used for the fence based on recent bid opening prices.<br>. | | | | | | | | | |
| Perimeter Security Fence | 400.00 LF | | 0 | 2,000 | 1,000 | 5,000 | 0 | 8,000 | 20.00 |
| PRELIMINARY SITE PREP | | | 41 | 3,053 | 1,415 | 10,525 | 0 | 14,993 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 05. CONSTRUCT TEMPORARY UTILITIES | | | | | | | | | | | |
| 06 01 05 01. POWER AND SITE LIGHTING | | | | | | | | | | | |
| 06 01 05 01 01. Temporary Power | | | | | | | | | | | |
| 06 01 05 01 01 01. Temporary Power (3 PH, 800 AMP) Allow $2,500 for temporary power service hookup. | | | | | | | | | | | |
| Temporary Power (3 PH, 800 AMP) | | | | | 0 | 0 | 0 | 0 | 2,500 | 2,500 | |
| Temporary Power | | | | | 0 | 0 | 0 | 0 | 2,500 | 2,500 | |
| POWER AND SITE LIGHTING | | | | | 0 | 0 | 0 | 0 | 2,500 | 2,500 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 05 03. WATER, SEWER, AND GAS | | | | | | | | | | | |
| 06 01 05 03 01. Temporary Water Service | | | | | | | | | | | |
| 06 01 05 03 01 01. Temporary Water Service<br>Allow $5,000 for temporary water service hookup. | | | | | | | | | | | |
| Temporary Water Service | | | | | 0 | 0 | 0 | 0 | 5,000 | 5,000 | |
| Temporary Water Service | | | | | 0 | 0 | 0 | 0 | 5,000 | 5,000 | |
| 06 01 05 03 02. Temporary Sewer Service | | | | | | | | | | | |
| 06 01 05 03 02 01. Temporary Sewer Service<br>Allow $5,000 for temporary sewer service hookup. | | | | | | | | | | | |
| Temporary Sewer Service | | | | | 0 | 0 | 0 | 0 | 5,000 | 5,000 | |
| Temporary Sewer Service | | | | | 0 | 0 | 0 | 0 | 5,000 | 5,000 | |
| WATER, SEWER, AND GAS | | | | | 0 | 0 | 0 | 0 | 10,000 | 10,000 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06. SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01. SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01. PHASE I, Soil Sample | | | | | | | | | |
| 06 02 06 01 01 01. Soil Sampling<br>After the 12" of soil is removed, 50 samples will be taken (+10 QA) for analysis of PCBs. A 14-day turnaround, Method 8080 will be used for the first 60 samples. Cost given: $160/ea | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 9,600 | 9,600 | 160.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE I, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 12,300 | 12,300 | 205.00 |
| 06 02 06 01 02. PHASE II, Soil Sample | | | | | | | | | |
| 06 02 06 01 02 01. Soil Sampling<br>After the next 6" of soil is removed, 50 samples will be taken (+10 QA) for analysis of PCBs. A 7-day turnaround, Method 8080 will be used for the 60 samples. Cost given: $200/ea | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 12,000 | 12,000 | 200.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE II, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 14,700 | 14,700 | 245.00 |
| SURFACE SOIL | | | 0 | 0 | 0 | 0 | 27,000 | 27,000 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

06 02 91. QA/Safety Monitoring
06 02 91 01. QA/Safety Monitoring

06 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

06 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:
WHC HPT: 40 Hrs @ $50/Hr
COE Safety Rep: 40 Hrs @ $70/Hr
COE S.A. for QA: 8 Hrs @ $50/Hr

Estimated duration of job is 24 weeks, with 1 week for Mob, Setup, & Demob.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | 25.00 | WK | | | 0 | 130,000 | 0 | 0 | 0 | 130,000 | 5200.00 |
| QA/Safety Monitoring | | | | | 0 | 130,000 | 0 | 0 | 0 | 130,000 | |
| QA/Safety Monitoring | | | | | 0 | 130,000 | 0 | 0 | 0 | 130,000 | |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

06 03. SITE WORK
06 03 05. FENCING
06 03 05 03. FENCING

06 03 05 03 01. Temporary Fencing

06 03 05 03 01 01. Temporary Fencing - 6' Security
A 6' Security fence will be required during the duration of the cleanup activities around the work site. Cost taken from recent bid quotes. "Other" cost for removal.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Temporary Fencing - 6' Security | 750.00 | LF | | 0 | 3,750 | 1,875 | 9,375 | 3,750 | 18,750 | 25.00 |
| Temporary Fencing | 750.00 | LF | | 0 | 3,750 | 1,875 | 9,375 | 3,750 | 18,750 | 25.00 |
| FENCING | | | | 0 | 3,750 | 1,875 | 9,375 | 3,750 | 18,750 | |

06 14. THERMAL TREATMENT

06 14. THERMAL TREATMENT
06 14 01. INCINERATION
06 14 01 01. SOLIDS PREPARATION AND HANDLING

06 14 01 01 01. Phase I - Incineration
Phase I, covers excavation of the first 12" layer of soil.

06 14 01 01 01 01. PPEquip, Class D
Assume workers in Class D PPE during excavation and hauling to incinerator site, estimated to be 2 working days. Included also is a decon shower, and equipment decon equipment. This item covers 4 personnel.

| | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M HTW AA <01951 5202 > | Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | | 8.00 | EA | N/A | 0.00 | 0 | 0 | 92 | 0 | 0 | 92 | 11.50 |
| M HTW AA <01951 5204 > | Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 60 | 0 | 60 | 7.55 |
| M HTW AA <01951 5501 > | Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | | 8.00 | PR | N/A | 0.00 | 0 | 0 | 18 | 0 | 0 | 18 | 2.30 |
| USR AA <01957 3105 > | Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | | | 10.00 | 232.40 | 1.45 | 34.83 | 0.00 | 268.68 | |
| | | 2.00 | DAY | ULABA | 0.13 | 20 | 465 | 3 | 70 | 0 | 537 | 268.68 |
| M HTW AA <01957 4301 > | 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | | 2.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 54 | 0 | 54 | 26.95 |
| | PPEquip, Class D | 2.00 | DAY | | | 20 | 465 | 113 | 184 | 0 | 762 | 381.01 |

06 14 01 01 01 02A. Excavate, haul to Incinerator
Assume incinerator within a mile of site. Excavate, haul, and stockpile at incinerator site.

| | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <02225 2112 > | Excavate & Load, 1-CY Backhoe, Med Matl, 20 CY/Hr | | | | | 0.08 | 1.92 | 0.58 | 0.00 | 0.00 | 2.50 | |
| | | 255.00 | LCY | CODEG | 20.00 | 19 | 489 | 149 | 0 | 0 | 638 | 2.50 |
| USR AA <02225 3104 > | Haul, 12 CY Truck, 1-Mi one-way 20 MPH, 4 Cycles/Hr | | | | | 0.04 | 1.09 | 0.90 | 0.00 | 0.00 | 1.99 | |
| | | 255.00 | LCY | COEID | 25.00 | 10 | 278 | 231 | 0 | 0 | 508 | 1.99 |
| | Excavate, haul to Incinerator | 230.00 | CY | | | 29 | 767 | 380 | 0 | 0 | 1,146 | 4.98 |

| 06 14. THERMAL TREATMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 14 01 01 01 02B. On-site Incineration<br>On-site Incineration:<br>processing rate - 5 Ton/D (3.35 LCY/D)<br>cost - $700/CY (PCBs), includes power, water, & operator.<br>(Vesta Technology) | | | | | | | | | |
| USR AA <02080 0501 > Processing - PCB soils | | | 0.00 | 0.00 | 0.00 | 0.00 | 700.00 | 700.00 | |
| Processing cost: $700/CY | 255.00 LCY | 0.00 | 0 | 0 | 0 | 0 | 178,500 | 178,500 | 700.00 |
| Processing Rate: 5 tons/day<br>1 LCY = 2,940 LB = 1.5 Ton<br>5 T/D / 1.5 T/LCY = 3.35 LCY/D.<br>Q: 230 BCY x 1.12 = 255 LCY | | | | | | | | | |
| On-site Incineration | 230.00 CY | | 0 | 0 | 0 | 0 | 178,500 | 178,500 | 776.09 |
| 06 14 01 01 01 02C. Disposal, On-site<br>Assume clean soil spread close to incinerator site. Soil is then covered with a 6" layer of random fill. | | | | | | | | | |
| USR AA <02221 6002 > Spread clean soil, 12" Layers | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 230.00 LCY CODTE | 60.00 | 5 | 126 | 164 | 0 | 0 | 291 | 1.26 |
| USR AA <02225 3104 > Haul, 12 CY Truck, 10-Mi one-way | | | 0.05 | 1.36 | 1.13 | 3.77 | 0.00 | 6.27 | |
| 2 Cycles/Hr, haul in random-fill | 50.00 LCY COEID | 20.00 | 3 | 68 | 57 | 189 | 0 | 313 | 6.27 |
| M USR AA <02221 6001 > Spread Random Fill, 6" Layer, | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 50.00 LCY CODTE | 60.00 | 1 | 27 | 36 | 0 | 0 | 63 | 1.26 |
| Disposal, On-site | 210.00 CY | | 8 | 222 | 257 | 189 | 0 | 667 | 3.18 |
| Phase I - Incineration | 230.00 CY | | 58 | 1,453 | 750 | 373 | 178,500 | 181,076 | 787.29 |
| 06 14 01 01 02. Phase II - Incineration<br>Phase II will excavate the next 6" layer for incineration. | | | | | | | | | |
| 06 14 01 01 02 01. PPEquip, Class D<br>Assume workers in Class D PPE during excavation and hauling to incinerator site, estimated to be 1 working day. Included also is a decon shower, and equipment decon equipment. This item covers 4 personnel. | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 4.00 EA N/A | 0.00 | 0 | 0 | 46 | 0 | 0 | 46 | 11.50 |

| 06 14. THERMAL TREATMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 4.00 EA N/A | 0.00 | 0 | 0 | 0 | 30 | 0 | 30 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 4.00 PR N/A | 0.00 | 0 | 0 | 9 | 0 | 0 | 9 | 2.30 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, | | | 10.00 | 232.40 | 1.45 | 34.83 | 0.00 | 268.68 | |
| 4.2 gpm, 11 HP (Daily cost) | 1.00 DAY ULABA | 0.13 | 10 | 232 | 1 | 35 | 0 | 269 | 268.68 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| Fans (Monthly Rental) | 1.00 DAY N/A | 0.00 | 0 | 0 | 0 | 27 | 0 | 27 | 26.95 |
| PPEquip, Class D | 1.00 DAY | | 10 | 232 | 57 | 92 | 0 | 381 | 381.01 |

06 14 01 01 02 02A. Excavate, haul to Incinerator
Assume incinerator within a mile of site. Excavate, haul, and stockpile at incinerator site.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <02225 2112 > Excavate & Load, 1-CY Backhoe, | | | 0.04 | 0.96 | 0.29 | 0.00 | 0.00 | 1.25 | |
| Med Matl, 40 CY/Hr | 125.00 LCY CODEG | 40.00 | 5 | 120 | 37 | 0 | 0 | 156 | 1.25 |
| USR AA <02225 3104 > Haul, 12 CY Truck, 1-Mi | | | 0.03 | 0.68 | 0.57 | 0.00 | 0.00 | 1.25 | |
| 20 MPH, 4 Cycles/Hr | 125.00 LCY COEID | 40.00 | 3 | 85 | 71 | 0 | 0 | 156 | 1.25 |
| Excavate, haul to Incinerator | 110.00 CY | | 8 | 205 | 107 | 0 | 0 | 312 | 2.84 |

06 14 01 01 02 02B. On-site Incineration
On-site Incineration:
processing rate - 5 Ton/D (3.35 LCY/D)
cost - $700/CY (PCBs), includes power, water, & operator.
(Vesta Technology)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <02080 0501 > Processing - PCB soils | | | 0.00 | 0.00 | 0.00 | 0.00 | 700.00 | 700.00 | |
| Processing Cost: $700/CY | 125.00 LCY | 0.00 | 0 | 0 | 0 | 0 | 87,500 | 87,500 | 700.00 |
| Processing Rate: 5 tons/day | | | | | | | | | |
| 1 LCY = 2,940 LB = 1.5 Ton | | | | | | | | | |
| 5 T/D / 1.5 T/LCY = 3.35 LCY/D | | | | | | | | | |
| Q: 110 BCY x 1.12 = 125 LCY | | | | | | | | | |
| On-site Incineration | 110.00 CY | | 0 | 0 | 0 | 0 | 87,500 | 87,500 | 795.45 |

| 06 14. THERMAL TREATMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 14 01 01 02 02C. Disposal, On-site<br>Assume clean soil spread close to incinerator site. Soil then covered with a 6" layer of random fill. | | | | | | | | | |
| USR AA <02221 6002 > Spread clean soil, 12" Layers | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 110.00 LCY CODTE | 60.00 | 2 | 60 | 79 | 0 | 0 | 139 | 1.26 |
| USR AA <02225 3104 > Haul, 12 CY Truck, 10-Mi one-way | | | 0.05 | 1.36 | 1.13 | 3.77 | 0.00 | 6.27 | |
| 2 Cycles/Hr, haul in random-fill | 25.00 LCY COEID | 20.00 | 1 | 34 | 28 | 94 | 0 | 157 | 6.27 |
| M USR AA <02221 6001 > Spread Random Fill, 6" Layer, | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 25.00 LCY CODTE | 60.00 | 1 | 14 | 18 | 0 | 0 | 32 | 1.26 |
| Disposal, On-site | 100.00 CY | | 4 | 108 | 125 | 94 | 0 | 327 | 3.27 |
| Phase II - Incineration | 110.00 CY | | 22 | 546 | 289 | 186 | 87,500 | 88,520 | 804.73 |
| SOLIDS PREPARATION AND HANDLING | | | 80 | 1,999 | 1,038 | 559 | 266,000 | 269,596 | |

| 06 21. DEMOBILIZATION | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 21. DEMOBILIZATION | | | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | | | |
| 06 21 04 01 01. Demobilization | | | | | | | | | | | |
| 06 21 04 01 01 01. Demob - Equipment & Setup<br>Assume Demob at 75% of Mob and Site setup. | | | | | | | | | | | |
| Demob - Equipment & Setup | | | | | 0 | 0 | 20,625 | 0 | 0 | 20,625 | |
| 06 21 04 01 01 02. Demobilization - Incinerator<br>Assume Demob at 75% of Mob. | | | | | | | | | | | |
| Demobilization - Incinerator | | | | | 0 | 0 | 0 | 0 | 75,000 | 75,000 | |
| Demobilization | | | | | 0 | 0 | 20,625 | 0 | 75,000 | 95,625 | |
| TRANSPORTATION | | | | | 0 | 0 | 20,625 | 0 | 75,000 | 95,625 | |
| HANFORD: REMEDIATION | | | | | 121 | 143,302 | 28,014 | 20,639 | 504,250 | 696,204 | |

THIS PAGE INTENTIONALLY
LEFT BLANK

9 3 1 2 3 2 1 5 3 3



| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CODEG | 1 B-eqoprmed + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 32 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 11.69 | 50.03 |
| | CODTE | 1 B-eqoprmed + 1 Dozer, Cat D-6h, 165 Hp | | | PROD = | 100% | | | CREW HOURS = | 14 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 0.25 | HR | 26.77 | 0.25 | 6.69 | | | 6.69 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | T10CA010 E | BLADE, ANGLE, HYDR, FOR D6 | 1.00 | HR | 3.95 | | | 1.00 | 3.95 | 3.95 |
| MIL | T15CA010 E | DOZER,CWLR,D-6H,PS,(ADD BLADE) | 1.00 | HR | 38.96 | | | 1.00 | 38.96 | 38.96 |
| | TOTAL | | | | | 1.25 | 32.96 | 2.00 | 42.90 | 75.86 |
| | COEID | 1 B-trkdvrhv + 1 Dump Truck, 12 Cy | | | PROD = | 100% | | | CREW HOURS = | 34 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 1.00 | HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| MIL | T40XX010 E | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.00 | HR | 2.63 | | | 1.00 | 2.63 | 2.63 |
| MIL | T50GM016 E | TRK, HWY, 3 AXLE, 41000 GVW, 6X | 1.00 | HR | 19.97 | | | 1.00 | 19.97 | 19.97 |
| | TOTAL | | | | | 1.00 | 27.24 | 2.00 | 22.60 | 49.84 |
| | COFCF | 2 B-eqoprmed + 1 Grader, Cat 12g, 135 Hp | | | PROD = | 100% | | | CREW HOURS = | 21 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 0.50 | HR | 26.77 | 0.50 | 13.39 | | | 13.39 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 2.00 | HR | 26.27 | 2.00 | 52.54 | | | 52.54 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 0.50 | HR | 27.24 | 0.50 | 13.62 | | | 13.62 |
| MIL | G15CA003 E | GRADER,MOTOR,CAT12-G, ARTIC | 1.00 | HR | 27.05 | | | 1.00 | 27.05 | 27.05 |
| MIL | XMIXX020 E | Small Tools | 0.16 | HR | 1.39 | | | 0.16 | 0.22 | 0.22 |
| MIL | R30IG003 E | ROLLER,STATIC,SELF,15T, 11 TIRE | 1.00 | HR | 13.25 | | | 1.00 | 13.25 | 13.25 |
| | TOTAL | | | | | 4.00 | 102.69 | 2.16 | 40.53 | 143.21 |
| | ULABA | 1 B-laborer + Small Tools | | | PROD = | 100% | | | CREW HOURS = | 48 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 1.25 | 29.05 | 0.13 | 0.18 | 29.23 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 100 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 96 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 44 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | G15CA003 | GRADER,MOTOR,CAT12-G, ARTIC | 8.89 | 3.49 | 3.65 | 1.2 | 9.10 | 0.58 | 0.09 | 27.05 | HR | 21 |
| MIL | L50CS002 | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 3.42 | 1.16 | 1.86 | 0.6 | 4.04 | 0.53 | 0.08 | 11.69 | HR | 32 |
| MIL | R30IG003 | ROLLER,STATIC,SELF,15T, 11 TIRE | 4.30 | 1.11 | 2.36 | 0.5 | 4.09 | 0.72 | 0.11 | 13.25 | HR | 21 |
| MIL | T10CA010 | BLADE, ANGLE, HYDR, FOR D6 | 1.62 | 0.48 | | 0.0 | 1.77 | | | 3.95 | HR | 14 |
| MIL | T15CA010 | DOZER,CWLR,D-6H,PS,(ADD BLADE) | 10.34 | 3.36 | 5.28 | 1.9 | 18.09 | | | 38.96 | HR | 14 |
| MIL | T40XX010 | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.15 | 0.28 | | 0.0 | 1.11 | | | 2.63 | HR | 34 |
| MIL | T50GM016 | TRK, HWY, 3 AXLE, 41000 GVW, 6X4 | 4.17 | 1.08 | 7.46 | 2.0 | 3.69 | 1.29 | 0.19 | 19.97 | HR | 34 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 10 |

THIS PAGE INTENTIONALLY
LEFT BLANK

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

---

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 4
Table of Contents Levels : 5

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |

Print Unit Cost Row : Y
Print Page Footer : N
Show Cost Codes : Y

COLUMNS OPTIONS
Print Crew Id : Y
Crew Output : Y
Unit Cost : Y

UPB TITLES
No. of Levels to Print : 0
Bracket Titles With : - :
Include titles Notes : Y

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

| STANDARD COLUMN WIDTHS | | SUMMARY FEATURES | |
|---|---|---|---|
| Quantity Columns : | 10 | Round Totals Column : | T-Tens |
| Total cost Columns : | 12 | Contingency Notes : | Yes |
| Unit Cost Columns : | 12 | Show Project Totals : | Yes |

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y  Measurement Units : Original
Link Listing : N

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Detail : | Y | | | | | | | | | |
| Project : | N | Y | Y | N | N | N | N | N | Y |
| Contractor : | N | N | | N | N | N | N | N | N | N |
| Division : | N | N | N | Y | N | N | N | N | N | N |
| System : | N | N | N | Y | N | N | N | N | N | N |
| 2nd View : | N | | | | | | | | | |
| Crew : | Y | | | Y | N | N | N | N | N | N |
| Labor : | Y | | | | | | | | | |
| Equipment : | Y | | | | | | | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTION | | | | | | |
| S & A | P | 15.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 01 1 02 Mob, Incinerator | | | | | | |
| 06 01 01 1 02 01 Mob, Incinerator | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 01 1 02 02 Trial Burn and Lab Analysis | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | |
| 06 01 04 05 01 100'x100' Graded Pad | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |
| 06 01 04 05 02 Perimeter Security Fence | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | | |
| 06 01 05 01 POWER AND SITE LIGHTING | | | | | | | |
| 06 01 05 01 01 Temporary Power | | | | | | | |
| 06 01 05 01 01 01 Temporary Power (3 PH, 800 AMP) | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 50.00 | | | | |
| 06 01 05 03 WATER, SEWER, AND GAS | | | | | | | |
| 06 01 05 03 01 Temporary Water Service | | | | | | | |
| 06 01 05 03 01 01 Temporary Water Service | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 50.00 | | | | |
| 06 01 05 03 02 Temporary Sewer Service | | | | | | | |
| 06 01 05 03 02 01 Temporary Sewer Service | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 50.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 01 02 QA Report | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 02 02 QA Report | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |
| 06 03 05 03 FENCING | | | | | | | |
| 06 03 05 03 01 Temporary Fencing | | | | | | | |
| 06 03 05 03 01 01 Temporary Fencing - 6' Security | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |
| 06 14 THERMAL TREATMENT | | | | | | | |
| 06 14 01 INCINERATION | | | | | | | |
| 06 14 01 01 SOLIDS PREPARATION AND HANDLING | | | | | | | |
| 06 14 01 01 01 Phase I - Incineration | | | | | | | |
| 06 14 01 01 01 01 PPEquip, Class D | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 25.00 | | | | |
| 06 14 01 01 01 02A Excavate, haul to Incinerator | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |
| 06 14 01 01 01 02B On-site Incineration | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |
| 06 14 01 01 01 02C Disposal, On-site | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |
| 06 14 01 01 02 Phase II - Incineration | | | | | | | |
| 06 14 01 01 02 01 PPEquip, Class D | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 25.00 | | | | |
| 06 14 01 01 02 02A Excavate, haul to Incinerator | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |
| 06 14 01 01 02 02B On-site Incineration | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |
| 06 14 01 01 02 02C Disposal, On-site | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 30.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 Demobilization | | | | | | | |
| 06 21 04 01 01 01 Demob - Equipment & Setup | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 21 04 01 01 02 Demobilization - Incinerator | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

DOE/RL-92-67

# HORN RAPIDS LANDFILL
# ONSITE INCINERATION

9 3 1 2 3 2 1 5 9 4

THIS PAGE INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
HORN RAPIDS LDFL (PCBs HOT SPOT)
ON-SITE INCINERATION

Designed By: CENPW-EN-EE/WHC
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/23/92
Est Construction Time: 290 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This project estimate covers the cleanup of the PCBs "Hot Spot" in the Horn Rapids Landfill (HRL) by On-site Incineration. The HRL contains an area of about 600 CY of highly PCB contaminated soil. The incinerator mobilization and setup cost will be born by the other two sites, the UN-1100-6 and Ephemeral Pool, as this site is concidered incidental.

1. Normal Contingency for this level of estimate is 20-30%.

2. Using 50% Contingency for Setup, as it is undefined.

3. Using higher Contingency for the random fill and top soil as quantities may change, and location and costs of fill and top soil have been assumed.

THIS PAGE INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS — SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 6.....1
PROJECT INDIRECT SUMMARY - LEVEL 6.....5

DETAILED ESTIMATE — DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & FACILITIES
1. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
02. Mob, Incinerator.....2
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Assembly and Setup.....3
02. DECONTAMINATION FACILITIES
01. Assembly and Setup.....4
05. PRELIMINARY SITE PREP.....5
05. CONSTRUCT TEMPORARY UTILITIES.....5
02. MONITOR, SAMPLE, TEST, ANALYSIS
06. SAMPLING SOIL, SED & SOLID WASTE
01. SURFACE SOIL
01. PHASE I, Soil Sample.....5
02. PHASE II, Soil Sample.....5
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....6
14. THERMAL TREATMENT
01. INCINERATION
01. SOLIDS PREPARATION AND HANDLING
01. Phase I - Incineration.....7
02. Phase II - Incineration.....9
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & FACILITIES
01. TRANSPORTATION
01. Demobilization.....11

BACKUP REPORTS — BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 3,470 | 520 | 800 | 4,780 | | 1 |
| 06 01 01 1 02 Mob, Incinerator | | | | | | | |
| 06 01 01 1 02 01 Mob, Incinerator | | 0 | 0 | 0 | 0 | | 1 |
| 06 01 01 1 02 02 Trial Burn and Lab Analysis | | 26,550 | 3,980 | 6,110 | 36,640 | | 1 |
| Mob, Incinerator | | 26,550 | 3,980 | 6,110 | 36,650 | | 1 |
| TRANSPORTATION | | 30,020 | 4,500 | 6,900 | 41,430 | | |
| MOB OF EQUIPMENT & FACILITIES | | 30,020 | 4,500 | 6,900 | 41,430 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | 100.00 HR | 3,780 | 570 | 2,180 | 6,530 | 65.27 | 2 |
| Assembly and Setup | | 3,780 | 570 | 2,180 | 6,530 | | 2 |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,180 | 6,530 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | 80.00 HR | 3,030 | 450 | 1,740 | 5,220 | 65.27 | 2 |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Assembly and Setup | | 3,030 | 450 | 1,740 | 5,220 | | 2 |
| DECONTAMINATION FACILITIES | | 3,030 | 450 | 1,740 | 5,220 | | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,810 | 1,020 | 3,920 | 11,750 | | |
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | | |
| MOBILIZATION & PREPARATORY WORK | | 36,830 | 5,520 | 10,820 | 53,180 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 20.00 EA | 4,250 | 640 | 980 | 5,860 | 293.15 | 1 |
| 06 02 06 01 01 02 QA Report | | 1,990 | 300 | 460 | 2,750 | | 1 |
| PHASE I, Soil Sample | 20.00 EA | 6,240 | 940 | 1,440 | 8,610 | 430.56 | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 20.00 EA | 5,310 | 800 | 1,220 | 7,330 | 366.44 | 1 |
| 06 02 06 01 02 02 QA Report | | 3,580 | 540 | 820 | 4,950 | | 1 |
| PHASE II, Soil Sample | 20.00 EA | 8,900 | 1,330 | 2,050 | 12,280 | 613.78 | |
| SURFACE SOIL | | 15,140 | 2,270 | 3,480 | 20,890 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 15,140 | 2,270 | 3,480 | 20,890 | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| 06 02 91 01 01 | QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 | QA/Safety Monitoring | 41.00 WK | 283,060 | 42,460 | 65,100 | 390,620 | 9527.33 | 1 |
| | QA/Safety Monitoring | | 283,060 | 42,460 | 65,100 | 390,620 | | |
| | QA/Safety Monitoring | | 283,060 | 42,460 | 65,100 | 390,620 | | |
| | QA/Safety Monitoring | | 283,060 | 42,460 | 65,100 | 390,620 | | |
| | MONITOR, SAMPLE, TEST, ANALYSIS | | 298,190 | 44,730 | 68,580 | 411,510 | | |
| 06 14 THERMAL TREATMENT | | | | | | | | |
| 06 14 01 INCINERATION | | | | | | | | |
| 06 14 01 01 SOLIDS PREPARATION AND HANDLING | | | | | | | | |
| 06 14 01 01 01 | Phase I - Incineration | | | | | | | |
| 06 14 01 01 01 01 | PPEquip, Modified Class D | 3.00 DAY | 2,660 | 400 | 760 | 3,820 | 1274.43 | 1 |
| 06 14 01 01 01 02A | Excavate, haul to Incinerator | 350.00 CY | 2,330 | 350 | 800 | 3,480 | 9.94 | 3 |
| 06 14 01 01 01 02B | On-site Incineration | 350.00 CY | 362,450 | 54,370 | 125,050 | 541,870 | 1548.19 | 3 |
| 06 14 01 01 01 02C | Disposal, On-site | 315.00 CY | 1,040 | 160 | 360 | 1,550 | 4.92 | 3 |
| | Phase I - Incineration | 350.00 CY | 368,480 | 55,270 | 126,970 | 550,720 | 1573.49 | |
| 06 14 01 01 02 | Phase II - Incineration | | | | | | | |
| 06 14 01 01 02 01 | PPEquip, Modified Class D | 2.00 DAY | 1,770 | 270 | 510 | 2,550 | 1274.43 | 1 |
| 06 14 01 01 02 02A | Excavate, haul to Incinerator | 250.00 CY | 930 | 140 | 320 | 1,390 | 5.55 | 3 |
| 06 14 01 01 02 02B | On-site Incineration | 250.00 CY | 260,220 | 39,030 | 89,780 | 389,030 | 1556.13 | 3 |
| 06 14 01 01 02 02C | Disposal, On-site | 225.00 CY | 770 | 120 | 270 | 1,150 | 5.11 | 3 |
| | Phase II - Incineration | 250.00 CY | 263,690 | 39,550 | 90,870 | 394,120 | 1576.48 | |
| | SOLIDS PREPARATION AND HANDLING | | 632,170 | 94,830 | 217,840 | 944,840 | | |
| | INCINERATION | | 632,170 | 94,830 | 217,840 | 944,840 | | |
| | THERMAL TREATMENT | | 632,170 | 94,830 | 217,840 | 944,840 | | |
| 06 21 DEMOBILIZATION | | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 Demobilization | | | | | | | |
| 06 21 04 01 01 01 Demob - Equipment & Setup | | 27,380 | 4,110 | 6,300 | 37,790 | | 1 |
| Demobilization | | 27,380 | 4,110 | 6,300 | 37,790 | | |
| TRANSPORTATION | | 27,380 | 4,110 | 6,300 | 37,790 | | |
| DEMOB OF EQUIPMENT & FACILITIES | | 27,380 | 4,110 | 6,300 | 37,790 | | |
| DEMOBILIZATION | | 27,380 | 4,110 | 6,300 | 37,790 | | |
| REMEDIAL ACTION | | 994,580 | 149,190 | 303,550 | 1,447,310 | | |
| HANFORD: REMEDIATION | | 994,580 | 149,190 | 303,550 | 1,447,310 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | | | |
| Equipment Mob, Detailed List | | 2,610 | 390 | 150 | 250 | 30 | 30 | 3,470 | |
| 06 01 01 1 02 Mob, Incinerator | | | | | | | | | |
| 06 01 01 1 02 01 Mob, Incinerator | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 01 01 1 02 02 Trial Burn and Lab Analysis | | 20,000 | 3,000 | 1,150 | 1,930 | 210 | 260 | 26,550 | |
| Mob, Incinerator | | 20,000 | 3,000 | 1,150 | 1,930 | 210 | 260 | 26,550 | |
| TRANSPORTATION | | 22,610 | 3,390 | 1,300 | 2,180 | 240 | 300 | 30,020 | |
| MOB OF EQUIPMENT & FACILITIES | | 22,610 | 3,390 | 1,300 | 2,180 | 240 | 300 | 30,020 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | 37.84 |
| Assembly and Setup | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | 80.00 HR | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | 37.84 |

| | QUANTITY UOM | DIRECT | FOOH | MOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Assembly and Setup | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | |
| DECONTAMINATION FACILITIES | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | | | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 5,130 | 770 | 290 | 500 | 50 | 70 | 6,810 | |
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | | | | |
| MOBILIZATION & PREPARATORY WORK | | 27,740 | 4,160 | 1,600 | 2,680 | 290 | 360 | 36,830 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 20.00 EA | 3,200 | 480 | 180 | 310 | 30 | 40 | 4,250 | 212.43 |
| 06 02 06 01 01 02 QA Report | | 1,500 | 230 | 90 | 140 | 20 | 20 | 1,990 | |
| PHASE I, Soil Sample | 20.00 EA | 4,700 | 710 | 270 | 450 | 50 | 60 | 6,240 | 312.00 |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 20.00 EA | 4,000 | 600 | 230 | 390 | 40 | 50 | 5,310 | 265.53 |
| 06 02 06 01 02 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,580 | |
| PHASE II, Soil Sample | 20.00 EA | 6,700 | 1,010 | 390 | 650 | 70 | 90 | 8,900 | 444.77 |
| SURFACE SOIL | | 11,400 | 1,710 | 660 | 1,100 | 120 | 150 | 15,140 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 11,400 | 1,710 | 660 | 1,100 | 120 | 150 | 15,140 | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 41.00 WK | 213,200 | 31,980 | 12,260 | 20,600 | 2,220 | 2,800 | 283,060 | 6903.86 |
| QA/Safety Monitoring | | 213,200 | 31,980 | 12,260 | 20,600 | 2,220 | 2,800 | 283,060 | |
| QA/Safety Monitoring | | 213,200 | 31,980 | 12,260 | 20,600 | 2,220 | 2,800 | 283,060 | |
| QA/Safety Monitoring | | 213,200 | 31,980 | 12,260 | 20,600 | 2,220 | 2,800 | 283,060 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 224,600 | 33,690 | 12,910 | 21,700 | 2,340 | 2,950 | 298,190 | |
| 06 14 THERMAL TREATMENT | | | | | | | | | |
| 06 14 01 INCINERATION | | | | | | | | | |
| 06 14 01 01 SOLIDS PREPARATION AND HANDLING | | | | | | | | | |
| 06 14 01 01 01 Phase I - Incineration | | | | | | | | | |
| 06 14 01 01 01 01 PPEquip, Modified Class D | 3.00 DAY | 2,000 | 300 | 120 | 190 | 20 | 30 | 2,660 | 886.56 |
| 06 14 01 01 01 02A Excavate, haul to Incinerator | 350.00 CY | 1,750 | 260 | 100 | 170 | 20 | 20 | 2,330 | 6.65 |
| 06 14 01 01 01 02B On-site Incineration | 350.00 CY | 273,000 | 40,950 | 15,700 | 26,370 | 2,840 | 3,590 | 362,450 | 1035.58 |
| 06 14 01 01 01 02C Disposal, On-site | 315.00 CY | 780 | 120 | 40 | 80 | 10 | 10 | 1,040 | 3.29 |
| Phase I - Incineration | 350.00 CY | 277,540 | 41,630 | 15,960 | 26,810 | 2,890 | 3,650 | 368,480 | 1052.79 |
| 06 14 01 01 02 Phase II - Incineration | | | | | | | | | |
| 06 14 01 01 02 01 PPEquip, Modified Class D | 2.00 DAY | 1,340 | 200 | 80 | 130 | 10 | 20 | 1,770 | 886.56 |
| 06 14 01 01 02 02A Excavate, haul to Incinerator | 250.00 CY | 700 | 100 | 40 | 70 | 10 | 10 | 930 | 3.71 |
| 06 14 01 01 02 02B On-site Incineration | 250.00 CY | 196,000 | 29,400 | 11,270 | 18,930 | 2,040 | 2,580 | 260,220 | 1040.89 |
| 06 14 01 01 02 02C Disposal, On-site | 225.00 CY | 580 | 90 | 30 | 60 | 10 | 10 | 770 | 3.42 |
| Phase II - Incineration | 250.00 CY | 198,610 | 29,790 | 11,420 | 19,190 | 2,070 | 2,610 | 263,690 | 1054.77 |
| SOLIDS PREPARATION AND HANDLING | | 476,150 | 71,420 | 27,380 | 46,000 | 4,960 | 6,260 | 632,170 | |
| INCINERATION | | 476,150 | 71,420 | 27,380 | 46,000 | 4,960 | 6,260 | 632,170 | |
| THERMAL TREATMENT | | 476,150 | 71,420 | 27,380 | 46,000 | 4,960 | 6,260 | 632,170 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |

9 3 1 2 3 5 2 1 6 0 6



| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 Demobilization | | | | | | | | | |
| 06 21 04 01 01 01 Demob - Equipment & Setup | | 20,630 | 3,090 | 1,190 | 1,990 | 210 | 270 | 27,380 | |
| Demobilization | | 20,630 | 3,090 | 1,190 | 1,990 | 210 | 270 | 27,380 | |
| TRANSPORTATION | | 20,630 | 3,090 | 1,190 | 1,990 | 210 | 270 | 27,380 | |
| DEMOB OF EQUIPMENT & FACILITIES | | 20,630 | 3,090 | 1,190 | 1,990 | 210 | 270 | 27,380 | |
| DEMOBILIZATION | | 20,630 | 3,090 | 1,190 | 1,990 | 210 | 270 | 27,380 | |
| REMEDIAL ACTION | | 749,120 | 112,370 | 43,070 | 72,360 | 7,810 | 9,850 | 994,580 | |
| HANFORD: REMEDIATION | | 749,120 | 112,370 | 43,070 | 72,360 | 7,810 | 9,850 | 994,580 | |
| S & A | | | | | | | | 149,190 | |
| SUBTOTAL | | | | | | | | 1,143,770 | |
| CONTINGENCY | | | | | | | | 303,550 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 1,447,310 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT & FACILITIES
06 01 01 1. TRANSPORTATION

06 01 01 1 01. Equipment Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi Radius mob is assumed.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 3237 > | Mob, FEnd Ldr, Wheel, 4.0-6 CY, Articulated Fr, 100-mi rad | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 4201 > | Mob, Roller, Towed, 50-75 Ton, Pneumatic, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 550.00 |
| USR AA <01505 5203 > | Mob, Motor Grader, 150-200 HP, Art. Fr, Pwr Shift, 100-mi Rad | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 525.00 |
| USR AA <01505 7111 > | Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 7123 > | Mob, End Dump trailer, 12 CY w/CLT8000 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 7131 > | Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 150.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 8921 > Mob, Decontamination Trailer, | | | 0.00 | 0.00 | 135.00 | 0.00 | 0.00 | 135.00 | |
| w/25,000 GVW Trk, 100-mi Radius | 1.00 EA | 0.00 | 0 | 0 | 135 | 0 | 0 | 135 | 135.00 |
| M CIV AA <01500 1101 > Mob - Field Office Trailer | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 EA N/A | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| Equipment Mob, Detailed List | | | 0 | 0 | 2,610 | 0 | 0 | 2,610 | |

06 01 01 1 02. Mob, Incinerator
Mob cost for Incinerator from Vesta Technology.

06 01 01 1 02 01. Mob, Incinerator
Mob cost total: $200,000 (Vesta Technology). However, the HRL PCBs site is one of three sites that might use the incinerator, the other two sites being the Ephemeral pool and the UN-1100-6 site. Randy Chong said that the mob cost would be born by the other two sites, so no mob cost for HRL PCB.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Mob, Incinerator | | | 0 | 0 | 0 | 0 | 1 | 1 |

06 01 01 1 02 02. Trial Burn and Lab Analysis
Assume one Trial burn and Lab Analysis needed for each site's soil.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Trial Burn and Lab Analysis | | | 0 | 0 | 0 | 0 | 20,000 | 20,000 |
| Mob, Incinerator | | | 0 | 0 | 0 | 0 | 20,001 | 20,001 |
| TRANSPORTATION | | | 0 | 0 | 2,610 | 0 | 20,001 | 22,611 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01. Assembly and Setup | | | | | | | | | |
| 06 01 04 01 01 01. Assembly and Setup<br>Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Assembly and Setup | 100.00 HR | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Assembly and Setup | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | | | |
| 06 01 04 02 01. Assembly and Setup | | | | | | | | | | | |
| 06 01 04 02 01 01. Assembly and Setup<br>Allow 80 mhrs for setup of Decontamination trailer. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Assembly and Setup | 80.00 | HR | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Assembly and Setup | | | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| DECONTAMINATION FACILITIES | | | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 05. PRELIMINARY SITE PREP | | | | | | | | | |
| Assume cost for incinerator site prep covered by the other two sites. | | | | | | | | | |
| PRELIMINARY SITE PREP | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 01 05. CONSTRUCT TEMPORARY UTILITIES | | | | | | | | | |
| Assume construction of Temporary Utilites for the Incinerator are covered by the other two sites. | | | | | | | | | |
| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06. SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01. SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01. PHASE I, Soil Sample | | | | | | | | | |
| After the first 3-feet of soil is excavated, take 16 samples (+4 QA) to evaluate PCB levels. | | | | | | | | | |
| 06 02 06 01 01 01. Soil Sampling | | | | | | | | | |
| Cost as given by Environmental Branch, Method 8080, with a 14-day turn-around. | | | | | | | | | |
| Soil Sampling | 20.00 EA | | 0 | 0 | 0 | 0 | 3,200 | 3,200 | 160.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 1,500 | 1,500 | |
| PHASE I, Soil Sample | 20.00 EA | | 0 | 0 | 0 | 0 | 4,700 | 4,700 | 235.00 |
| 06 02 06 01 02. PHASE II, Soil Sample | | | | | | | | | |
| After the next 2-feet are excavated, another set of samples will be taken to confirm remaining soils are clean. | | | | | | | | | |
| 06 02 06 01 02 01. Soil Sampling | | | | | | | | | |
| Second set of samples to have 7-day turnaround, and will cost $200/ea. | | | | | | | | | |
| Soil Sampling | 20.00 EA | | 0 | 0 | 0 | 0 | 4,000 | 4,000 | 200.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE II, Soil Sample | 20.00 EA | | 0 | 0 | 0 | 0 | 6,700 | 6,700 | 335.00 |
| SURFACE SOIL | | | 0 | 0 | 0 | 0 | 11,400 | 11,400 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 02 91. QA/Safety Monitoring | | | | | | | | | | | |
| 06 02 91 01. QA/Safety Monitoring | | | | | | | | | | | |
| 06 02 91 01 01. QA/Safety Monitoring | | | | | | | | | | | |
| This item covers the QA/Safety Monitoring required for the Hanford site. Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA. | | | | | | | | | | | |
| 06 02 91 01 01 01. QA/Safety Monitoring | | | | | | | | | | | |
| This covers cost of QA and Safety oversight per week: WHC HPT: 40 Hrs @ $50/Hr; COE Safety Rep: 40 Hrs @ $70/Hr; COE S.A. for QA: 8 Hrs @ $50/Hr | | | | | | | | | | | |
| Estimated duration of job is 40 weeks, with 1 week for Mob, Setup, & Demob. | | | | | | | | | | | |
| QA/Safety Monitoring | 41.00 | WK | | | 0 | 213,200 | 0 | 0 | 0 | 213,200 | 5200.00 |
| QA/Safety Monitoring | | | | | 0 | 213,200 | 0 | 0 | 0 | 213,200 | |
| QA/Safety Monitoring | | | | | 0 | 213,200 | 0 | 0 | 0 | 213,200 | |

| 06 14. THERMAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 14. THERMAL TREATMENT | | | | | | | | | | | |
| 06 14 01. INCINERATION | | | | | | | | | | | |
| 06 14 01 01. SOLIDS PREPARATION AND HANDLING | | | | | | | | | | | |
| 06 14 01 01 01. Phase I - Incineration | | | | | | | | | | | |
| Phase I, covers excavation of the first 3-foot layer of soil. | | | | | | | | | | | |
| 06 14 01 01 01 01. PPEquip, Modified Class D | | | | | | | | | | | |
| Assume workers in modified Class D PPE (require negative respirator) during excavation and hauling to incinerator site, estimated to be 3 working days. Included also is a decon shower, and equipment decon equipment. This item covers 4 personnel. | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 12.00 | EA | N/A | 0.00 | 0 | 0 | 138 | 0 | 0 | 138 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 12.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 91 | 0 | 91 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 12.00 | PR | N/A | 0.00 | 0 | 0 | 28 | 0 | 0 | 28 | 2.30 |
| HTW AA <01951 5726 > Half-Mask Air Purifying | | | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| Respirators | 12.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 239 | 0 | 239 | 19.94 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, | | | | | 10.00 | 232.40 | 1.45 | 34.83 | 0.00 | 268.68 | |
| 4.2 gpm, 11 HP (Daily cost) | 3.00 | DAY | ULABA | 0.13 | 30 | 697 | 4 | 104 | 0 | 806 | 268.68 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| Fans (Monthly Rental) | 3.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 81 | 0 | 81 | 26.95 |
| HTW AA <01951 5723 > Cartridges, Respirator | | | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | 24.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 621 | 0 | 621 | 25.87 |
| PPEquip, Modified Class D | 3.00 | DAY | | | 30 | 697 | 170 | 1,136 | 0 | 2,003 | 667.76 |
| 06 14 01 01 01 02A. Excavate, haul to Incinerator | | | | | | | | | | | |
| Assume incinerator within a mile of site. Excavate, haul, and stockpile at incinerator site. | | | | | | | | | | | |
| USR AA <02225 2112 > Excavate & Load, 1-CY Backhoe, | | | | | 0.08 | 1.92 | 0.58 | 0.00 | 0.00 | 2.50 | |
| Med Matl, 20 CY/Hr | 390.00 | LCY | CODEG | 20.00 | 29 | 748 | 228 | 0 | 0 | 976 | 2.50 |

| 06 14. THERMAL TREATMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <02225 3104 > Haul, 12 CY Truck, 1-Mi one-way | | | 0.04 | 1.09 | 0.90 | 0.00 | 0.00 | 1.99 | |
| 20 MPH, 4 Cycles/Hr | 390.00 LCY COEID | 25.00 | 16 | 425 | 353 | 0 | 0 | 778 | 1.99 |
| Excavate, haul to Incinerator | 350.00 CY | | 45 | 1,173 | 581 | 0 | 0 | 1,753 | 5.01 |
| 06 14 01 01 01 02B. On-site Incineration | | | | | | | | | |
| On-site Incineration: | | | | | | | | | |
| processing rate - 5 Ton/D (3.35 LCY/D) | | | | | | | | | |
| cost - $700/CY (PCBs), includes power, water, & operator. | | | | | | | | | |
| (Vesta Technology) | | | | | | | | | |
| USR AA <02080 0501 > Processing - PCB soils | | | 0.00 | 0.00 | 0.00 | 0.00 | 700.00 | 700.00 | |
| Processing cost: $700/CY | 390.00 LCY | 0.00 | 0 | 0 | 0 | 0 | 273,000 | 273,000 | 700.00 |
| Processing Rate: 5 tons/day | | | | | | | | | |
| 1 LCY = 2,940 LB = 1.5 Ton | | | | | | | | | |
| 5 T/D / 1.5 T/LCY = 3.35 LCY/D. | | | | | | | | | |
| Q: 350 BCY x 1.12 = 390 LCY | | | | | | | | | |
| On-site Incineration | 350.00 CY | | 0 | 0 | 0 | 0 | 273,000 | 273,000 | 780.00 |
| 06 14 01 01 01 02C. Disposal, On-site | | | | | | | | | |
| Assume clean soil spread close to incinerator site. Soil is then covered | | | | | | | | | |
| with a 6" layer of random fill. | | | | | | | | | |
| USR AA <02221 6002 > Spread clean soil, 12" Layers | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 350.00 LCY CODTE | 60.00 | 7 | 192 | 250 | 0 | 0 | 443 | 1.26 |
| USR AA <02225 3104 > Haul, 12 CY Truck, 10-Mi one-way | | | 0.05 | 1.36 | 1.13 | 3.77 | 0.00 | 6.27 | |
| 2 Cycles/Hr, haul in random-fill | 45.00 LCY COEID | 20.00 | 2 | 61 | 51 | 170 | 0 | 282 | 6.27 |
| M USR AA <02221 6001 > Spread Random Fill, 6" Layer, | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 45.00 LCY CODTE | 60.00 | 1 | 25 | 32 | 0 | 0 | 57 | 1.26 |
| Disposal, On-site | 315.00 CY | | 10 | 278 | 333 | 170 | 0 | 781 | 2.48 |
| Phase I - Incineration | 350.00 CY | | 85 | 2,148 | 1,084 | 1,306 | 273,000 | 277,538 | 792.97 |

06 14. THERMAL TREATMENT

06 14 01 01 02. Phase II - Incineration
Phase II will excavate the next 2-foot layer for incineration.

06 14 01 01 02 01. PPEquip, Modified Class D
Assume workers in modified Class D PPE (require negative respirator) during excavation and hauling to incinerator site, estimated to be 2 working days. Included also is a decon shower, and equipment decon equipment. This item covers 4 personnel.

| | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M HTW AA <01951 5202 > | Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | | 8.00 | EA | N/A | 0.00 | 0 | 0 | 92 | 0 | 0 | 92 | 11.50 |
| M HTW AA <01951 5204 > | Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 60 | 0 | 60 | 7.55 |
| M HTW AA <01951 5501 > | Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | | 8.00 | PR | N/A | 0.00 | 0 | 0 | 18 | 0 | 0 | 18 | 2.30 |
| HTW AA <01951 5726 > | Half-Mask Air Purifying Respirators | | | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| | | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 160 | 0 | 160 | 19.94 |
| USR AA <01957 3105 > | Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | | | 10.00 | 232.40 | 1.45 | 34.83 | 0.00 | 268.68 | |
| | | 2.00 | DAY | ULABA | 0.13 | 20 | 465 | 3 | 70 | 0 | 537 | 268.68 |
| M HTW AA <01957 4301 > | 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | | 2.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 54 | 0 | 54 | 26.95 |
| HTW AA <01951 5723 > | Cartridges, Respirator | | | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | | 16.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 414 | 0 | 414 | 25.87 |
| | PPEquip, Modified Class D | 2.00 | DAY | | | 20 | 465 | 113 | 757 | 0 | 1,336 | 667.76 |

06 14 01 01 02 02A. Excavate, haul to Incinerator
Assume incinerator within a mile of site. Excavate, haul, and stockpile at incinerator site.

| | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <02225 2112 > | Excavate & Load, 1-CY Backhoe, Med Matl, 40 CY/Hr | | | | | 0.04 | 0.96 | 0.29 | 0.00 | 0.00 | 1.25 | |
| | | 280.00 | LCY | CODEG | 40.00 | 11 | 268 | 82 | 0 | 0 | 350 | 1.25 |
| USR AA <02225 3104 > | Haul, 12 CY Truck, 1-Mi 20 MPH, 4 Cycles/Hr | | | | | 0.03 | 0.68 | 0.57 | 0.00 | 0.00 | 1.25 | |
| | | 280.00 | LCY | COEID | 40.00 | 7 | 191 | 158 | 0 | 0 | 349 | 1.25 |
| | Excavate, haul to Incinerator | 250.00 | CY | | | 18 | 459 | 240 | 0 | 0 | 699 | 2.80 |

| 06 14. THERMAL TREATMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 14 01 01 02 02B. On-site Incineration<br>On-site Incineration:<br>processing rate - 5 Ton/D (3.35 LCY/D)<br>cost - $700/CY (PCBs), includes power, water, & operator.<br>(Vesta Technology) | | | | | | | | | |
| USR AA <02080 0501 > Processing - PCB soils | | | 0.00 | 0.00 | 0.00 | 0.00 | 700.00 | 700.00 | |
| Processing Cost: $700/CY | 280.00 LCY | 0.00 | 0 | 0 | 0 | 0 | 196,000 | 196,000 | 700.00 |
| Processing Rate: 5 tons/day<br>1 LCY = 2,940 LB = 1.5 Ton<br>5 T/D / 1.5 T/LCY = 3.35 LCY/D<br>Q: 250 BCY x 1.12 = 280 LCY | | | | | | | | | |
| On-site Incineration | 250.00 CY | | 0 | 0 | 0 | 0 | 196,000 | 196,000 | 784.00 |
| 06 14 01 01 02 02C. Disposal, On-site<br>Assume clean soil spread close to incinerator site. Soil then covered with a 6" layer of random fill. | | | | | | | | | |
| USR AA <02221 6002 > Spread clean soil, 12" Layers | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 250.00 LCY CODTE | 60.00 | 5 | 137 | 179 | 0 | 0 | 316 | 1.26 |
| USR AA <02225 3104 > Haul, 12 CY Truck, 10-Mi one-way | | | 0.05 | 1.36 | 1.13 | 3.77 | 0.00 | 6.27 | |
| 2 Cycles/Hr, haul in random-fill | 35.00 LCY COEID | 20.00 | 2 | 48 | 40 | 132 | 0 | 219 | 6.27 |
| M USR AA <02221 6001 > Spread Random Fill, 6" Layer, | | | 0.02 | 0.55 | 0.72 | 0.00 | 0.00 | 1.26 | |
| Without Compaction | 35.00 LCY CODTE | 60.00 | 1 | 19 | 25 | 0 | 0 | 44 | 1.26 |
| Disposal, On-site | 225.00 CY | | 8 | 204 | 243 | 132 | 0 | 580 | 2.58 |
| Phase II - Incineration | 250.00 CY | | 45 | 1,128 | 597 | 889 | 196,000 | 198,614 | 794.46 |
| SOLIDS PREPARATION AND HANDLING | | | 130 | 3,276 | 1,681 | 2,195 | 469,000 | 476,152 | |

| 06 21. DEMOBILIZATION | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 21. DEMOBILIZATION | | | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | | | |
| 06 21 04 01 01. Demobilization | | | | | | | | | | | |
| 06 21 04 01 01 01. Demob - Equipment & Setup<br>Assume Demob at 75% of Mob and Site setup. | | | | | | | | | | | |
| Demob - Equipment & Setup | | | | | 0 | 0 | 20,625 | 0 | 0 | 20,625 | |
| Demobilization | | | | | 0 | 0 | 20,625 | 0 | 0 | 20,625 | |
| TRANSPORTATION | | | | | 0 | 0 | 20,625 | 0 | 0 | 20,625 | |
| HANFORD: REMEDIATION | | | | | 130 | 220,976 | 25,366 | 2,375 | 500,401 | 749,118 | |

THIS PAGE INTENTIONALLY
LEFT BLANK

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT PCBOSI: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, HRL PCBs HOT SPOT, ON-SITE INCINERATE
** CREW BACKUP **

TIME 12:16:08

BACKUP PAGE 1

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CODEG | 1 B-eqoprmed + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 53 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 11.69 | 50.03 |
| | CODTE | 1 B-eqoprmed + 1 Dozer, Cat D-6h, 165 Hp | | | PROD = | 100% | | | CREW HOURS = | 23 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 0.25 | HR | 26.77 | 0.25 | 6.69 | | | 6.69 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | T10CA010 E | BLADE, ANGLE, HYDR, FOR D6 | 1.00 | HR | 3.95 | | | 1.00 | 3.95 | 3.95 |
| MIL | T15CA010 E | DOZER,CWLR,D-6H,PS,(ADD BLADE) | 1.00 | HR | 38.96 | | | 1.00 | 38.96 | 38.96 |
| | TOTAL | | | | | 1.25 | 32.96 | 2.00 | 42.90 | 75.86 |
| | COEID | 1 B-trkdvrhv + 1 Dump Truck, 12 Cy | | | PROD = | 100% | | | CREW HOURS = | 53 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 1.00 | HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| MIL | T40XX010 E | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.00 | HR | 2.63 | | | 1.00 | 2.63 | 2.63 |
| MIL | T50GM016 E | TRK, HWY, 3 AXLE, 41000 GVW, 6X | 1.00 | HR | 19.97 | | | 1.00 | 19.97 | 19.97 |
| | TOTAL | | | | | 1.00 | 27.24 | 2.00 | 22.60 | 49.84 |
| | ULABA | 1 B-laborer + Small Tools | | | PROD = | 100% | | | CREW HOURS = | 80 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 1.25 | 29.05 | 0.13 | 0.18 | 29.23 |

9 3 1 2 3 5 2 1 6 1 9



| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 81 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 127 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 53 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | L50CS002 | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 3.42 | 1.16 | 1.86 | 0.6 | 4.04 | 0.53 | 0.08 | 11.69 | HR | 53 |
| MIL | T10CA010 | BLADE, ANGLE, HYDR, FOR D6 | 1.62 | 0.48 | | 0.0 | 1.77 | | | 3.95 | HR | 23 |
| MIL | T15CA010 | DOZER,CWLR,D-6H,PS,(ADD BLADE) | 10.34 | 3.36 | 5.28 | 1.9 | 18.09 | | | 38.96 | HR | 23 |
| MIL | T40XX010 | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.15 | 0.28 | | 0.0 | 1.11 | | | 2.63 | HR | 53 |
| MIL | T50GM016 | TRK, HWY, 3 AXLE, 41000 GVW, 6X4 | 4.17 | 1.08 | 7.46 | 2.0 | 3.69 | 1.29 | 0.19 | 19.97 | HR | 53 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 10 |

THIS PAGE INTENTIONALLY
LEFT BLANK

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

---

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 4
Table of Contents Levels : 5

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |

Print Unit Cost Row : Y
Print Page Footer : N
Show Cost Codes : Y

COLUMNS OPTIONS
Print Crew Id : Y
Crew Output : Y
Unit Cost : Y

UPB TITLES
No. of Levels to Print : 0
Bracket Titles With : - :
Include titles Notes : Y

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y Measurement Units : Original
Link Listing : N

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Detail : | Y | | | | | | | | | |
| Project : | N | Y | Y | N | N | N | N | N | Y | |
| Contractor : | N | N | | N | N | N | N | N | N | |
| Division : | N | N | N | Y | N | N | N | N | N | |
| System : | N | N | N | Y | N | N | N | N | N | |
| 2nd View : | N | | | | | | | | | |
| Crew : | Y | | | Y | N | N | N | N | N | |
| Labor : | Y | | | | | | | | | |
| Equipment : | Y | | | | | | | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTION | | | | | | |
| S & A | P | 15.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 01 1 02 Mob, Incinerator | | | | | | |
| 06 01 01 1 02 01 Mob, Incinerator | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 01 1 02 02 Trial Burn and Lab Analysis | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | O | | | | | |
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | O | | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 01 02 QA Report | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 02 02 QA Report | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 14 THERMAL TREATMENT | | | | | | | |
| 06 14 01 INCINERATION | | | | | | | |
| 06 14 01 01 SOLIDS PREPARATION AND HANDLING | | | | | | | |
| 06 14 01 01 01 Phase I - Incineration | | | | | | | |
| 06 14 01 01 01 01 PPEquip, Modified Class D | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 14 01 01 01 02A Excavate, haul to Incinerator | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |
| 06 14 01 01 01 02B On-site Incineration | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 14 01 01 01 02C Disposal, On-site | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |
| 06 14 01 01 02 Phase II - Incineration | | | | | | | |
| 06 14 01 01 02 01 PPEquip, Modified Class D | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 14 01 01 02 02A Excavate, haul to Incinerator | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |
| 06 14 01 01 02 02B On-site Incineration | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |
| 06 14 01 01 02 02C Disposal, On-site | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 Demobilization | | | | | | | |
| 06 21 04 01 01 01 Demob - Equipment & Setup | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

DOE/RL-92-67

# EPHEMERAL POOL
# OFFSITE INCINERATION

9 3 1 2 3 . 2 1 6 2 8

[illegible] NALLY
[illegible]

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
EPHEMERAL POOL
OFF-SITE INCINERATION - PCBs

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/12/92

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baseline Estimate

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" DOE, Richaland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation

In the project breakdown, the first level, "06", represent Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. See Contingency Notes for explanation of Contingency percentages. S & A is estimated at 15%. See Detail notes (pg. 1) for explanation of overhead percentages used.

This project estimate covers the Off-site Incineration of the PCBs in the Ephemeral Pool area. Assume PCB soils loaded into 20-Ton roll-off units for transport to Texas for incineration.

1. Contingency is based on uncertainty of the amount of time required to do the work represented in the estimate, etc.

2. Contingency is based on the uncertainty of the quantities presented.

3. Contingency based on the unit costs obtained by Vendor and therefore may be different by the time work will actually be accomplished.

THIS PAGE INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS  SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 5.....1
PROJECT OWNER SUMMARY - LEVEL 6.....4
PROJECT INDIRECT SUMMARY - LEVEL 5.....8
PROJECT INDIRECT SUMMARY - LEVEL 6.....11

DETAILED ESTIMATE  DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION AND PREPATORY WORK
01. MOB OF EQUIPMENT & PERSONNEL
1. TRANSPORTATION
01-. Ph I, Equip Mob, Detailed List.....1
02-. Ph II, Equip Mob, Detailed List.....2
03. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Ph I, Office Trailers - setup.....3
02. Ph II, Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
03. Ph I, Trailers - assbly/setup.....4
04. Ph II, Trailers - assbly/setup.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
06. SAMPLING SOIL, SED & SOLID WASTE
01. SURFACE SOIL
01. PHASE I, Soil Sample
01. Soil Sampling.....5
02. QA Report.....5
02. PHASE II, Soil Sample
01. Soil Sampling.....6
02. QA Report.....6
03. SITE WORK
05. FENCING
01. FENCING
01. Temporary Fencing
01. Temporary Fencing - 6' Security.....7
08. SOLID WASTE COLLECT/CONTAINMENT
01. EXCAVATION
03. CONTAMINATED SOIL
01. PHASE I, Excavate/Load PCB Soils
01. Excavate/Load PCB Soils.....8
02. Transport PCB Soils - Arlington.....8
03. PPEquip, Modified Class D.....8
02. PHASE II,Excavate/Load PCB Soils
01. Excavate/Load PCB Soils.....10
02. Transport PCB Soils - Arlington.....10
03. PPEquip, Modified Class D.....10
03. Post Removal
01. Excavate/Load Crew.....12
02. PPEquip, Modified Class D.....12

DETAILED ESTIMATE DETAIL PAGE

91. Safety and Quality Assurance.....13
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. PH I, Demob and take down.....14
02. PH II, Demob and Take down.....14

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | 2,040 | 0 | 410 | 2,440 | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | 2,040 | 0 | 410 | 2,440 | | |
| TRANSPORTATION | | 4,070 | 0 | 810 | 4,880 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,070 | 0 | 810 | 4,880 | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | 100.00 HR | 2,850 | 0 | 570 | 3,420 | 34.20 | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | 100.00 HR | 2,850 | 0 | 570 | 3,420 | 34.20 | |
| TRAILERS AND BUILDINGS | | 5,700 | 0 | 1,140 | 6,840 | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | 120.00 HR | 3,420 | 0 | 680 | 4,100 | 34.20 | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | 120.00 HR | 3,420 | 0 | 680 | 4,100 | 34.20 | |
| DECONTAMINATION FACILITIES | | 6,840 | 0 | 1,370 | 8,210 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 12,540 | 0 | 2,510 | 15,050 | | |
| MOBILIZATION AND PREPATORY WORK | | 16,610 | 0 | 3,320 | 19,930 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | 60.00 EA | 32,700 | 0 | 6,540 | 39,240 | 654.00 | |
| 06 02 06 01 02 PHASE II, Soil Sample | 60.00 EA | 40,200 | 0 | 8,040 | 48,240 | 804.00 | |
| SURFACE SOIL | | 72,900 | 0 | 14,580 | 87,480 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 0 | 14,580 | 87,480 | | |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| | MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 0 | 14,580 | 87,480 | | |
| 06 03 | SITE WORK | | | | | | | |
| 06 03 05 | FENCING | | | | | | | |
| 06 03 05 01 | FENCING | | | | | | | |
| 06 03 05 01 01 | Temporary Fencing | 620.00 LF | 15,500 | 0 | 3,100 | 18,600 | 30.00 | |
| | FENCING | | 15,500 | 0 | 3,100 | 18,600 | | |
| | FENCING | | 15,500 | 0 | 3,100 | 18,600 | | |
| | SITE WORK | | 15,500 | 0 | 3,100 | 18,600 | | |
| 06 08 | SOLID WASTE COLLECT/CONTAINMENT | | | | | | | |
| 06 08 01 | EXCAVATION | | | | | | | |
| 06 08 01 03 | CONTAMINATED SOIL | | | | | | | |
| 06 08 01 03 01 | PHASE I, Excavate/Load PCB Soils | 230.00 CY | 492,700 | 0 | 123,310 | 616,010 | 2678.29 | |
| 06 08 01 03 02 | PHASE II,Excavate/Load PCB Soils | 110.00 CY | 238,690 | 0 | 59,740 | 298,430 | 2713.01 | |
| 06 08 01 03 03 | Post Removal | | 1,600 | 0 | 400 | 1,990 | | |
| 06 08 01 03 91 | Safety and Quality Assurance | 3.00 WK | 15,600 | 0 | 3,120 | 18,720 | 6240.00 | |
| | CONTAMINATED SOIL | | 748,580 | 0 | 186,570 | 935,150 | | |
| | EXCAVATION | | 748,580 | 0 | 186,570 | 935,150 | | |
| | SOLID WASTE COLLECT/CONTAINMENT | | 748,580 | 0 | 186,570 | 935,150 | | |
| 06 21 | DEMOBILIZATION | | | | | | | |
| 06 21 04 | DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 | TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 | PH I, Demob and take down | | 6,070 | 0 | 1,210 | 7,280 | | |
| 06 21 04 01 02 | PH II, Demob and Take down | | 6,070 | 0 | 1,210 | 7,280 | | |
| | TRANSPORTATION | | 12,130 | 0 | 2,430 | 14,560 | | |
| | DEMOB OF EQUIPMENT & PERSONNEL | | 12,130 | 0 | 2,430 | 14,560 | | |
| | DEMOBILIZATION | | 12,130 | 0 | 2,430 | 14,560 | | |

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT EOFFIN: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, EHPEMERAL POOL, OFF-SITE INCINERATION
** PROJECT OWNER SUMMARY - LEVEL 5 (Rounded to 10's) **

TIME 09:41:04



| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| REMEDIAL ACTION | | 865,720 | 0 | 210,000 | 1,075,720 | | |
| HANFORD: REMEDIATION | | 865,720 | 0 | 210,000 | 1,075,720 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | | |
| Ph I, Equip Mob, Detailed List | | 2,040 | 0 | 410 | 2,440 | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | | |
| Ph II, Equip Mob, Detailed List | | 2,040 | 0 | 410 | 2,440 | | |
| TRANSPORTATION | | 4,070 | 0 | 810 | 4,880 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,070 | 0 | 810 | 4,880 | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | | |
| Ph I, Office Trailers - setup | 100.00 HR | 2,850 | 0 | 570 | 3,420 | 34.20 | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | | |
| Ph II, Office Trailers - setup | 100.00 HR | 2,850 | 0 | 570 | 3,420 | 34.20 | |
| TRAILERS AND BUILDINGS | | 5,700 | 0 | 1,140 | 6,840 | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Ph I, Trailers - assbly/setup | 120.00 HR | 3,420 | 0 | 680 | 4,100 | 34.20 | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 HR | 3,420 | 0 | 680 | 4,100 | 34.20 | |
| DECONTAMINATION FACILITIES | | 6,840 | 0 | 1,370 | 8,210 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 12,540 | 0 | 2,510 | 15,050 | | |
| MOBILIZATION AND PREPATORY WORK | | 16,610 | 0 | 3,320 | 19,930 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 30,000 | 0 | 6,000 | 36,000 | 600.00 | 1 |
| 06 02 06 01 01 02 QA Report | | 2,700 | 0 | 540 | 3,240 | | 1 |
| PHASE I, Soil Sample | 60.00 EA | 32,700 | 0 | 6,540 | 39,240 | 654.00 | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 37,500 | 0 | 7,500 | 45,000 | 750.00 | 1 |
| 06 02 06 01 02 02 QA Report | | 2,700 | 0 | 540 | 3,240 | | 1 |
| PHASE II, Soil Sample | 60.00 EA | 40,200 | 0 | 8,040 | 48,240 | 804.00 | |
| SURFACE SOIL | | 72,900 | 0 | 14,580 | 87,480 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 0 | 14,580 | 87,480 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 0 | 14,580 | 87,480 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | | |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| 06 03 05 01 01 01 | Temporary Fencing - 6' Security | 620.00 LF | 15,500 | 0 | 3,100 | 18,600 | 30.00 | |
| | Temporary Fencing | 620.00 LF | 15,500 | 0 | 3,100 | 18,600 | 30.00 | |
| | FENCING | | 15,500 | 0 | 3,100 | 18,600 | | |
| | FENCING | | 15,500 | 0 | 3,100 | 18,600 | | |
| | SITE WORK | | 15,500 | 0 | 3,100 | 18,600 | | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | | |
| 06 08 01 03 01 01 | Excavate/Load PCB Soils | 230.00 CY | 930 | 0 | 370 | 1,300 | 5.64 | 2 |
| 06 08 01 03 01 02 | Transport PCB Soils - Arlington | 230.00 CY | 490,430 | 0 | 122,610 | 613,040 | 2665.38 | 2,3 |
| 06 08 01 03 01 03 | PPEquip, Modified Class D | 2.00 DAY | 1,340 | 0 | 330 | 1,670 | 837.07 | 1 |
| | PHASE I, Excavate/Load PCB Soils | 230.00 CY | 492,700 | 0 | 123,310 | 616,010 | 2678.29 | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | | |
| 06 08 01 03 02 01 | Excavate/Load PCB Soils | 110.00 CY | 440 | 0 | 180 | 620 | 5.64 | 1,2 |
| 06 08 01 03 02 02 | Transport PCB Soils - Arlington | 110.00 CY | 236,910 | 0 | 59,230 | 296,140 | 2692.16 | 2,3 |
| 06 08 01 03 02 03 | PPEquip, Modified Class D | 2.00 DAY | 1,340 | 0 | 330 | 1,670 | 837.07 | 1 |
| | PHASE II,Excavate/Load PCB Soils | 110.00 CY | 238,690 | 0 | 59,740 | 298,430 | 2713.01 | |
| 06 08 01 03 03 Post Removal | | | | | | | | |
| 06 08 01 03 03 01 | Excavate/Load Crew | 1.00 DAY | 930 | 0 | 230 | 1,160 | 1157.24 | 1 |
| 06 08 01 03 03 02 | PPEquip, Modified Class D | 1.00 DAY | 670 | 0 | 170 | 840 | 837.07 | 1 |
| | Post Removal | | 1,600 | 0 | 400 | 1,990 | | |
| 06 08 01 03 91 Safety and Quality Assurance | | | | | | | | |
| | Safety and Quality Assurance | 3.00 WK | 15,600 | 0 | 3,120 | 18,720 | 6240.00 | |
| | CONTAMINATED SOIL | | 748,580 | 0 | 186,570 | 935,150 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| EXCAVATION | | 748,580 | 0 | 186,570 | 935,150 | | |
| SOLID WASTE COLLECT/CONTAINMENT | | 748,580 | 0 | 186,570 | 935,150 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | | | | | | |
| PH I, Demob and take down | | 6,070 | 0 | 1,210 | 7,280 | | |
| 06 21 04 01 02 PH II, Demob and Take down | | | | | | | |
| PH II, Demob and Take down | | 6,070 | 0 | 1,210 | 7,280 | | |
| TRANSPORTATION | | 12,130 | 0 | 2,430 | 14,560 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 12,130 | 0 | 2,430 | 14,560 | | |
| DEMOBILIZATION | | 12,130 | 0 | 2,430 | 14,560 | | |
| REMEDIAL ACTION | | 865,720 | 0 | 210,000 | 1,075,720 | | |
| HANFORD: REMEDIATION | | 865,720 | 0 | 210,000 | 1,075,720 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | 2,040 | 0 | 0 | 0 | 0 | 0 | 2,040 | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | 2,040 | 0 | 0 | 0 | 0 | 0 | 2,040 | |
| TRANSPORTATION | | 4,070 | 0 | 0 | 0 | 0 | 0 | 4,070 | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,070 | 0 | 0 | 0 | 0 | 0 | 4,070 | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | 100.00 HR | 2,850 | 0 | 0 | 0 | 0 | 0 | 2,850 | 28.50 |
| 06 01 03 01 02 Ph II, Office Trailers - setup | 100.00 HR | 2,850 | 0 | 0 | 0 | 0 | 0 | 2,850 | 28.50 |
| TRAILERS AND BUILDINGS | | 5,700 | 0 | 0 | 0 | 0 | 0 | 5,700 | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | 120.00 HR | 3,420 | 0 | 0 | 0 | 0 | 0 | 3,420 | 28.50 |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | 120.00 HR | 3,420 | 0 | 0 | 0 | 0 | 0 | 3,420 | 28.50 |
| DECONTAMINATION FACILITIES | | 6,840 | 0 | 0 | 0 | 0 | 0 | 6,840 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 12,540 | 0 | 0 | 0 | 0 | 0 | 12,540 | |
| MOBILIZATION AND PREPATORY WORK | | 16,610 | 0 | 0 | 0 | 0 | 0 | 16,610 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | 60.00 EA | 32,700 | 0 | 0 | 0 | 0 | 0 | 32,700 | 545.00 |
| 06 02 06 01 02 PHASE II, Soil Sample | 60.00 EA | 40,200 | 0 | 0 | 0 | 0 | 0 | 40,200 | 670.00 |
| SURFACE SOIL | | 72,900 | 0 | 0 | 0 | 0 | 0 | 72,900 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 0 | 0 | 0 | 0 | 0 | 72,900 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 0 | 0 | 0 | 0 | 0 | 72,900 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | 620.00 LF | 15,500 | 0 | 0 | 0 | 0 | 0 | 15,500 | 25.00 |
| FENCING | | 15,500 | 0 | 0 | 0 | 0 | 0 | 15,500 | |
| FENCING | | 15,500 | 0 | 0 | 0 | 0 | 0 | 15,500 | |
| SITE WORK | | 15,500 | 0 | 0 | 0 | 0 | 0 | 15,500 | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | 230.00 CY | 492,700 | 0 | 0 | 0 | 0 | 0 | 492,700 | 2142.15 |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | 110.00 CY | 238,690 | 0 | 0 | 0 | 0 | 0 | 238,690 | 2169.93 |
| 06 08 01 03 03 Post Removal | | 1,600 | 0 | 0 | 0 | 0 | 0 | 1,600 | |
| 06 08 01 03 91 Safety and Quality Assurance | 3.00 WK | 15,600 | 0 | 0 | 0 | 0 | 0 | 15,600 | 5200.00 |
| CONTAMINATED SOIL | | 748,580 | 0 | 0 | 0 | 0 | 0 | 748,580 | |
| EXCAVATION | | 748,580 | 0 | 0 | 0 | 0 | 0 | 748,580 | |
| SOLID WASTE COLLECT/CONTAINMENT | | 748,580 | 0 | 0 | 0 | 0 | 0 | 748,580 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | 6,070 | 0 | 0 | 0 | 0 | 0 | 6,070 | |
| 06 21 04 01 02 PH II, Demob and Take down | | 6,070 | 0 | 0 | 0 | 0 | 0 | 6,070 | |
| TRANSPORTATION | | 12,130 | 0 | 0 | 0 | 0 | 0 | 12,130 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 12,130 | 0 | 0 | 0 | 0 | 0 | 12,130 | |
| DEMOBILIZATION | | 12,130 | 0 | 0 | 0 | 0 | 0 | 12,130 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| REMEDIAL ACTION | | 865,720 | 0 | 0 | 0 | 0 | 0 | 865,720 | |
| HANFORD: REMEDIATION | | 865,720 | 0 | 0 | 0 | 0 | 0 | 865,720 | |
| CONTINGENCY | | | | | | | | 210,000 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 1,075,720 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | | | | |
| Ph I, Equip Mob, Detailed List | | 2,040 | 0 | 0 | 0 | 0 | 0 | 2,040 | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | | | | |
| Ph II, Equip Mob, Detailed List | | 2,040 | 0 | 0 | 0 | 0 | 0 | 2,040 | |
| TRANSPORTATION | | 4,070 | 0 | 0 | 0 | 0 | 0 | 4,070 | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,070 | 0 | 0 | 0 | 0 | 0 | 4,070 | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | | | | |
| Ph I, Office Trailers - setup | 100.00 HR | 2,850 | 0 | 0 | 0 | 0 | 0 | 2,850 | 28.50 |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | | | | |
| Ph II, Office Trailers - setup | 100.00 HR | 2,850 | 0 | 0 | 0 | 0 | 0 | 2,850 | 28.50 |
| TRAILERS AND BUILDINGS | | 5,700 | 0 | 0 | 0 | 0 | 0 | 5,700 | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Ph I, Trailers - assbly/setup | 120.00 HR | 3,420 | 0 | 0 | 0 | 0 | 0 | 3,420 | 28.50 |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 HR | 3,420 | 0 | 0 | 0 | 0 | 0 | 3,420 | 28.50 |
| DECONTAMINATION FACILITIES | | 6,840 | 0 | 0 | 0 | 0 | 0 | 6,840 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 12,540 | 0 | 0 | 0 | 0 | 0 | 12,540 | |
| MOBILIZATION AND PREPATORY WORK | | 16,610 | 0 | 0 | 0 | 0 | 0 | 16,610 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 30,000 | 0 | 0 | 0 | 0 | 0 | 30,000 | 500.00 |
| 06 02 06 01 01 02 QA Report | | 2,700 | 0 | 0 | 0 | 0 | 0 | 2,700 | |
| PHASE I, Soil Sample | 60.00 EA | 32,700 | 0 | 0 | 0 | 0 | 0 | 32,700 | 545.00 |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 37,500 | 0 | 0 | 0 | 0 | 0 | 37,500 | 625.00 |
| 06 02 06 01 02 02 QA Report | | 2,700 | 0 | 0 | 0 | 0 | 0 | 2,700 | |
| PHASE II, Soil Sample | 60.00 EA | 40,200 | 0 | 0 | 0 | 0 | 0 | 40,200 | 670.00 |
| SURFACE SOIL | | 72,900 | 0 | 0 | 0 | 0 | 0 | 72,900 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 0 | 0 | 0 | 0 | 0 | 72,900 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 0 | 0 | 0 | 0 | 0 | 72,900 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | | | | |

| | | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| 06 03 05 01 01 01 | Temporary Fencing - 6' Security | 620.00 LF | 15,500 | 0 | 0 | 0 | 0 | 0 | 15,500 | 25.00 |
| | Temporary Fencing | 620.00 LF | 15,500 | 0 | 0 | 0 | 0 | 0 | 15,500 | 25.00 |
| | FENCING | | 15,500 | 0 | 0 | 0 | 0 | 0 | 15,500 | |
| | FENCING | | 15,500 | 0 | 0 | 0 | 0 | 0 | 15,500 | |
| | SITE WORK | | 15,500 | 0 | 0 | 0 | 0 | 0 | 15,500 | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | | | | |
| 06 08 01 03 01 01 | Excavate/Load PCB Soils | 230.00 CY | 930 | 0 | 0 | 0 | 0 | 0 | 930 | 4.03 |
| 06 08 01 03 01 02 | Transport PCB Soils - Arlington | 230.00 CY | 490,430 | 0 | 0 | 0 | 0 | 0 | 490,430 | 2132.30 |
| 06 08 01 03 01 03 | PPEquip, Modified Class D | 2.00 DAY | 1,340 | 0 | 0 | 0 | 0 | 0 | 1,340 | 669.66 |
| | PHASE I, Excavate/Load PCB Soils | 230.00 CY | 492,700 | 0 | 0 | 0 | 0 | 0 | 492,700 | 2142.15 |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | | | | |
| 06 08 01 03 02 01 | Excavate/Load PCB Soils | 110.00 CY | 440 | 0 | 0 | 0 | 0 | 0 | 440 | 4.03 |
| 06 08 01 03 02 02 | Transport PCB Soils - Arlington | 110.00 CY | 236,910 | 0 | 0 | 0 | 0 | 0 | 236,910 | 2153.73 |
| 06 08 01 03 02 03 | PPEquip, Modified Class D | 2.00 DAY | 1,340 | 0 | 0 | 0 | 0 | 0 | 1,340 | 669.66 |
| | PHASE II,Excavate/Load PCB Soils | 110.00 CY | 238,690 | 0 | 0 | 0 | 0 | 0 | 238,690 | 2169.93 |
| 06 08 01 03 03 Post Removal | | | | | | | | | | |
| 06 08 01 03 03 01 | Excavate/Load Crew | 1.00 DAY | 930 | 0 | 0 | 0 | 0 | 0 | 930 | 925.80 |
| 06 08 01 03 03 02 | PPEquip, Modified Class D | 1.00 DAY | 670 | 0 | 0 | 0 | 0 | 0 | 670 | 669.66 |
| | Post Removal | | 1,600 | 0 | 0 | 0 | 0 | 0 | 1,600 | |
| 06 08 01 03 91 Safety and Quality Assurance | | | | | | | | | | |
| | Safety and Quality Assurance | 3.00 WK | 15,600 | 0 | 0 | 0 | 0 | 0 | 15,600 | 5200.00 |
| | CONTAMINATED SOIL | | 748,580 | 0 | 0 | 0 | 0 | 0 | 748,580 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| EXCAVATION | | 748,580 | 0 | 0 | 0 | 0 | 0 | 748,580 | |
| SOLID WASTE COLLECT/CONTAINMENT | | 748,580 | 0 | 0 | 0 | 0 | 0 | 748,580 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | | | | | | | | |
| PH I, Demob and take down | | 6,070 | 0 | 0 | 0 | 0 | 0 | 6,070 | |
| 06 21 04 01 02 PH II, Demob and Take down | | | | | | | | | |
| PH II, Demob and Take down | | 6,070 | 0 | 0 | 0 | 0 | 0 | 6,070 | |
| TRANSPORTATION | | 12,130 | 0 | 0 | 0 | 0 | 0 | 12,130 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 12,130 | 0 | 0 | 0 | 0 | 0 | 12,130 | |
| DEMOBILIZATION | | 12,130 | 0 | 0 | 0 | 0 | 0 | 12,130 | |
| REMEDIAL ACTION | | 865,720 | 0 | 0 | 0 | 0 | 0 | 865,720 | |
| HANFORD: REMEDIATION | | 865,720 | 0 | 0 | 0 | 0 | 0 | 865,720 | |
| CONTINGENCY | | | | | | | | 210,000 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 1,075,720 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION AND PREPATORY WORK
06 01 01. MOB OF EQUIPMENT & PERSONNEL
06 01 01 1. TRANSPORTATION
06 01 01 1 01-. Ph I, Equip Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USR | <01505 3235 > | Mob, FEnd Ldr, wheel 1-1/2-3 cy Atriculated Fr, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR | <01505 6115 > | Mob, Dozer, Crawler, 50-100 hp w/blade, incl set up 100 mi radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR | <01505 7131 > | Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 150.00 |
| USR | <01505 8921 > | Mob, Decontamination Trailer w/25,000 GVW Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 135.00 |
| USR | <01505 1101 > | Mob - Field Office Trailer | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| | | Ph I, Equip Mob, Detailed List | | | | 0 | 0 | 2,035 | 0 | 0 | 2,035 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 01 1 02-. Ph II, Equip Mob, Detailed List<br>This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed. | | | | | | | | | |
| USR <01505 3235 > Mob, FEnd Ldr, wheel 1-1/2-3 cy Atriculated Fr, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR <01505 6115 > Mob, Dozer, Crawler, 50-100 hp w/blade, incl set up 100 mi radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR <01505 7131 > Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 150.00 |
| USR <01505 8921 > Mob, Decontamination Trailer w/25,000 GVW Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 135.00 |
| USR <01505 1101 > Mob - Field Office Trailer | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| Ph II, Equip Mob, Detailed List | | | 0 | 0 | 2,035 | 0 | 0 | 2,035 | |
| TRANSPORTATION | | | 0 | 0 | 4,070 | 0 | 0 | 4,070 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 03. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01. TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01. Ph I, Office Trailers - setup | | | | | | | | | |
| Allow 100mhrs for setup of contractor's trailer and equipment and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Ph I, Office Trailers - setup | 100.00 HR | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| 06 01 03 01 02. Ph II, Office Trailers - setup | | | | | | | | | |
| Allow 100mhrs for setup of contractor's trailer and equipment and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Ph II, Office Trailers - setup | 100.00 HR | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| TRAILERS AND BUILDINGS | | | 0 | 5,000 | 500 | 200 | 0 | 5,700 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 03 02. DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 03 02 01. Personnel Decon Facilities | | | | | | | | | |
| Personnel Decon Facilities | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 01 03 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | |
| Equip/Vehicle Decon Facilities | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 01 03 02 03. Ph I, Trailers - assbly/setup | | | | | | | | | |
| Allow 100mhrs for setup of decontaminatio trailer and equipment and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Ph I, Trailers - assbly/setup | 120.00 HR | | 0 | 3,000 | 300 | 120 | 0 | 3,420 | 28.50 |
| 06 01 03 02 04. Ph II, Trailers - assbly/setup | | | | | | | | | |
| Allow 100mhrs for setup of decontaminatio trailer and equipment and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 HR | | 0 | 3,000 | 300 | 120 | 0 | 3,420 | 28.50 |
| DECONTAMINATION FACILITIES | | | 0 | 6,000 | 600 | 240 | 0 | 6,840 | |

06 02. MONITOR, SAMPLE, TEST, ANALYSIS

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 06. SAMPLING SOIL, SED & SOLID WASTE
06 02 06 01. SURFACE SOIL
06 02 06 01 01. PHASE I, Soil Sample
After the top 12" of soil is removed, soil samples will be taken.

06 02 06 01 01 01. Soil Sampling
Sample on 15'x15' grid (50 samples) with analysis at off site lab for BEHP only, with 14-day turnaround. Method 8270. Add 10 QA samples.

| | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 30,000 | 30,000 | 500.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE I, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 32,700 | 32,700 | 545.00 |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02 06 01 02. PHASE II, Soil Sample<br>Another set of soil samples will be taken after the next 6" soil layer is excavated. | | | | | | | | | |
| 06 02 06 01 02 01. Soil Sampling<br>Same as Phase I, except with 7-day turnaround, add 25%. | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 37,500 | 37,500 | 625.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE II, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 40,200 | 40,200 | 670.00 |
| SURFACE SOIL | | | 0 | 0 | 0 | 0 | 72,900 | 72,900 | |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03. SITE WORK | | | | | | | | | | | |
| 06 03 05. FENCING | | | | | | | | | | | |
| 06 03 05 01. FENCING | | | | | | | | | | | |
| 06 03 05 01 01. Temporary Fencing | | | | | | | | | | | |
| 06 03 05 01 01 01. Temporary Fencing - 6' Security<br>A 6' Security fence will be required during the duration of the cleanup activities around the work site. Cost taken from recent bid quotes. "Other" cost for removal. | | | | | | | | | | | |
| Temporary Fencing - 6' Security | 620.00 | LF | | | 0 | 3,100 | 1,550 | 7,750 | 3,100 | 15,500 | 25.00 |
| Temporary Fencing | 620.00 | LF | | | 0 | 3,100 | 1,550 | 7,750 | 3,100 | 15,500 | 25.00 |
| FENCING | | | | | 0 | 3,100 | 1,550 | 7,750 | 3,100 | 15,500 | |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08. SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | | | | |
| 06 08 01. EXCAVATION | | | | | | | | | | | | |
| 06 08 01 03. CONTAMINATED SOIL | | | | | | | | | | | | |
| 06 08 01 03 01. PHASE I, Excavate/Load PCB Soils | | | | | | | | | | | | |
| 06 08 01 03 01 01. Excavate/Load PCB Soils | | | | | | | | | | | | |
| USR | <02220 0000 > Excavate top 12-inches of soil | | | | | 0.06 | 1.59 | 0.54 | 0.00 | 0.00 | 2.13 | |
| | | 230.00 | CY | XXQNA | 28.75 | 14 | 365 | 125 | 0 | 0 | 490 | 2.13 |
| USR | <02220 0000 > Load excavated/stockpiled soil load in 20-ton ROLL OFF units for use on trucks that are DOT approved for hazardeous waste hauler. Assume 3,100lb/bcy | | | | | 0.03 | 0.94 | 0.95 | 0.00 | 0.00 | 1.90 | |
| | | 230.00 | CY | XXQMG | 28.75 | 8 | 217 | 219 | 0 | 0 | 436 | 1.90 |
| | Excavate/Load PCB Soils | 230.00 | CY | | | 22 | 582 | 344 | 0 | 0 | 926 | 4.03 |
| 06 08 01 03 01 02. Transport PCB Soils - Arlington | | | | | | | | | | | | |
| USR | <02220 0000 > Transport soil to Port Arthur TX 230 cy x 3,100lb/cy / 2000lb/ton = 356.5 tons @ 20 tons/truck = 17.83 trucks use 18 trucks | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 7000.00 | 7000.00 | |
| | | 18.00 | TRK | | 0.00 | 0 | 0 | 0 | 0 | 126,000 | 126,000 | 7000.00 |
| USR | <02220 0000 > Incinerator processing fee | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 0.50 | |
| | | 713000 | LB | | 0.00 | 0 | 0 | 0 | 0 | 356,500 | 356,500 | 0.50 |
| USR | <02220 0000 > Texas state environmental tax | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 20.00 | |
| | | 356.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 7,130 | 7,130 | 20.00 |
| USR | <02220 0000 > Soil profile fee | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 800.00 | 800.00 | |
| | | 1.00 | EA | | 0.00 | 0 | 0 | 0 | 0 | 800 | 800 | 800.00 |
| | Transport PCB Soils - Arlington | 230.00 | CY | | | 0 | 0 | 0 | 0 | 490,430 | 490,430 | 2132.30 |
| 06 08 01 03 01 03. PPEquip, Modified Class D | | | | | | | | | | | | |
| M HTW | <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | | 8.00 | EA | N/A | 0.00 | 0 | 0 | 92 | 0 | 0 | 92 | 11.50 |
| M HTW | <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 60 | 0 | 60 | 7.55 |
| M HTW | <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | | 8.00 | PR | N/A | 0.00 | 0 | 0 | 18 | 0 | 0 | 18 | 2.30 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HTW | <01951 5726 > Half-Mask Air Purifying Respirators | 8.00 | EA | N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 19.94<br>160 | 0.00<br>0 | 19.94<br>160 | 19.94 |
| USR | <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | 2.00 | DAY | ULABA | 0.13 | 10.00<br>20 | 234.30<br>469 | 1.45<br>3 | 34.83<br>70 | 0.00<br>0 | 270.58<br>541 | 270.58 |
| M HTW | <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | 2.00 | DAY | N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 26.95<br>54 | 0.00<br>0 | 26.95<br>54 | 26.95 |
| HTW | <01951 5723 > Cartridges, Respirator | 16.00 | EA | N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 25.87<br>414 | 0.00<br>0 | 25.87<br>414 | 25.87 |
| | PPEquip, Modified Class D | 2.00 | DAY | | | 20 | 469 | 113 | 757 | 0 | 1,339 | 669.66 |
| | PHASE I, Excavate/Load PCB Soils | 230.00 | CY | | | 42 | 1,051 | 457 | 757 | 490,430 | 492,695 | 2142.15 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 02. PHASE II,Excavate/Load PCB Soils | | | | | | | | | | | | |
| 06 08 01 03 02 01. Excavate/Load PCB Soils | | | | | | | | | | | | |
| USR | <02220 0000 > Excavate next 6-inches of soil | 110.00 | CY | XXQNA | 28.75 | 0.06<br>7 | 1.59<br>175 | 0.54<br>60 | 0.00<br>0 | 0.00<br>0 | 2.13<br>234 | 2.13 |
| USR | <02220 0000 > Load excavated/stockpiled soil load in 20-ton roll off units and dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy | 110.00 | CY | XXQMG | 28.75 | 0.03<br>4 | 0.94<br>104 | 0.95<br>105 | 0.00<br>0 | 0.00<br>0 | 1.90<br>209 | 1.90 |
| | Excavate/Load PCB Soils | 110.00 | CY | | | 11 | 278 | 164 | 0 | 0 | 443 | 4.03 |
| 06 08 01 03 02 02. Transport PCB Soils - Arlington | | | | | | | | | | | | |
| USR | <02220 0000 > Transport soil to Port Arthur TX 110 cy x 3,100lb/cy / 2000lb/ton = 170.5 tons @ 20 tons/truck = 8.5 trucks use 9 trucks | 9.00 | TRK | | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 7000.00<br>63,000 | 7000.00<br>63,000 | 7000.00 |
| USR | <02220 0000 > Incineration fee | 341000 | LB | | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 0.50<br>170,500 | 0.50<br>170,500 | 0.50 |
| USR | <02220 0000 > Texas state environmental tax | 170.50 | TON | | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 20.00<br>3,410 | 20.00<br>3,410 | 20.00 |
| | Transport PCB Soils - Arlington | 110.00 | CY | | | 0 | 0 | 0 | 0 | 236,910 | 236,910 | 2153.73 |
| 06 08 01 03 02 03. PPEquip, Modified Class D | | | | | | | | | | | | |
| M HTW | <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | 8.00 | EA | N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 11.50<br>92 | 0.00<br>0 | 0.00<br>0 | 11.50<br>92 | 11.50 |
| M HTW | <01951 5204 > Coveralls, Tyvek | 8.00 | EA | N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 7.55<br>60 | 0.00<br>0 | 7.55<br>60 | 7.55 |
| M HTW | <01951 5501 > Butyl, Medium Weight, Gloves | 8.00 | PR | N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 2.30<br>18 | 0.00<br>0 | 0.00<br>0 | 2.30<br>18 | 2.30 |
| HTW | <01951 5726 > Half-Mask Air Purifying Respirators | 8.00 | EA | N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 19.94<br>160 | 0.00<br>0 | 19.94<br>160 | 19.94 |
| USR | <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | 2.00 | DAY | ULABA | 0.13 | 10.00<br>20 | 234.30<br>469 | 1.45<br>3 | 34.83<br>70 | 0.00<br>0 | 270.58<br>541 | 270.58 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M HTW <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | 2.00 | DAY | N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 26.95<br>54 | 0.00<br>0 | 26.95<br>54 | 26.95 |
| HTW <01951 5723 > Cartridges, Respirator | 16.00 | EA | N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 0.00<br>0 | 25.87<br>414 | 0.00<br>0 | 25.87<br>414 | 25.87 |
| PPEquip, Modified Class D | 2.00 | DAY | | | 20 | 469 | 113 | 757 | 0 | 1,339 | 669.66 |
| PHASE II,Excavate/Load PCB Soils | 110.00 | CY | | | 31 | 747 | 278 | 757 | 236,910 | 238,692 | 2169.93 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 03. Post Removal | | | | | | | | | | |
| 06 08 01 03 03 01. Excavate/Load Crew | | | | | | | | | | |
| USR <02220 0000 > | Excavation crew | | | 14.00 | 365.22 | 124.54 | 0.00 | 0.00 | 489.76 | |
| | | 1.00 DAY XXQNA | 0.13 | 14 | 365 | 125 | 0 | 0 | 490 | 489.76 |
| USR <02220 0000 > | Load crew<br>load in 28-ton dump trucks - DOT approved hazardeous waste hauler.<br>assume 3,100lb/bcy | | | 8.00 | 216.72 | 219.31 | 0.00 | 0.00 | 436.03 | |
| | | 1.00 DAY XXQMG | 0.13 | 8 | 217 | 219 | 0 | 0 | 436 | 436.03 |
| | Excavate/Load Crew | 1.00 DAY | | 22 | 582 | 344 | 0 | 0 | 926 | 925.80 |
| 06 08 01 03 03 02. PPEquip, Modified Class D | | | | | | | | | | |
| M HTW <01951 5202 > | Boot Covers, Tyvek (Bag Of 10Pr) | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | | 4.00 EA N/A | 0.00 | 0 | 0 | 46 | 0 | 0 | 46 | 11.50 |
| M HTW <01951 5204 > | Coveralls, Tyvek | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | | 4.00 EA N/A | 0.00 | 0 | 0 | 0 | 30 | 0 | 30 | 7.55 |
| M HTW <01951 5501 > | Butyl, Medium Weight, Gloves | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | | 4.00 PR N/A | 0.00 | 0 | 0 | 9 | 0 | 0 | 9 | 2.30 |
| HTW <01951 5726 > | Half-Mask Air Purifying Respirators | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| | | 4.00 EA N/A | 0.00 | 0 | 0 | 0 | 80 | 0 | 80 | 19.94 |
| USR <01957 3105 > | Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| | | 1.00 DAY ULABA | 0.13 | 10 | 234 | 1 | 35 | 0 | 271 | 270.58 |
| M HTW <01957 4301 > | 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | | 1.00 DAY N/A | 0.00 | 0 | 0 | 0 | 27 | 0 | 27 | 26.95 |
| HTW <01951 5723 > | Cartridges, Respirator | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | | 8.00 EA N/A | 0.00 | 0 | 0 | 0 | 207 | 0 | 207 | 25.87 |
| | PPEquip, Modified Class D | 1.00 DAY | | 10 | 234 | 57 | 379 | 0 | 670 | 669.66 |
| | Post Removal | | | 32 | 816 | 401 | 379 | 0 | 1,595 | |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 91. Safety and Quality Assurance | | | | | | | | | |
| Safety/QA crew: | | | | | | | | | |
| WHC HPT: $50/hr x 40hrs = $2,000 | | | | | | | | | |
| Safety: $70/hr x 40hrs = $2,800 | | | | | | | | | |
| Special Assistance to QA: $50/hr x 8 hrs = $ 400 | | | | | | | | | |
| Total cost/week $5,200 | | | | | | | | | |
| Safety and Quality Assurance | 3.00 WK | | 0 | 15,600 | 0 | 0 | 0 | 15,600 | 5200.00 |
| CONTAMINATED SOIL | | | 105 | 18,214 | 1,135 | 1,894 | 727,340 | 748,583 | |

| 06 21. DEMOBILIZATION | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 21. DEMOBILIZATION | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01. PH I, Demob and take down | | | | | | | | | |
| Allow 75% of mobilization and setup costs. | | | | | | | | | |
| PH I, Demob and take down | | | 0 | 4,125 | 1,940 | 0 | 0 | 6,065 | |
| 06 21 04 01 02. PH II, Demob and Take down | | | | | | | | | |
| Allow 75% of mobilization and setup costs. | | | | | | | | | |
| PH II, Demob and Take down | | | 0 | 4,125 | 1,940 | 0 | 0 | 6,065 | |
| TRANSPORTATION | | | 0 | 8,250 | 3,880 | 0 | 0 | 12,130 | |
| HANFORD: REMEDIATION | | | 105 | 40,564 | 11,735 | 10,084 | 803,340 | 865,723 | |

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | ULABA | 1 B-laborer + Small Tools | | | PROD = 100% | | | | CREW HOURS = | 80 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.83 | 0.25 | 5.96 | | | 5.96 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.33 | 1.00 | 23.33 | | | 23.33 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 1.25 | 29.29 | 0.13 | 0.18 | 29.47 |
| | XXQMG | 1 X-eqoprmed + 1 Front End Ldr, 2-1/2 Cy, Wheel | | | PROD = 100% | | | | CREW HOURS = | 40 |
| MIL | L40CA004 E | LDR,FE,WH, 2-1/2CY, ARTIC, 936E | 1.00 | HR | 27.41 | | | 1.00 | 27.41 | 27.41 |
| MIL | X-EQOPRMEDL | Outside Equip. Op. Medium | 1.00 | HR | 27.09 | 1.00 | 27.09 | | | 27.09 |
| | TOTAL | | | | | 1.00 | 27.09 | 1.00 | 27.41 | 54.50 |
| | XXQNA | 1 X-eqoprmed + 1 Dozer, Cat D-38, 65 Hp | | | PROD = 100% | | | | CREW HOURS = | 40 |
| MIL | T10CA001 E | BLADE,POWER ANGLE TILT,FOR D3 | 1.00 | HR | 1.87 | | | 1.00 | 1.87 | 1.87 |
| MIL | T15CA003 E | DOZER,CWLR,D-3C,PS,(ADD BLADE) | 1.00 | HR | 13.70 | | | 1.00 | 13.70 | 13.70 |
| MIL | X-LABORER L | Outside Laborer | 0.50 | HR | 23.33 | 0.50 | 11.67 | | | 11.67 |
| MIL | X-EQOPRMEDL | Outside Equip. Op. Medium | 1.00 | HR | 27.09 | 1.00 | 27.09 | | | 27.09 |
| MIL | X-EQOPRMEDF | Outside Equip. Op. Medium | 0.25 | HR | 27.59 | 0.25 | 6.90 | | | 6.90 |
| | TOTAL | | | | | 1.75 | 45.65 | 2.00 | 15.57 | 61.22 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | **** TOTAL **** | |
| MIL | B-LABORER | Laborer/Helper | 23.33 | 0.0% | 0.0% | 0.00 | 0.00 | 23.33 | HR | 10/15/92 | 22.36 | 100 |
| MIL | X-EQOPRMED | Outside Equipment Oper. Medium | 27.09 | 0.0% | 0.0% | 0.00 | 0.00 | 27.09 | HR | 10/15/92 | 25.84 | 89 |
| MIL | X-LABORER | Outside Laborer | 23.33 | 0.0% | 0.0% | 0.00 | 0.00 | 23.33 | HR | 10/15/92 | 22.36 | 20 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | L40CA004 | LDR,FE,WH, 2-1/2CY, ARTIC, 936E | 8.03 | 2.79 | 3.99 | 1.6 | 8.34 | 2.26 | 0.34 | 27.41 | HR | 40 |
| MIL | T10CA001 | BLADE,POWER ANGLE TILT,FOR D3 | 0.75 | 0.22 | | 0.0 | 0.82 | | | 1.87 | HR | 40 |
| MIL | T15CA003 | DOZER,CWLR,D-3C,PS,(ADD BLADE) | 3.51 | 1.14 | 2.14 | 0.7 | 6.14 | | | 13.70 | HR | 40 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 10 |

THIS PAGE INTENTIONALLY
LEFT BLANK

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 5
Table of Contents Levels : 6

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |
| | Print Unit Cost Row : | Y | | | | | | | |
| | Print Page Footer : | Y | | | | | | | |
| | Show Cost Codes : | Y | | | | | | | |
| COLUMNS OPTIONS | Print Crew Id : | Y | | | | | | | |
| | Crew Output : | Y | | | | | | | |
| | Unit Cost : | Y | | | | | | | |
| UPB TITLES | No. of Levels to Print : | 0 | | | | | | | |
| | Bracket Titles With : | - : | | | | | | | |
| | Include titles Notes : | Y | | | | | | | |

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y
Link Listing : N

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Detail : | Y | | | | | | | | | |
| Project : | N | Y | Y | | N | N | N | N | Y | Y |
| Contractor : | N | N | | N | N | N | N | N | N | N |
| Division : | N | N | N | Y | N | N | N | N | N | N |
| System : | N | N | N | Y | N | N | N | N | N | N |
| 2nd View : | N | | | | | | | | | |
| Crew : | Y | | | Y | N | N | N | N | N | N |
| Labor : | Y | | | | | | | | | |
| Equipment : | Y | | | | | | | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTION | | | | | | |
| S & A | P | 0.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| 06 02 06 01 01 02 QA Report | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 02 06 01 02 02 QA Report | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 03 SITE WORK | | | | | | |
| 06 03 05 FENCING | | | | | | |
| 06 03 05 01 FENCING | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | |
| 06 03 05 01 01 01 Temporary Fencing - 6' Security | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | |
| 06 08 01 EXCAVATION | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | |
| 06 08 01 03 01 01 Excavate/Load PCB Soils | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 40.00 | | | | |
| 06 08 01 03 01 02 Transport PCB Soils - Arlington | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 01 03 PPEquip, Modified Class D | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | |
| 06 08 01 03 02 01 Excavate/Load PCB Soils | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 40.00 | | | | |
| 06 08 01 03 02 02 Transport PCB Soils - Arlington | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 02 03 PPEquip, Modified Class D | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 08 01 03 | 03 Post Removal | | | | | | |
| 06 08 01 03 | 03 01 Excavate/Load Crew | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 | 03 02 PPEquip, Modified Class D | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 08 01 03 | 91 Safety and Quality Assurance | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 | 01 PH I, Demob and take down | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 21 04 01 | 02 PH II, Demob and Take down | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

# UN-1100-6
# OFFSITE INCINERATION

9 3 1 2 3 2 1 6 7 2

THIS PAGE INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
UN-1100-6 (BEHP's)
OFF-SITE INCINERATION

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/09/92

M C A C E S  G O L D  E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 OU Baseline

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In the project breakdown, the first level, "06", represent Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This project file covers the cleanup of the discolored soils, defined as the UN-1100-6 sub-operable unit. This option will use Off-site Incineration to clean up the soils. Assume BEHP soils to be loaded into 20-Ton roll-off units for transport to Texas for incineration.

1. Normal Contingency for this level of estimate is 20-30%.

2. Using 50% Contingency for Setup, as it is undefined.

3. Using higher Contingency for quantitized ground soil activities, as quantities are not definite, and costs and location of fill and top soil have been assumed.

THIS PAGE INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 5.....1
PROJECT OWNER SUMMARY - LEVEL 6.....3
PROJECT INDIRECT SUMMARY - LEVEL 5.....6
PROJECT INDIRECT SUMMARY - LEVEL 6.....9

DETAILED ESTIMATE DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION AND PREPATORY WORK
01. MOB OF EQUIPMENT & PERSONNEL
1. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
03. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Assembly and Setup
01. Assembly and Setup.....3
02. DECONTAMINATION FACILITIES.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
06. SAMPLING SOIL, SED & SOLID WASTE
01. SURFACE SOIL
01. PHASE I, Soil Sample
01. Soil Sampling.....4
02. QA Report.....4
02. PHASE II, Soil Sample
01. Soil Sampling.....5
02. QA Report.....5
03. SITE WORK
05. FENCING
01. FENCING
01. Temporary fencing
01. Temporary Fencing - 6' Security.....6
08. SOLID WASTE COLLECT/CONTAINMENT
01. EXCAVATION
03. CONTAMINATED SOIL
01. PHASE I, Excavate/Load PCB Soils
01. Excavate/Load PCB Soils.....7
02. Transport PCB Soils - Arlington.....7
03. PPEquip, Modified Class D.....7
02. PHASE II,Excavate/Load PCB Soils
01. Excavate/Load PCB Soils.....9
02. Transport PCB Soils - Arlington.....9
03. PPEquip, Modified Class D.....9
03. Post Removal
01. Excavate/Load Crew.....11
02. PPEquip, Modified Class D.....11
91. Safety and Quality Assurance.....12
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. Demobilization

---

DETAILED ESTIMATE DETAIL PAGE

01. Demobilization - Equipment.....13

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | 6,020 | 900 | 1,380 | 8,300 | | 1 |
| TRANSPORTATION | | 6,020 | 900 | 1,380 | 8,300 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 6,020 | 900 | 1,380 | 8,300 | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 03 01 01 Assembly and Setup | | 3,780 | 570 | 2,170 | 6,520 | | 2 |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,170 | 6,520 | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 3,780 | 570 | 2,170 | 6,520 | | |
| MOBILIZATION AND PREPATORY WORK | | 9,800 | 1,470 | 3,560 | 14,830 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | 60.00 EA | 43,380 | 6,510 | 9,980 | 59,870 | 997.83 | |
| 06 02 06 01 02 PHASE II, Soil Sample | 60.00 EA | 53,330 | 8,000 | 12,270 | 73,600 | 1226.69 | |
| SURFACE SOIL | | 96,720 | 14,510 | 22,250 | 133,470 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 96,720 | 14,510 | 22,250 | 133,470 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 96,720 | 14,510 | 22,250 | 133,470 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 03 05 01 FENCING | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | 500.00 LF | 16,580 | 2,490 | 3,810 | 22,890 | 45.77 | |
| FENCING | | 16,580 | 2,490 | 3,810 | 22,890 | | |
| FENCING | | 16,580 | 2,490 | 3,810 | 22,890 | | |
| SITE WORK | | 16,580 | 2,490 | 3,810 | 22,890 | | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | 290.00 CY | 828,060 | 124,210 | 238,330 | 1,190,600 | 4105.51 | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | 150.00 CY | 428,660 | 64,300 | 122,870 | 615,820 | 4105.47 | |
| 06 08 01 03 03 Post Removal | | 2,120 | 320 | 610 | 3,040 | | |
| 06 08 01 03 91 Safety and Quality Assurance | 3.00 WK | 20,700 | 3,100 | 4,760 | 28,560 | 9520.58 | 1 |
| CONTAMINATED SOIL | | 1,279,530 | 191,930 | 366,570 | 1,838,020 | | |
| EXCAVATION | | 1,279,530 | 191,930 | 366,570 | 1,838,020 | | |
| SOLID WASTE COLLECT/CONTAINMENT | | 1,279,530 | 191,930 | 366,570 | 1,838,020 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 Demobilization | | 4,480 | 670 | 1,030 | 6,180 | | |
| TRANSPORTATION | | 4,480 | 670 | 1,030 | 6,180 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 4,480 | 670 | 1,030 | 6,180 | | |
| DEMOBILIZATION | | 4,480 | 670 | 1,030 | 6,180 | | |
| REMEDIAL ACTION | | 1,407,100 | 211,070 | 397,220 | 2,015,390 | | |
| HANFORD: REMEDIATION | | 1,407,100 | 211,070 | 397,220 | 2,015,390 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 6,020 | 900 | 1,380 | 8,300 | | 1 |
| TRANSPORTATION | | 6,020 | 900 | 1,380 | 8,300 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 6,020 | 900 | 1,380 | 8,300 | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 03 01 01 Assembly and Setup | | | | | | | |
| 06 01 03 01 01 01 Assembly and Setup | 100.00 HR | 3,780 | 570 | 2,170 | 6,520 | 65.23 | 2 |
| Assembly and Setup | | 3,780 | 570 | 2,170 | 6,520 | | 2 |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,170 | 6,520 | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 3,780 | 570 | 2,170 | 6,520 | | |
| MOBILIZATION AND PREPATORY WORK | | 9,800 | 1,470 | 3,560 | 14,830 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 39,800 | 5,970 | 9,150 | 54,930 | 915.44 | 1 |
| 06 02 06 01 01 02 QA Report | | 3,580 | 540 | 820 | 4,940 | | 1 |
| PHASE I, Soil Sample | 60.00 EA | 43,380 | 6,510 | 9,980 | 59,870 | 997.83 | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 49,750 | 7,460 | 11,440 | 68,660 | 1144.30 | 1 |
| 06 02 06 01 02 02 QA Report | | 3,580 | 540 | 820 | 4,940 | | 1 |
| PHASE II, Soil Sample | 60.00 EA | 53,330 | 8,000 | 12,270 | 73,600 | 1226.69 | |
| SURFACE SOIL | | 96,720 | 14,510 | 22,250 | 133,470 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 96,720 | 14,510 | 22,250 | 133,470 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 96,720 | 14,510 | 22,250 | 133,470 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | | |
| 06 03 05 01 01 01 Temporary Fencing - 6' Security | 500.00 LF | 16,580 | 2,490 | 3,810 | 22,890 | 45.77 | 1 |
| Temporary Fencing | 500.00 LF | 16,580 | 2,490 | 3,810 | 22,890 | 45.77 | |
| FENCING | | 16,580 | 2,490 | 3,810 | 22,890 | | |
| FENCING | | 16,580 | 2,490 | 3,810 | 22,890 | | |
| SITE WORK | | 16,580 | 2,490 | 3,810 | 22,890 | | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | |
| 06 08 01 03 01 01 Excavate/Load PCB Soils | 290.00 CY | 1,550 | 230 | 710 | 2,490 | 8.60 | 2 |
| 06 08 01 03 01 02 Transport PCB Soils - Arlington | 290.00 CY | 822,950 | 123,440 | 236,600 | 1,183,000 | 4079.30 | 2,3 |
| 06 08 01 03 01 03 PPEquip, Modified Class D | 2.00 DAY | 3,550 | 530 | 1,020 | 5,110 | 2554.30 | 1 |
| PHASE I, Excavate/Load PCB Soils | 290.00 CY | 828,060 | 124,210 | 238,330 | 1,190,600 | 4105.51 | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | |
| 06 08 01 03 02 01 Excavate/Load PCB Soils | 150.00 CY | 800 | 120 | 370 | 1,290 | 8.60 | 1,2 |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 02 02 | Transport PCB Soils - Arlington | 150.00 CY | 426,080 | 63,910 | 122,500 | 612,490 | 4083.25 | 2,3 |
| 06 08 01 03 02 03 | PPEquip, Modified Class D | 2.00 DAY | 1,780 | 270 | 0 | 2,040 | 1021.72 | 1 |
| | PHASE II,Excavate/Load PCB Soils | 150.00 CY | 428,660 | 64,300 | 122,870 | 615,820 | 4105.47 | |
| 06 08 01 03 03 | Post Removal | | | | | | | |
| 06 08 01 03 03 01 | Excavate/Load Crew | 1.00 DAY | 1,230 | 180 | 350 | 1,770 | 1765.65 | 1 |
| 06 08 01 03 03 02 | PPEquip, Modified Class D | 1.00 DAY | 890 | 130 | 260 | 1,280 | 1277.15 | 1 |
| | Post Removal | | 2,120 | 320 | 610 | 3,040 | | |
| 06 08 01 03 91 | Safety and Quality Assurance | | | | | | | |
| | Safety and Quality Assurance | 3.00 WK | 20,700 | 3,100 | 4,760 | 28,560 | 9520.58 | 1 |
| | CONTAMINATED SOIL | | 1,279,530 | 191,930 | 366,570 | 1,838,020 | | |
| | EXCAVATION | | 1,279,530 | 191,930 | 366,570 | 1,838,020 | | |
| | SOLID WASTE COLLECT/CONTAINMENT | | 1,279,530 | 191,930 | 366,570 | 1,838,020 | | |
| 06 21 DEMOBILIZATION | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | |
| 06 21 04 01 01 | Demobilization | | | | | | | |
| 06 21 04 01 01 01 | Demobilization - Equipment | | 4,480 | 670 | 1,030 | 6,180 | | 1 |
| | Demobilization | | 4,480 | 670 | 1,030 | 6,180 | | |
| | TRANSPORTATION | | 4,480 | 670 | 1,030 | 6,180 | | |
| | DEMOB OF EQUIPMENT & PERSONNEL | | 4,480 | 670 | 1,030 | 6,180 | | |
| | DEMOBILIZATION | | 4,480 | 670 | 1,030 | 6,180 | | |
| | REMEDIAL ACTION | | 1,407,100 | 211,070 | 397,220 | 2,015,390 | | |
| | HANFORD: REMEDIATION | | 1,407,100 | 211,070 | 397,220 | 2,015,390 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | 4,540 | 680 | 260 | 440 | 40 | 60 | 6,020 | |
| TRANSPORTATION | | 4,540 | 680 | 260 | 440 | 40 | 60 | 6,020 | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,540 | 680 | 260 | 440 | 40 | 60 | 6,020 | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01 Assembly and Setup | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| MOBILIZATION AND PREPATORY WORK | | 7,390 | 1,110 | 420 | 710 | 70 | 100 | 9,800 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | 60.00 EA | 32,700 | 4,910 | 1,880 | 3,160 | 310 | 430 | 43,380 | 723.07 |
| 06 02 06 01 02 PHASE II, Soil Sample | 60.00 EA | 40,200 | 6,030 | 2,310 | 3,880 | 380 | 530 | 53,330 | 888.91 |
| SURFACE SOIL | | 72,900 | 10,940 | 4,190 | 7,040 | 690 | 960 | 96,720 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 10,940 | 4,190 | 7,040 | 690 | 960 | 96,720 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 10,940 | 4,190 | 7,040 | 690 | 960 | 96,720 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 03 05 01 FENCING | | | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | 500.00 LF | 12,500 | 1,880 | 720 | 1,210 | 120 | 160 | 16,580 | 33.17 |
| FENCING | | 12,500 | 1,880 | 720 | 1,210 | 120 | 160 | 16,580 | |
| FENCING | | 12,500 | 1,880 | 720 | 1,210 | 120 | 160 | 16,580 | |
| SITE WORK | | 12,500 | 1,880 | 720 | 1,210 | 120 | 160 | 16,580 | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | 290.00 CY | 624,140 | 93,620 | 35,890 | 60,290 | 5,920 | 8,200 | 828,060 | 2855.37 |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | 150.00 CY | 323,090 | 48,460 | 18,580 | 31,210 | 3,070 | 4,240 | 428,660 | 2857.71 |
| 06 08 01 03 03 Post Removal | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,120 | |
| 06 08 01 03 91 Safety and Quality Assurance | 3.00 WK | 15,600 | 2,340 | 900 | 1,510 | 150 | 200 | 20,700 | 6898.97 |
| CONTAMINATED SOIL | | 964,420 | 144,660 | 55,450 | 93,160 | 9,150 | 12,670 | 1,279,530 | |
| EXCAVATION | | 964,420 | 144,660 | 55,450 | 93,160 | 9,150 | 12,670 | 1,279,530 | |
| SOLID WASTE COLLECT/CONTAINMENT | | 964,420 | 144,660 | 55,450 | 93,160 | 9,150 | 12,670 | 1,279,530 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 Demobilization | | 3,380 | 510 | 190 | 330 | 30 | 40 | 4,480 | |
| TRANSPORTATION | | 3,380 | 510 | 190 | 330 | 30 | 40 | 4,480 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 3,380 | 510 | 190 | 330 | 30 | 40 | 4,480 | |
| DEMOBILIZATION | | 3,380 | 510 | 190 | 330 | 30 | 40 | 4,480 | |
| REMEDIAL ACTION | | 1,060,580 | 159,090 | 60,980 | 102,450 | 10,060 | 13,930 | 1,407,100 | |
| HANFORD: REMEDIATION | | 1,060,580 | 159,090 | 60,980 | 102,450 | 10,060 | 13,930 | 1,407,100 | |
| S & A | | | | | | | | 211,070 | |
| SUBTOTAL | | | | | | | | 1,618,170 | |

| | QUANTITY | UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| CONTINGENCY | | | | | | | | | 397,220 | |
| TOTAL INCL OWNER COSTS | | | | | | | | | 2,015,390 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | | | |
| Equipment Mob, Detailed List | | 4,540 | 680 | 260 | 440 | 40 | 60 | 6,020 | |
| TRANSPORTATION | | 4,540 | 680 | 260 | 440 | 40 | 60 | 6,020 | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,540 | 680 | 260 | 440 | 40 | 60 | 6,020 | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01 Assembly and Setup | | | | | | | | | |
| 06 01 03 01 01 01 Assembly and Setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | 37.81 |
| Assembly and Setup | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| MOBILIZATION AND PREPATORY WORK | | 7,390 | 1,110 | 420 | 710 | 70 | 100 | 9,800 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 30,000 | 4,500 | 1,720 | 2,900 | 280 | 390 | 39,800 | 663.36 |
| 06 02 06 01 01 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,580 | |
| PHASE I, Soil Sample | 60.00 EA | 32,700 | 4,910 | 1,880 | 3,160 | 310 | 430 | 43,380 | 723.07 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 37,500 | 5,630 | 2,160 | 3,620 | 360 | 490 | 49,750 | 829.20 |
| 06 02 06 01 02 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,580 | |
| PHASE II, Soil Sample | 60.00 EA | 40,200 | 6,030 | 2,310 | 3,880 | 380 | 530 | 53,330 | 888.91 |
| SURFACE SOIL | | 72,900 | 10,940 | 4,190 | 7,040 | 690 | 960 | 96,720 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 10,940 | 4,190 | 7,040 | 690 | 960 | 96,720 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 10,940 | 4,190 | 7,040 | 690 | 960 | 96,720 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | | | | |
| 06 03 05 01 01 01 Temporary Fencing - 6' Security | 500.00 LF | 12,500 | 1,880 | 720 | 1,210 | 120 | 160 | 16,580 | 33.17 |
| Temporary Fencing | 500.00 LF | 12,500 | 1,880 | 720 | 1,210 | 120 | 160 | 16,580 | 33.17 |
| FENCING | | 12,500 | 1,880 | 720 | 1,210 | 120 | 160 | 16,580 | |
| FENCING | | 12,500 | 1,880 | 720 | 1,210 | 120 | 160 | 16,580 | |
| SITE WORK | | 12,500 | 1,880 | 720 | 1,210 | 120 | 160 | 16,580 | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | | | |
| 06 08 01 03 01 01 Excavate/Load PCB Soils | 290.00 CY | 1,170 | 180 | 70 | 110 | 10 | 20 | 1,550 | 5.34 |
| 06 08 01 03 01 02 Transport PCB Soils - Arlington | 290.00 CY | 620,290 | 93,040 | 35,670 | 59,920 | 5,890 | 8,150 | 822,950 | 2837.77 |
| 06 08 01 03 01 03 PPEquip, Modified Class D | 2.00 DAY | 2,680 | 400 | 150 | 260 | 30 | 40 | 3,550 | 1776.90 |
| PHASE I, Excavate/Load PCB Soils | 290.00 CY | 624,140 | 93,620 | 35,890 | 60,290 | 5,920 | 8,200 | 828,060 | 2855.37 |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | | | |
| 06 08 01 03 02 01 Excavate/Load PCB Soils | 150.00 CY | 600 | 90 | 30 | 60 | 10 | 10 | 800 | 5.34 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 02 02 Transport PCB Soils - Arlington | 150.00 CY | 321,150 | 48,170 | 18,470 | 31,020 | 3,050 | 4,220 | 426,080 | 2840.52 |
| 06 08 01 03 02 03 PPEquip, Modified Class D | 2.00 DAY | 1,340 | 200 | 80 | 130 | 10 | 20 | 1,780 | 888.45 |
| PHASE II,Excavate/Load PCB Soils | 150.00 CY | 323,090 | 48,460 | 18,580 | 31,210 | 3,070 | 4,240 | 428,660 | 2857.71 |
| 06 08 01 03 03 Post Removal | | | | | | | | | |
| 06 08 01 03 03 01 Excavate/Load Crew | 1.00 DAY | 930 | 140 | 50 | 90 | 10 | 10 | 1,230 | 1228.28 |
| 06 08 01 03 03 02 PPEquip, Modified Class D | 1.00 DAY | 670 | 100 | 40 | 60 | 10 | 10 | 890 | 888.45 |
| Post Removal | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,120 | |
| 06 08 01 03 91 Safety and Quality Assurance | | | | | | | | | |
| Safety and Quality Assurance | 3.00 WK | 15,600 | 2,340 | 900 | 1,510 | 150 | 200 | 20,700 | 6898.97 |
| CONTAMINATED SOIL | | 964,420 | 144,660 | 55,450 | 93,160 | 9,150 | 12,670 | 1,279,530 | |
| EXCAVATION | | 964,420 | 144,660 | 55,450 | 93,160 | 9,150 | 12,670 | 1,279,530 | |
| SOLID WASTE COLLECT/CONTAINMENT | | 964,420 | 144,660 | 55,450 | 93,160 | 9,150 | 12,670 | 1,279,530 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 Demobilization | | | | | | | | | |
| 06 21 04 01 01 01 Demobilization - Equipment | | 3,380 | 510 | 190 | 330 | 30 | 40 | 4,480 | |
| Demobilization | | 3,380 | 510 | 190 | 330 | 30 | 40 | 4,480 | |
| TRANSPORTATION | | 3,380 | 510 | 190 | 330 | 30 | 40 | 4,480 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 3,380 | 510 | 190 | 330 | 30 | 40 | 4,480 | |
| DEMOBILIZATION | | 3,380 | 510 | 190 | 330 | 30 | 40 | 4,480 | |
| REMEDIAL ACTION | | 1,060,580 | 159,090 | 60,980 | 102,450 | 10,060 | 13,930 | 1,407,100 | |
| HANFORD: REMEDIATION | | 1,060,580 | 159,090 | 60,980 | 102,450 | 10,060 | 13,930 | 1,407,100 | |
| S & A | | | | | | | | 211,070 | |
| SUBTOTAL | | | | | | | | 1,618,170 | |
| CONTINGENCY | | | | | | | | 397,220 | |

| | QUANTITY | UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL INCL OWNER COSTS | | | | | | | | | 2,015,390 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION AND PREPATORY WORK
06 01 01. MOB OF EQUIPMENT & PERSONNEL
06 01 01 1. TRANSPORTATION
06 01 01 1 01. Equipment Mob, Detailed List

This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi Radius mob is assumed.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 3237 > | Mob, FEnd Ldr, Wheel, 6.0-8 CY, Articulated Fr, 100-mi rad | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 1300.00<br>1,300 | 0.00<br>0 | 0.00<br>0 | 1300.00<br>1,300 | 1300.00 |
| USR AA <01505 4201 > | Mob, Roller, Towed, 50-75 Ton, Pneumatic, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 550.00 |
| USR AA <01505 5203 > | Mob, Motor Grader, 150-200 HP, Art. Fr, Pwr Shift, 100-mi Rad | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 525.00 |
| USR AA <01505 7111 > | Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 7123 > | Mob, Bottom Dump trailer, 30 Ton w/CLT8000 Trk, 100-mi Radius | 12.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>1,500 | 0.00<br>0 | 0.00<br>0 | 125.00<br>1,500 | 125.00 |
| USR AA <01505 7131 > | Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 150.00 |
| USR AA <01505 8921 > | Mob, Decontamination Trailer, w/25,000 GVW Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 135.00 |
| M CIV AA <01500 1101 > | Mob - Field Office Trailer | 1.00 EA N/A | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| | Equipment Mob, Detailed List | | | 0 | 0 | 4,535 | 0 | 0 | 4,535 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TRANSPORTATION | | | | | 0 | 0 | 4,535 | 0 | 0 | 4,535 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 03. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01. TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01. Assembly and Setup | | | | | | | | | |
| 06 01 03 01 01 01. Assembly and Setup<br>Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Assembly and Setup | 100.00 HR | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Assembly and Setup | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 03 02. DECONTAMINATION FACILITIES | | | | | | | | | |
| DECONTAMINATION FACILITIES | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06. SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01. SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01. PHASE I, Soil Sample | | | | | | | | | |
| After the top 12" of soil is removed, soil samples will be taken. | | | | | | | | | |
| 06 02 06 01 01 01. Soil Sampling | | | | | | | | | |
| Sample on 15'x15' grid (50 samples) with analysis at off site lab for BEHP only, with 14-day turnaround. Method 8270. Add 10 QA samples. | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 30,000 | 30,000 | 500.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE I, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 32,700 | 32,700 | 545.00 |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02 06 01 02. PHASE II, Soil Sample<br>Another set of soil samples will be taken after the next 6" soil layer is excavated. | | | | | | | | | |
| 06 02 06 01 02 01. Soil Sampling<br>Same as Phase I, except with 7-day turnaround, add 25%. | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 37,500 | 37,500 | 625.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE II, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 40,200 | 40,200 | 670.00 |
| SURFACE SOIL | | | 0 | 0 | 0 | 0 | 72,900 | 72,900 | |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03. SITE WORK | | | | | | | | | | | |
| 06 03 05. FENCING | | | | | | | | | | | |
| 06 03 05 01. FENCING | | | | | | | | | | | |
| 06 03 05 01 01. Temporary Fencing | | | | | | | | | | | |
| 06 03 05 01 01 01. Temporary Fencing - 6' Security<br>A 6' Security fence will be required during the duration of the cleanup activities around the work site. Cost taken from recent bid quotes. "Other" cost for removal. | | | | | | | | | | | |
| Temporary Fencing - 6' Security | 500.00 | LF | | | 0 | 2,500 | 1,250 | 6,250 | 2,500 | 12,500 | 25.00 |
| Temporary Fencing | 500.00 | LF | | | 0 | 2,500 | 1,250 | 6,250 | 2,500 | 12,500 | 25.00 |
| FENCING | | | | | 0 | 2,500 | 1,250 | 6,250 | 2,500 | 12,500 | |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08. SOLID WASTE COLLECT/CONTAINMENT | | | | | | | | | | | |
| 06 08 01. EXCAVATION | | | | | | | | | | | |
| 06 08 01 03. CONTAMINATED SOIL | | | | | | | | | | | |
| 06 08 01 03 01. PHASE I, Excavate/Load PCB Soils | | | | | | | | | | | |
| 06 08 01 03 01 01. Excavate/Load PCB Soils | | | | | | | | | | | |
| USR AA <02220 0000 > Excavate top 12-inches of soil | | | | | 0.06 | 1.59 | 0.54 | 0.00 | 0.00 | 2.13 | |
| | 290.00 | CY | XXQNA | 28.75 | 18 | 460 | 157 | 0 | 0 | 618 | 2.13 |
| USR AA <02220 0000 > Load excavated/stockpiled soil load in 20-ton ROLL OFF units for use on trucks that are DOT approved for hazardeous waste hauler. Assume 3,100lb/bcy | | | | | 0.03 | 0.94 | 0.95 | 0.00 | 0.00 | 1.90 | |
| | 290.00 | CY | XXQMG | 28.75 | 10 | 273 | 277 | 0 | 0 | 550 | 1.90 |
| Excavate/Load PCB Soils | 290.00 | CY | | | 28 | 734 | 434 | 0 | 0 | 1,167 | 4.03 |
| 06 08 01 03 01 02. Transport PCB Soils - Arlington | | | | | | | | | | | |
| USR AA <02220 0000 > Transport soil to Port Arthur TX 290 cy x 3,100lb/cy / 2000lb/ton = 449.5 tons @ 20 tons/truck = 22.48 trucks use 23 trucks | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 7000.00 | 7000.00 | |
| | 23.00 | TRK | | 0.00 | 0 | 0 | 0 | 0 | 161,000 | 161,000 | 7000.00 |
| USR AA <02220 0000 > Incinerator processing fee | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 0.50 | |
| | 899000 | LB | | 0.00 | 0 | 0 | 0 | 0 | 449,500 | 449,500 | 0.50 |
| USR AA <02220 0000 > Texas state environmental tax | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 20.00 | |
| | 449.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 8,990 | 8,990 | 20.00 |
| USR AA <02220 0000 > Soil profile fee | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 800.00 | 800.00 | |
| | 1.00 | EA | | 0.00 | 0 | 0 | 0 | 0 | 800 | 800 | 800.00 |
| Transport PCB Soils - Arlington | 290.00 | CY | | | 0 | 0 | 0 | 0 | 620,290 | 620,290 | 2138.93 |
| 06 08 01 03 01 03. PPEquip, Modified Class D | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 16.00 | EA | N/A | 0.00 | 0 | 0 | 184 | 0 | 0 | 184 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 16.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 121 | 0 | 121 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 16.00 | PR | N/A | 0.00 | 0 | 0 | 37 | 0 | 0 | 37 | 2.30 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HTW AA <01951 5726 > Half-Mask Air Purifying | | | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| Respirators | 16.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 319 | 0 | 319 | 19.94 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, | | | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| 4.2 gpm, 11 HP (Daily cost) | 4.00 | DAY | ULABA | 0.13 | 40 | 937 | 6 | 139 | 0 | 1,082 | 270.58 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| Fans (Monthly Rental) | 4.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 108 | 0 | 108 | 26.95 |
| HTW AA <01951 5723 > Cartridges, Respirator | | | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | 32.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 828 | 0 | 828 | 25.87 |
| PPEquip, Modified Class D | 2.00 | DAY | | | 40 | 937 | 227 | 1,515 | 0 | 2,679 | 1339.32 |
| PHASE I, Excavate/Load PCB Soils | 290.00 | CY | | | 68 | 1,671 | 660 | 1,515 | 620,290 | 624,136 | 2152.19 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 02. PHASE II,Excavate/Load PCB Soils | | | | | | | | | | | |
| 06 08 01 03 02 01. Excavate/Load PCB Soils | | | | | | | | | | | |
| USR AA <02220 0000 > Excavate next 6-inches of soil | | | | | 0.06 | 1.59 | 0.54 | 0.00 | 0.00 | 2.13 | |
| | 150.00 | CY | XXQNA | 28.75 | 9 | 238 | 81 | 0 | 0 | 319 | 2.13 |
| USR AA <02220 0000 > Load excavated/stockpiled soil load in 20-ton roll off units and dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy | | | | | 0.03 | 0.94 | 0.95 | 0.00 | 0.00 | 1.90 | |
| | 150.00 | CY | XXQMG | 28.75 | 5 | 141 | 143 | 0 | 0 | 284 | 1.90 |
| Excavate/Load PCB Soils | 150.00 | CY | | | 14 | 380 | 224 | 0 | 0 | 604 | 4.03 |
| 06 08 01 03 02 02. Transport PCB Soils - Arlington | | | | | | | | | | | |
| USR AA <02220 0000 > Transport soil to Port Arthur TX 150 cy x 3,100lb/cy / 2000lb/ton = 232.5 tons @ 20 tons/truck = 11.6 trucks use 12 trucks | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 7000.00 | 7000.00 | |
| | 12.00 | TRK | | 0.00 | 0 | 0 | 0 | 0 | 84,000 | 84,000 | 7000.00 |
| USR AA <02220 0000 > Incineration fee | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 0.50 | |
| | 465000 | LB | | 0.00 | 0 | 0 | 0 | 0 | 232,500 | 232,500 | 0.50 |
| USR AA <02220 0000 > Texas state environmental tax | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 20.00 | |
| | 232.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 4,650 | 4,650 | 20.00 |
| Transport PCB Soils - Arlington | 150.00 | CY | | | 0 | 0 | 0 | 0 | 321,150 | 321,150 | 2141.00 |
| 06 08 01 03 02 03. PPEquip, Modified Class D | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 92 | 0 | 0 | 92 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 60 | 0 | 60 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 8.00 | PR | N/A | 0.00 | 0 | 0 | 18 | 0 | 0 | 18 | 2.30 |
| HTW AA <01951 5726 > Half-Mask Air Purifying Respirators | | | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 160 | 0 | 160 | 19.94 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| | 2.00 | DAY | ULABA | 0.13 | 20 | 469 | 3 | 70 | 0 | 541 | 270.58 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| Fans (Monthly Rental) | 2.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 54 | 0 | 54 | 26.95 |
| HTW AA <01951 5723 > Cartridges, Respirator | | | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | 16.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 414 | 0 | 414 | 25.87 |
| PPEquip, Modified Class D | 2.00 | DAY | | | 20 | 469 | 113 | 757 | 0 | 1,339 | 669.66 |
| PHASE II,Excavate/Load PCB Soils | 150.00 | CY | | | 34 | 848 | 338 | 757 | 321,150 | 323,093 | 2153.95 |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 03. Post Removal | | | | | | | | | |
| 06 08 01 03 03 01. Excavate/Load Crew | | | | | | | | | |
| USR AA <02220 0000 > Excavation crew | | | 14.00 | 365.22 | 124.54 | 0.00 | 0.00 | 489.76 | |
| | 1.00 DAY XXQNA | 0.13 | 14 | 365 | 125 | 0 | 0 | 490 | 489.76 |
| USR AA <02220 0000 > Load crew load in 28-ton dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy | | | 8.00 | 216.72 | 219.31 | 0.00 | 0.00 | 436.03 | |
| | 1.00 DAY XXQMG | 0.13 | 8 | 217 | 219 | 0 | 0 | 436 | 436.03 |
| Excavate/Load Crew | 1.00 DAY | | 22 | 582 | 344 | 0 | 0 | 926 | 925.80 |
| 06 08 01 03 03 02. PPEquip, Modified Class D | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 4.00 EA N/A | 0.00 | 0 | 0 | 46 | 0 | 0 | 46 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 4.00 EA N/A | 0.00 | 0 | 0 | 0 | 30 | 0 | 30 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 4.00 PR N/A | 0.00 | 0 | 0 | 9 | 0 | 0 | 9 | 2.30 |
| HTW AA <01951 5726 > Half-Mask Air Purifying Respirators | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| | 4.00 EA N/A | 0.00 | 0 | 0 | 0 | 80 | 0 | 80 | 19.94 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| | 1.00 DAY ULABA | 0.13 | 10 | 234 | 1 | 35 | 0 | 271 | 270.58 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | 1.00 DAY N/A | 0.00 | 0 | 0 | 0 | 27 | 0 | 27 | 26.95 |
| HTW AA <01951 5723 > Cartridges, Respirator | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | 8.00 EA N/A | 0.00 | 0 | 0 | 0 | 207 | 0 | 207 | 25.87 |
| PPEquip, Modified Class D | 1.00 DAY | | 10 | 234 | 57 | 379 | 0 | 670 | 669.66 |
| Post Removal | | | 32 | 816 | 401 | 379 | 0 | 1,595 | |

| 06 08. SOLID WASTE COLLECT/CONTAINMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 91. Safety and Quality Assurance | | | | | | | | | |
| Safety/QA crew: | | | | | | | | | |
| WHC HPT: $50/hr x 40hrs = $2,000 | | | | | | | | | |
| Safety: $70/hr x 40hrs = $2,800 | | | | | | | | | |
| Special Assistance to QA: $50/hr x 8 hrs = $ 400 | | | | | | | | | |
| Total cost/week $5,200 | | | | | | | | | |
| Safety and Quality Assurance | 3.00 WK | | 0 | 15,600 | 0 | 0 | 0 | 15,600 | 5200.00 |
| CONTAMINATED SOIL | | | 134 | 18,935 | 1,398 | 2,651 | 941,440 | 964,424 | |

| 06 21. DEMOBILIZATION | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 21. DEMOBILIZATION | | | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | | | |
| 06 21 04 01 01. Demobilization | | | | | | | | | | | |
| 06 21 04 01 01 01. Demobilization - Equipment<br>Assume Demob at 75% of Mob. | | | | | | | | | | | |
| Demobilization - Equipment | | | | | 0 | 0 | 3,375 | 0 | 0 | 3,375 | |
| Demobilization | | | | | 0 | 0 | 3,375 | 0 | 0 | 3,375 | |
| TRANSPORTATION | | | | | 0 | 0 | 3,375 | 0 | 0 | 3,375 | |
| HANFORD: REMEDIATION | | | | | 134 | 23,935 | 10,808 | 9,001 | 1,016,840 | 1,060,584 | |

THIS PAGE INTENTIONALLY
LEFT BLANK

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | ULABA | 1 B-laborer + Small Tools | | | PROD = 100% | | | | CREW HOURS = | 112 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.83 | 0.25 | 5.96 | | | 5.96 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.33 | 1.00 | 23.33 | | | 23.33 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 1.25 | 29.29 | 0.13 | 0.18 | 29.47 |
| | XXQMG | 1 X-eqoprmed + 1 Front End Ldr, 2-1/2 Cy, Wheel | | | PROD = 100% | | | | CREW HOURS = | 47 |
| MIL | L40CA004 E | LDR,FE,WH, 2-1/2CY, ARTIC, 936E | 1.00 | HR | 27.41 | | | 1.00 | 27.41 | 27.41 |
| MIL | X-EQOPRMEDL | Outside Equip. Op. Medium | 1.00 | HR | 27.09 | 1.00 | 27.09 | | | 27.09 |
| | TOTAL | | | | | 1.00 | 27.09 | 1.00 | 27.41 | 54.50 |
| | XXQNA | 1 X-eqoprmed + 1 Dozer, Cat D-38, 65 Hp | | | PROD = 100% | | | | CREW HOURS = | 47 |
| MIL | T10CA001 E | BLADE,POWER ANGLE TILT,FOR D3 | 1.00 | HR | 1.87 | | | 1.00 | 1.87 | 1.87 |
| MIL | T15CA003 E | DOZER,CWLR,D-3C,PS,(ADD BLADE) | 1.00 | HR | 13.70 | | | 1.00 | 13.70 | 13.70 |
| MIL | X-LABORER L | Outside Laborer | 0.50 | HR | 23.33 | 0.50 | 11.67 | | | 11.67 |
| MIL | X-EQOPRMEDL | Outside Equip. Op. Medium | 1.00 | HR | 27.09 | 1.00 | 27.09 | | | 27.09 |
| MIL | X-EQOPRMEDF | Outside Equip. Op. Medium | 0.25 | HR | 27.59 | 0.25 | 6.90 | | | 6.90 |
| | TOTAL | | | | | 1.75 | 45.65 | 2.00 | 15.57 | 61.22 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | **** TOTAL **** | | | | |
| MIL | B-LABORER | Laborer/Helper | 23.33 | 0.0% | 0.0% | 0.00 | 0.00 | 23.33 | HR | 10/15/92 | 22.36 | 140 |
| MIL | X-EQOPRMED | Outside Equipment Oper. Medium | 27.09 | 0.0% | 0.0% | 0.00 | 0.00 | 27.09 | HR | 10/15/92 | 25.84 | 105 |
| MIL | X-LABORER | Outside Laborer | 23.33 | 0.0% | 0.0% | 0.00 | 0.00 | 23.33 | HR | 10/15/92 | 22.36 | 23 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | L40CA004 | LDR,FE,WH, 2-1/2CY, ARTIC, 936E | 8.03 | 2.79 | 3.99 | 1.6 | 8.34 | 2.26 | 0.34 | 27.41 | HR | 47 |
| MIL | T10CA001 | BLADE,POWER ANGLE TILT,FOR D3 | 0.75 | 0.22 | | 0.0 | 0.82 | | | 1.87 | HR | 47 |
| MIL | T15CA003 | DOZER,CWLR,D-3C,PS,(ADD BLADE) | 3.51 | 1.14 | 2.14 | 0.7 | 6.14 | | | 13.70 | HR | 47 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 15 |

THIS PAGE INTENTIONALLY
LEFT BLANK

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 5
Table of Contents Levels : 6

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |
| | Print Unit Cost Row : | Y | | | | | | | |
| | Print Page Footer : | Y | | | | | | | |
| | Show Cost Codes : | Y | | | | | | | |
| COLUMNS OPTIONS | Print Crew Id : | Y | | | | | | | |
| | Crew Output : | Y | | | | | | | |
| | Unit Cost : | Y | | | | | | | |
| UPB TITLES | No. of Levels to Print : | 0 | | | | | | | |
| | Bracket Titles With : | - : | | | | | | | |
| | Include titles Notes : | Y | | | | | | | |

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y
Link Listing : N

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Detail : | Y | | | | | | | | | |
| Project : | N | Y | Y | | N | N | N | N | Y | Y |
| Contractor : | N | N | | N | N | N | N | N | N | N |
| Division : | N | N | N | Y | N | N | N | N | N | N |
| System : | N | N | N | Y | N | N | N | N | N | N |
| 2nd View : | N | | | | | | | | | |
| Crew : | Y | | | Y | N | N | N | N | N | N |
| Labor : | Y | | | | | | | | | |
| Equipment : | Y | | | | | | | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTION | | | | | | |
| S & A | P | 15.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 03 01 01 Assembly and Setup | | | | | | |
| 06 01 03 01 01 01 Assembly and Setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | O | | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 02 06 01 01 02 QA Report | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 02 06 01 02 02 QA Report | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 03 SITE WORK | | | | | | |
| 06 03 05 FENCING | | | | | | |
| 06 03 05 01 FENCING | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 03 05 01 01 01 Temporary Fencing - 6' Security | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |
| 06 08 SOLID WASTE COLLECT/CONTAINMENT | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | |
| 06 08 01 03 01 01 Excavate/Load PCB Soils | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 40.00 | | | | |
| 06 08 01 03 01 02 Transport PCB Soils - Arlington | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 25.00 | | | | |
| 06 08 01 03 01 03 PPEquip, Modified Class D | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 25.00 | | | | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | |
| 06 08 01 03 02 01 Excavate/Load PCB Soils | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 40.00 | | | | |
| 06 08 01 03 02 02 Transport PCB Soils - Arlington | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 25.00 | | | | |
| 06 08 01 03 02 03 PPEquip, Modified Class D | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | O | | | | | |
| 06 08 01 03 03 Post Removal | | | | | | | |
| 06 08 01 03 03 01 Excavate/Load Crew | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 25.00 | | | | |
| 06 08 01 03 03 02 PPEquip, Modified Class D | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 25.00 | | | | |
| 06 08 01 03 91 Safety and Quality Assurance | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 21 04 01 | 01 Demobilization | | | | | | |
| 06 21 04 01 01 | 01 Demobilization - Equipment | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

DOE/RL-92-67

# HORN RAPIDS LANDFILL
# OFFSITE INCINERATION

9 3 1 2 3 2 1 7 1 3

THIS PAGE IS INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
HORN RAPID LANDFILL
OFF-SITE INCINERATION - PCB's

Designed By: CENPW-EN-EE/WHC
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/07/92

M C A C E S  G O L D  E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 Baseline Estimates

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

"23" is the Subproject (ie. 1100-EM)

"01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represent Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 92, See Contingency Notes for explanation of Contingency percentages, and S & A is estimated at 15%. See Detail notes (pg. 1) for explanation of overhead percentages used.

This project estimate covers the Off-site incineration of PCB's in the Horn Rapid Landfill (HRL). PCB contaminated soils will be loaded into 20-ton roll-off units, for transportation to Texas.

1. Contingency is based on uncertainty of the amount of time required to do the represented in the estimate, etc.

2. Contingency is based on the uncertainty of the quantities presented.

3. Contingency based on the unit costs obtained by Vendor and therefore may be different by the time work will actually be accomplished.

INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 5.....1
PROJECT OWNER SUMMARY - LEVEL 6.....4
PROJECT INDIRECT SUMMARY - LEVEL 5.....8
PROJECT INDIRECT SUMMARY - LEVEL 6.....11

DETAILED ESTIMATE DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION AND PREPATORY WORK
01. MOB OF EQUIPMENT & PERSONNEL
1. TRANSPORTATION
01-. Ph I, Equip Mob, Detailed List.....1
02-. Ph II, Equip Mob, Detailed List.....2
03. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Ph I, Office Trailers - setup.....3
02. Ph II, Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
03. Ph I, Trailers - assbly/setup.....4
04. Ph II, Trailers - assbly/setup.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
06. SAMPLING SOIL, SED & SOLID WASTE
01. SURFACE SOIL
01. PHASE I, Soil Sample
01. Soil Sampling.....5
02. QA Report.....5
02. PHASE II, Soil Sample
01. Soil Sampling.....6
02. QA Report.....6
03. SITE WORK
05. FENCING
01. FENCING
01. Temporary Fencing
01. Temporary Fencing - 6' Security.....7
08. SOLIDS COLLECTION & CONTAINMENT
01. EXCAVATION
03. CONTAMINATED SOIL
01. PHASE I, Excavate/Load PCB Soils
01. Excavate/Load PCB Soils.....8
02. Transport PCB Soils - TEXAS.....8
03. PPEquip, Modified Class D.....8
02. PHASE II,Excavate/Load PCB Soils
01. Excavate/Load PCB Soils.....10
02. Transport PCB Soils - TEXAS.....10
03. PPEquip, Modified Class D.....10
03. Post Removal
01. Excavate/Load Crew.....12
02. PPEquip, Modified Class D.....12

DETAILED ESTIMATE DETAIL PAGE

91. Safety and Quality Assurance.....13
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. PH I, Demob and take down.....14
02. PH II, Demob and Take down.....14

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | 2,700 | 400 | 620 | 3,720 | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | 2,700 | 400 | 620 | 3,720 | | |
| TRANSPORTATION | | 5,400 | 810 | 1,240 | 7,450 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 5,400 | 810 | 1,240 | 7,450 | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | 100.00 HR | 3,780 | 570 | 870 | 5,220 | 52.16 | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | 100.00 HR | 3,780 | 570 | 870 | 5,220 | 52.16 | |
| TRAILERS AND BUILDINGS | | 7,560 | 1,130 | 1,740 | 10,430 | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | 120.00 HR | 4,540 | 680 | 1,040 | 6,260 | 52.16 | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | 120.00 HR | 4,540 | 680 | 1,040 | 6,260 | 52.16 | |
| DECONTAMINATION FACILITIES | | 9,070 | 1,360 | 2,090 | 12,520 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 16,630 | 2,490 | 3,820 | 22,950 | | |
| MOBILIZATION AND PREPATORY WORK | | 22,030 | 3,300 | 5,070 | 30,400 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | 60.00 EA | 43,370 | 6,500 | 9,970 | 59,840 | 997.40 | |
| 06 02 06 01 02 PHASE II, Soil Sample | 60.00 EA | 53,310 | 8,000 | 12,260 | 73,570 | 1226.16 | |
| SURFACE SOIL | | 96,680 | 14,500 | 22,240 | 133,410 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 96,680 | 14,500 | 22,240 | 133,410 | | |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| | MONITOR, SAMPLE, TEST, ANALYSIS | | 96,680 | 14,500 | 22,240 | 133,410 | | |
| 06 03 | SITE WORK | | | | | | | |
| 06 03 05 | FENCING | | | | | | | |
| 06 03 05 01 | FENCING | | | | | | | |
| 06 03 05 01 01 | Temporary Fencing | 400.00 LF | 13,260 | 1,990 | 3,050 | 18,300 | 45.75 | |
| | FENCING | | 13,260 | 1,990 | 3,050 | 18,300 | | |
| | FENCING | | 13,260 | 1,990 | 3,050 | 18,300 | | |
| | SITE WORK | | 13,260 | 1,990 | 3,050 | 18,300 | | |
| 06 08 | SOLIDS COLLECTION & CONTAINMENT | | | | | | | |
| 06 08 01 | EXCAVATION | | | | | | | |
| 06 08 01 03 | CONTAMINATED SOIL | | | | | | | |
| 06 08 01 03 01 | PHASE I, Excavate/Load PCB Soils | 350.00 CY | 999,350 | 149,900 | 287,630 | 1,436,880 | 4105.38 | |
| 06 08 01 03 02 | PHASE II,Excavate/Load PCB Soils | 250.00 CY | 712,930 | 106,940 | 205,200 | 1,025,070 | 4100.29 | |
| 06 08 01 03 03 | Post Removal | | 2,120 | 320 | 610 | 3,040 | | |
| 06 08 01 03 91 | Safety and Quality Assurance | 3.00 WK | 20,690 | 3,100 | 4,760 | 28,550 | 9516.47 | |
| | CONTAMINATED SOIL | | 1,735,080 | 260,260 | 498,200 | 2,493,550 | | |
| | EXCAVATION | | 1,735,080 | 260,260 | 498,200 | 2,493,550 | | |
| | SOLIDS COLLECTION & CONTAINMENT | | 1,735,080 | 260,260 | 498,200 | 2,493,550 | | |
| 06 21 | DEMOBILIZATION | | | | | | | |
| 06 21 04 | DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 | TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 | PH I, Demob and take down | | 8,040 | 1,210 | 1,850 | 11,100 | | |
| 06 21 04 01 02 | PH II, Demob and Take down | | 8,040 | 1,210 | 1,850 | 11,100 | | |
| | TRANSPORTATION | | 16,090 | 2,410 | 3,700 | 22,200 | | |
| | DEMOB OF EQUIPMENT & PERSONNEL | | 16,090 | 2,410 | 3,700 | 22,200 | | |
| | DEMOBILIZATION | | 16,090 | 2,410 | 3,700 | 22,200 | | |

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT POFFIN: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, HORN RAPIDS LANDFILL, OFF-SITE INCIN
** PROJECT OWNER SUMMARY - LEVEL 5 (Rounded to 10's) **

TIME 08:09:43



| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| REMEDIAL ACTION | | 1,883,140 | 282,470 | 532,250 | 2,697,860 | | |
| HANFORD: REMEDIATION | | 1,883,140 | 282,470 | 532,250 | 2,697,860 | | |

| | QUANTITY | UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | | | |
| Ph I, Equip Mob, Detailed List | | | 2,700 | 400 | 620 | 3,720 | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | | | |
| Ph II, Equip Mob, Detailed List | | | 2,700 | 400 | 620 | 3,720 | | |
| TRANSPORTATION | | | 5,400 | 810 | 1,240 | 7,450 | | |
| MOB OF EQUIPMENT & PERSONNEL | | | 5,400 | 810 | 1,240 | 7,450 | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | | | |
| Ph I, Office Trailers - setup | 100.00 | HR | 3,780 | 570 | 870 | 5,220 | 52.16 | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | | | |
| Ph II, Office Trailers - setup | 100.00 | HR | 3,780 | 570 | 870 | 5,220 | 52.16 | |
| TRAILERS AND BUILDINGS | | | 7,560 | 1,130 | 1,740 | 10,430 | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Ph I, Trailers - assbly/setup | 120.00 HR | 4,540 | 680 | 1,040 | 6,260 | 52.16 | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 HR | 4,540 | 680 | 1,040 | 6,260 | 52.16 | |
| DECONTAMINATION FACILITIES | | 9,070 | 1,360 | 2,090 | 12,520 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 16,630 | 2,490 | 3,820 | 22,950 | | |
| MOBILIZATION AND PREPATORY WORK | | 22,030 | 3,300 | 5,070 | 30,400 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 39,780 | 5,970 | 9,150 | 54,900 | 915.05 | 1 |
| 06 02 06 01 01 02 QA Report | | 3,580 | 540 | 820 | 4,940 | | 1 |
| PHASE I, Soil Sample | 60.00 EA | 43,370 | 6,500 | 9,970 | 59,840 | 997.40 | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 49,730 | 7,460 | 11,440 | 68,630 | 1143.81 | 1 |
| 06 02 06 01 02 02 QA Report | | 3,580 | 540 | 820 | 4,940 | | 1 |
| PHASE II, Soil Sample | 60.00 EA | 53,310 | 8,000 | 12,260 | 73,570 | 1226.16 | |
| SURFACE SOIL | | 96,680 | 14,500 | 22,240 | 133,410 | | |
| SAMPLING SOIL, SED & SOLID WASTE | | 96,680 | 14,500 | 22,240 | 133,410 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 96,680 | 14,500 | 22,240 | 133,410 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | | |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| 06 03 05 01 01 01 | Temporary Fencing - 6' Security | 400.00 LF | 13,260 | 1,990 | 3,050 | 18,300 | 45.75 | |
| | Temporary Fencing | 400.00 LF | 13,260 | 1,990 | 3,050 | 18,300 | 45.75 | |
| | FENCING | | 13,260 | 1,990 | 3,050 | 18,300 | | |
| | FENCING | | 13,260 | 1,990 | 3,050 | 18,300 | | |
| | SITE WORK | | 13,260 | 1,990 | 3,050 | 18,300 | | |
| 06 08 SOLIDS COLLECTION & CONTAINMENT | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | | |
| 06 08 01 03 01 01 | Excavate/Load PCB Soils | 350.00 CY | 1,870 | 280 | 860 | 3,010 | 8.59 | 2 |
| 06 08 01 03 01 02 | Transport PCB Soils - TEXAS | 350.00 CY | 994,810 | 149,220 | 286,010 | 1,430,040 | 4085.84 | 2,3 |
| 06 08 01 03 01 03 | PPEquip, Modified Class D | 3.00 DAY | 2,660 | 400 | 770 | 3,830 | 1276.60 | 1 |
| | PHASE I, Excavate/Load PCB Soils | 350.00 CY | 999,350 | 149,900 | 287,630 | 1,436,880 | 4105.38 | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | | |
| 06 08 01 03 02 01 | Excavate/Load PCB Soils | 250.00 CY | 1,330 | 200 | 610 | 2,150 | 8.59 | 1,2 |
| 06 08 01 03 02 02 | Transport PCB Soils - TEXAS | 250.00 CY | 709,820 | 106,470 | 204,070 | 1,020,370 | 4081.48 | 2,3 |
| 06 08 01 03 02 03 | PPEquip, Modified Class D | 2.00 DAY | 1,780 | 270 | 510 | 2,550 | 1276.60 | 1 |
| | PHASE II,Excavate/Load PCB Soils | 250.00 CY | 712,930 | 106,940 | 205,200 | 1,025,070 | 4100.29 | |
| 06 08 01 03 03 Post Removal | | | | | | | | |
| 06 08 01 03 03 01 | Excavate/Load Crew | 1.00 DAY | 1,230 | 180 | 350 | 1,760 | 1764.88 | 1 |
| 06 08 01 03 03 02 | PPEquip, Modified Class D | 1.00 DAY | 890 | 130 | 260 | 1,280 | 1276.60 | 1 |
| | Post Removal | | 2,120 | 320 | 610 | 3,040 | | |
| 06 08 01 03 91 Safety and Quality Assurance | | | | | | | | |
| | Safety and Quality Assurance | 3.00 WK | 20,690 | 3,100 | 4,760 | 28,550 | 9516.47 | |
| | CONTAMINATED SOIL | | 1,735,080 | 260,260 | 498,200 | 2,493,550 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| EXCAVATION | | 1,735,080 | 260,260 | 498,200 | 2,493,550 | | |
| SOLIDS COLLECTION & CONTAINMENT | | 1,735,080 | 260,260 | 498,200 | 2,493,550 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | | | | | | |
| PH I, Demob and take down | | 8,040 | 1,210 | 1,850 | 11,100 | | |
| 06 21 04 01 02 PH II, Demob and Take down | | | | | | | |
| PH II, Demob and Take down | | 8,040 | 1,210 | 1,850 | 11,100 | | |
| TRANSPORTATION | | 16,090 | 2,410 | 3,700 | 22,200 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 16,090 | 2,410 | 3,700 | 22,200 | | |
| DEMOBILIZATION | | 16,090 | 2,410 | 3,700 | 22,200 | | |
| REMEDIAL ACTION | | 1,883,140 | 282,470 | 532,250 | 2,697,860 | | |
| HANFORD: REMEDIATION | | 1,883,140 | 282,470 | 532,250 | 2,697,860 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,700 | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,700 | |
| TRANSPORTATION | | 4,070 | 610 | 230 | 390 | 40 | 50 | 5,400 | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,070 | 610 | 230 | 390 | 40 | 50 | 5,400 | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | 37.80 |
| 06 01 03 01 02 Ph II, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | 37.80 |
| TRAILERS AND BUILDINGS | | 5,700 | 860 | 330 | 550 | 50 | 70 | 7,560 | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 30 | 40 | 4,540 | 37.80 |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 30 | 40 | 4,540 | 37.80 |
| DECONTAMINATION FACILITIES | | 6,840 | 1,030 | 390 | 660 | 60 | 90 | 9,070 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 12,540 | 1,880 | 720 | 1,210 | 110 | 160 | 16,630 | |
| MOBILIZATION AND PREPATORY WORK | | 16,610 | 2,490 | 960 | 1,600 | 150 | 220 | 22,030 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | 60.00 EA | 32,700 | 4,910 | 1,880 | 3,160 | 290 | 430 | 43,370 | 722.75 |
| 06 02 06 01 02 PHASE II, Soil Sample | 60.00 EA | 40,200 | 6,030 | 2,310 | 3,880 | 360 | 530 | 53,310 | 888.52 |
| SURFACE SOIL | | 72,900 | 10,940 | 4,190 | 7,040 | 650 | 960 | 96,680 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 10,940 | 4,190 | 7,040 | 650 | 960 | 96,680 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 10,940 | 4,190 | 7,040 | 650 | 960 | 96,680 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | 400.00 LF | 10,000 | 1,500 | 580 | 970 | 90 | 130 | 13,260 | 33.15 |
| FENCING | | 10,000 | 1,500 | 580 | 970 | 90 | 130 | 13,260 | |
| FENCING | | 10,000 | 1,500 | 580 | 970 | 90 | 130 | 13,260 | |
| SITE WORK | | 10,000 | 1,500 | 580 | 970 | 90 | 130 | 13,260 | |
| 06 08 SOLIDS COLLECTION & CONTAINMENT | | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | 350.00 CY | 753,570 | 113,040 | 43,330 | 72,790 | 6,720 | 9,890 | 999,350 | 2855.27 |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | 250.00 CY | 537,600 | 80,640 | 30,910 | 51,930 | 4,800 | 7,060 | 712,930 | 2851.74 |
| 06 08 01 03 03 Post Removal | | 1,600 | 240 | 90 | 150 | 10 | 20 | 2,120 | |
| 06 08 01 03 91 Safety and Quality Assurance | 3.00 WK | 15,600 | 2,340 | 900 | 1,510 | 140 | 200 | 20,690 | 6895.99 |
| CONTAMINATED SOIL | | 1,308,360 | 196,250 | 75,230 | 126,390 | 11,670 | 17,180 | 1,735,080 | |
| EXCAVATION | | 1,308,360 | 196,250 | 75,230 | 126,390 | 11,670 | 17,180 | 1,735,080 | |
| SOLIDS COLLECTION & CONTAINMENT | | 1,308,360 | 196,250 | 75,230 | 126,390 | 11,670 | 17,180 | 1,735,080 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | 6,070 | 910 | 350 | 590 | 50 | 80 | 8,040 | |
| 06 21 04 01 02 PH II, Demob and Take down | | 6,070 | 910 | 350 | 590 | 50 | 80 | 8,040 | |
| TRANSPORTATION | | 12,130 | 1,820 | 700 | 1,170 | 110 | 160 | 16,090 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 12,130 | 1,820 | 700 | 1,170 | 110 | 160 | 16,090 | |
| DEMOBILIZATION | | 12,130 | 1,820 | 700 | 1,170 | 110 | 160 | 16,090 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| REMEDIAL ACTION | | 1,420,000 | 213,000 | 81,650 | 137,170 | 12,670 | 18,640 | 1,883,140 | |
| HANFORD: REMEDIATION | | 1,420,000 | 213,000 | 81,650 | 137,170 | 12,670 | 18,640 | 1,883,140 | |
| S & A | | | | | | | | 282,470 | |
| SUBTOTAL | | | | | | | | 2,165,610 | |
| CONTINGENCY | | | | | | | | 532,250 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 2,697,860 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | | | | |
| Ph I, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,700 | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | | | | |
| Ph II, Equip Mob, Detailed List | | 2,040 | 310 | 120 | 200 | 20 | 30 | 2,700 | |
| TRANSPORTATION | | 4,070 | 610 | 230 | 390 | 40 | 50 | 5,400 | |
| MOB OF EQUIPMENT & PERSONNEL | | 4,070 | 610 | 230 | 390 | 40 | 50 | 5,400 | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | | | | |
| Ph I, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | 37.80 |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | | | | |
| Ph II, Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | 37.80 |
| TRAILERS AND BUILDINGS | | 5,700 | 860 | 330 | 550 | 50 | 70 | 7,560 | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Ph I, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 30 | 40 | 4,540 | 37.80 |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 HR | 3,420 | 510 | 200 | 330 | 30 | 40 | 4,540 | 37.80 |
| DECONTAMINATION FACILITIES | | 6,840 | 1,030 | 390 | 660 | 60 | 90 | 9,070 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 12,540 | 1,880 | 720 | 1,210 | 110 | 160 | 16,630 | |
| MOBILIZATION AND PREPATORY WORK | | 16,610 | 2,490 | 960 | 1,600 | 150 | 220 | 22,030 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 30,000 | 4,500 | 1,720 | 2,900 | 270 | 390 | 39,780 | 663.08 |
| 06 02 06 01 01 02 QA Report | | 2,700 | 410 | 160 | 260 | 20 | 40 | 3,580 | |
| PHASE I, Soil Sample | 60.00 EA | 32,700 | 4,910 | 1,880 | 3,160 | 290 | 430 | 43,370 | 722.75 |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 37,500 | 5,630 | 2,160 | 3,620 | 330 | 490 | 49,730 | 828.85 |
| 06 02 06 01 02 02 QA Report | | 2,700 | 410 | 160 | 260 | 20 | 40 | 3,580 | |
| PHASE II, Soil Sample | 60.00 EA | 40,200 | 6,030 | 2,310 | 3,880 | 360 | 530 | 53,310 | 888.52 |
| SURFACE SOIL | | 72,900 | 10,940 | 4,190 | 7,040 | 650 | 960 | 96,680 | |
| SAMPLING SOIL, SED & SOLID WASTE | | 72,900 | 10,940 | 4,190 | 7,040 | 650 | 960 | 96,680 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 72,900 | 10,940 | 4,190 | 7,040 | 650 | 960 | 96,680 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 05 FENCING | | | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | | | | |

| | | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| 06 03 05 01 01 01 | Temporary Fencing - 6' Security | 400.00 LF | 10,000 | 1,500 | 580 | 970 | 90 | 130 | 13,260 | 33.15 |
| | Temporary Fencing | 400.00 LF | 10,000 | 1,500 | 580 | 970 | 90 | 130 | 13,260 | 33.15 |
| | FENCING | | 10,000 | 1,500 | 580 | 970 | 90 | 130 | 13,260 | |
| | FENCING | | 10,000 | 1,500 | 580 | 970 | 90 | 130 | 13,260 | |
| | SITE WORK | | 10,000 | 1,500 | 580 | 970 | 90 | 130 | 13,260 | |
| 06 08 SOLIDS COLLECTION & CONTAINMENT | | | | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | | | | |
| 06 08 01 03 01 01 | Excavate/Load PCB Soils | 350.00 CY | 1,410 | 210 | 80 | 140 | 10 | 20 | 1,870 | 5.34 |
| 06 08 01 03 01 02 | Transport PCB Soils - TEXAS | 350.00 CY | 750,150 | 112,520 | 43,130 | 72,460 | 6,690 | 9,850 | 994,810 | 2842.32 |
| 06 08 01 03 01 03 | PPEquip, Modified Class D | 3.00 DAY | 2,010 | 300 | 120 | 190 | 20 | 30 | 2,660 | 888.07 |
| | PHASE I, Excavate/Load PCB Soils | 350.00 CY | 753,570 | 113,040 | 43,330 | 72,790 | 6,720 | 9,890 | 999,350 | 2855.27 |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | | | | |
| 06 08 01 03 02 01 | Excavate/Load PCB Soils | 250.00 CY | 1,010 | 150 | 60 | 100 | 10 | 10 | 1,330 | 5.34 |
| 06 08 01 03 02 02 | Transport PCB Soils - TEXAS | 250.00 CY | 535,250 | 80,290 | 30,780 | 51,710 | 4,780 | 7,030 | 709,820 | 2839.29 |
| 06 08 01 03 02 03 | PPEquip, Modified Class D | 2.00 DAY | 1,340 | 200 | 80 | 130 | 10 | 20 | 1,780 | 888.07 |
| | PHASE II,Excavate/Load PCB Soils | 250.00 CY | 537,600 | 80,640 | 30,910 | 51,930 | 4,800 | 7,060 | 712,930 | 2851.74 |
| 06 08 01 03 03 Post Removal | | | | | | | | | | |
| 06 08 01 03 03 01 | Excavate/Load Crew | 1.00 DAY | 930 | 140 | 50 | 90 | 10 | 10 | 1,230 | 1227.75 |
| 06 08 01 03 03 02 | PPEquip, Modified Class D | 1.00 DAY | 670 | 100 | 40 | 60 | 10 | 10 | 890 | 888.07 |
| | Post Removal | | 1,600 | 240 | 90 | 150 | 10 | 20 | 2,120 | |
| 06 08 01 03 91 Safety and Quality Assurance | | | | | | | | | | |
| | Safety and Quality Assurance | 3.00 WK | 15,600 | 2,340 | 900 | 1,510 | 140 | 200 | 20,690 | 6895.99 |
| | CONTAMINATED SOIL | | 1,308,360 | 196,250 | 75,230 | 126,390 | 11,670 | 17,180 | 1,735,080 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| EXCAVATION | | 1,308,360 | 196,250 | 75,230 | 126,390 | 11,670 | 17,180 | 1,735,080 | |
| SOLIDS COLLECTION & CONTAINMENT | | 1,308,360 | 196,250 | 75,230 | 126,390 | 11,670 | 17,180 | 1,735,080 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | | | | | | | | |
| PH I, Demob and take down | | 6,070 | 910 | 350 | 590 | 50 | 80 | 8,040 | |
| 06 21 04 01 02 PH II, Demob and Take down | | | | | | | | | |
| PH II, Demob and Take down | | 6,070 | 910 | 350 | 590 | 50 | 80 | 8,040 | |
| TRANSPORTATION | | 12,130 | 1,820 | 700 | 1,170 | 110 | 160 | 16,090 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 12,130 | 1,820 | 700 | 1,170 | 110 | 160 | 16,090 | |
| DEMOBILIZATION | | 12,130 | 1,820 | 700 | 1,170 | 110 | 160 | 16,090 | |
| REMEDIAL ACTION | | 1,420,000 | 213,000 | 81,650 | 137,170 | 12,670 | 18,640 | 1,883,140 | |
| HANFORD: REMEDIATION | | 1,420,000 | 213,000 | 81,650 | 137,170 | 12,670 | 18,640 | 1,883,140 | |
| S & A | | | | | | | | 282,470 | |
| SUBTOTAL | | | | | | | | 2,165,610 | |
| CONTINGENCY | | | | | | | | 532,250 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 2,697,860 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION AND PREPATORY WORK
06 01 01. MOB OF EQUIPMENT & PERSONNEL
06 01 01 1. TRANSPORTATION
06 01 01 1 01-. Ph I, Equip Mob, Detailed List
This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 3235 > | Mob, FEnd Ldr, wheel 1-1/2-3 cy Atriculated Fr, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 6115 > | Mob, Dozer, Crawler, 50-100 hp w/blade, incl set up 100 mi radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 7131 > | Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 150.00 |
| USR AA <01505 8921 > | Mob, Decontamination Trailer w/25,000 GVW Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 135.00 |
| USR AA <01505 1101 > | Mob - Field Office Trailer | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| | Ph I, Equip Mob, Detailed List | | | 0 | 0 | 2,035 | 0 | 0 | 2,035 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 01 1 02-. Ph II, Equip Mob, Detailed List<br>This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi radius mob is assumed. | | | | | | | | | |
| USR AA <01505 3235 > Mob, FEnd Ldr, wheel 1-1/2-3 cy Atriculated Fr, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 6115 > Mob, Dozer, Crawler, 50-100 hp w/blade, incl set up 100 mi radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 7131 > Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 150.00 |
| USR AA <01505 8921 > Mob, Decontamination Trailer w/25,000 GVW Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 135.00 |
| USR AA <01505 1101 > Mob - Field Office Trailer | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| Ph II, Equip Mob, Detailed List | | | 0 | 0 | 2,035 | 0 | 0 | 2,035 | |
| TRANSPORTATION | | | 0 | 0 | 4,070 | 0 | 0 | 4,070 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 03. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 03 01. TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 03 01 01. Ph I, Office Trailers - setup<br>Allow 100mhrs for setup of contractor's trailer and equipment and site layout. An allowance for some equipment and material has been added.<br>Ph I, Office Trailers - setup | 100.00 HR | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| 06 01 03 01 02. Ph II, Office Trailers - setup<br>Allow 100mhrs for setup of contractor's trailer and equipment and site layout. An allowance for some equipment and material has been added.<br>Ph II, Office Trailers - setup | 100.00 HR | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| TRAILERS AND BUILDINGS | | | 0 | 5,000 | 500 | 200 | 0 | 5,700 | |

| 06 01. MOBILIZATION AND PREPATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 03 02. DECONTAMINATION FACILITIES | | | | | | | | | | | |
| 06 01 03 02 01. Personnel Decon Facilities | | | | | | | | | | | |
| Personnel Decon Facilities | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 01 03 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | | | |
| Equip/Vehicle Decon Facilities | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 01 03 02 03. Ph I, Trailers - assbly/setup | | | | | | | | | | | |
| Allow 100mhrs for setup of decontaminatio trailer and equipment and site layout. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Ph I, Trailers - assbly/setup | 120.00 | HR | | | 0 | 3,000 | 300 | 120 | 0 | 3,420 | 28.50 |
| 06 01 03 02 04. Ph II, Trailers - assbly/setup | | | | | | | | | | | |
| Allow 100mhrs for setup of decontaminatio trailer and equipment and site layout. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Ph II, Trailers - assbly/setup | 120.00 | HR | | | 0 | 3,000 | 300 | 120 | 0 | 3,420 | 28.50 |
| DECONTAMINATION FACILITIES | | | | | 0 | 6,000 | 600 | 240 | 0 | 6,840 | |

06 02. MONITOR, SAMPLE, TEST, ANALYSIS

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 06. SAMPLING SOIL, SED & SOLID WASTE
06 02 06 01. SURFACE SOIL
06 02 06 01 01. PHASE I, Soil Sample
After the top 12" of soil is removed, soil samples will be taken.

06 02 06 01 01 01. Soil Sampling
Sample on 15'x15' grid (50 samples) with analysis at off site lab for BEHP only, with 14-day turnaround. Method 8270. Add 10 QA samples.

| | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 30,000 | 30,000 | 500.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE I, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 32,700 | 32,700 | 545.00 |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02 06 01 02. PHASE II, Soil Sample<br>Another set of soil samples will be taken after the next 6" soil layer is excavated. | | | | | | | | | |
| 06 02 06 01 02 01. Soil Sampling<br>Same as Phase I, except with 7-day turnaround, add 25%. | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 37,500 | 37,500 | 625.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| PHASE II, Soil Sample | 60.00 EA | | 0 | 0 | 0 | 0 | 40,200 | 40,200 | 670.00 |
| SURFACE SOIL | | | 0 | 0 | 0 | 0 | 72,900 | 72,900 | |

06 03. SITE WORK

| | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03. SITE WORK | | | | | | | | | | | |
| 06 03 05. FENCING | | | | | | | | | | | |
| 06 03 05 01. FENCING | | | | | | | | | | | |
| 06 03 05 01 01. Temporary Fencing | | | | | | | | | | | |
| 06 03 05 01 01 01. Temporary Fencing - 6' Security<br>A 6' Security fence will be required during the duration of the cleanup activities around the work site. Cost taken from recent bid quotes. "Other" cost for removal. | | | | | | | | | | | |
| Temporary Fencing - 6' Security | 400.00 | LF | | | 0 | 2,000 | 1,000 | 5,000 | 2,000 | 10,000 | 25.00 |
| Temporary Fencing | 400.00 | LF | | | 0 | 2,000 | 1,000 | 5,000 | 2,000 | 10,000 | 25.00 |
| FENCING | | | | | 0 | 2,000 | 1,000 | 5,000 | 2,000 | 10,000 | |

| 06 08. SOLIDS COLLECTION & CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08. SOLIDS COLLECTION & CONTAINMENT | | | | | | | | | | | |
| 06 08 01. EXCAVATION | | | | | | | | | | | |
| 06 08 01 03. CONTAMINATED SOIL | | | | | | | | | | | |
| 06 08 01 03 01. PHASE I, Excavate/Load PCB Soils | | | | | | | | | | | |
| 06 08 01 03 01 01. Excavate/Load PCB Soils | | | | | | | | | | | |
| USR AA <02220 0000 > Excavate top 36-inches of soil | | | | | 0.06 | 1.59 | 0.54 | 0.00 | 0.00 | 2.13 | |
| | 350.00 | CY | XXQNA | 28.75 | 21 | 556 | 190 | 0 | 0 | 745 | 2.13 |
| USR AA <02220 0000 > Load excavated/stockpiled soil load in 20-ton ROLL OFF units for use on trucks that are DOT approved for hazardeous waste hauler. Assume 3,100lb/bcy | | | | | 0.03 | 0.94 | 0.95 | 0.00 | 0.00 | 1.90 | |
| | 350.00 | CY | XXQMG | 28.75 | 12 | 330 | 334 | 0 | 0 | 664 | 1.90 |
| Excavate/Load PCB Soils | 350.00 | CY | | | 33 | 886 | 523 | 0 | 0 | 1,409 | 4.03 |
| 06 08 01 03 01 02. Transport PCB Soils - TEXAS | | | | | | | | | | | |
| USR AA <02220 0000 > Transport soil to Port Arthur TX 350 cy x 3,100lb/cy / 2000lb/ton = 542.5 tons @ 20 tons/truck = 27.13 trucks use 28 trucks | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 7000.00 | 7000.00 | |
| | 28.00 | TRK | | 0.00 | 0 | 0 | 0 | 0 | 196,000 | 196,000 | 7000.00 |
| USR AA <02220 0000 > Incinerator processing fee | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 0.50 | |
| | 1085000 | LB | | 0.00 | 0 | 0 | 0 | 0 | 542,500 | 542,500 | 0.50 |
| USR AA <02220 0000 > Texas state environmental tax | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 20.00 | |
| | 542.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 10,850 | 10,850 | 20.00 |
| USR AA <02220 0000 > Soil profile fee | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 800.00 | 800.00 | |
| | 1.00 | EA | | 0.00 | 0 | 0 | 0 | 0 | 800 | 800 | 800.00 |
| Transport PCB Soils - TEXAS | 350.00 | CY | | | 0 | 0 | 0 | 0 | 750,150 | 750,150 | 2143.29 |
| 06 08 01 03 01 03. PPEquip, Modified Class D | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 12.00 | EA | N/A | 0.00 | 0 | 0 | 138 | 0 | 0 | 138 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 12.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 91 | 0 | 91 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 12.00 | PR | N/A | 0.00 | 0 | 0 | 28 | 0 | 0 | 28 | 2.30 |

| 06 08. SOLIDS COLLECTION & CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HTW AA <01951 5726 > Half-Mask Air Purifying Respirators | | | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| | 12.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 239 | 0 | 239 | 19.94 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| | 3.00 | DAY | ULABA | 0.13 | 30 | 703 | 4 | 104 | 0 | 812 | 270.58 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | 3.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 81 | 0 | 81 | 26.95 |
| HTW AA <01951 5723 > Cartridges, Respirator | | | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | 24.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 621 | 0 | 621 | 25.87 |
| PPEquip, Modified Class D | 3.00 | DAY | | | 30 | 703 | 170 | 1,136 | 0 | 2,009 | 669.66 |
| PHASE I, Excavate/Load PCB Soils | 350.00 | CY | | | 63 | 1,588 | 693 | 1,136 | 750,150 | 753,568 | 2153.05 |

| 06 08. SOLIDS COLLECTION & CONTAINMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 02. PHASE II,Excavate/Load PCB Soils | | | | | | | | | | | |
| 06 08 01 03 02 01. Excavate/Load PCB Soils | | | | | | | | | | | |
| USR AA <02220 0000 > Excavate next 24-inches of soil | | | | | 0.06 | 1.59 | 0.54 | 0.00 | 0.00 | 2.13 | |
| | 250.00 | CY | XXQNA | 28.75 | 15 | 397 | 135 | 0 | 0 | 532 | 2.13 |
| USR AA <02220 0000 > Load excavated/stockpiled soil load in 20-ton roll off units and dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy | | | | | 0.03 | 0.94 | 0.95 | 0.00 | 0.00 | 1.90 | |
| | 250.00 | CY | XXQMG | 28.75 | 9 | 236 | 238 | 0 | 0 | 474 | 1.90 |
| Excavate/Load PCB Soils | 250.00 | CY | | | 24 | 633 | 374 | 0 | 0 | 1,006 | 4.03 |
| 06 08 01 03 02 02. Transport PCB Soils - TEXAS | | | | | | | | | | | |
| USR AA <02220 0000 > Transport soil to Port Arthur TX 250 cy x 3,100lb/cy / 2000lb/ton = 387.5 tons @ 20 tons/truck = 19.38 trucks use 20 trucks | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 7000.00 | 7000.00 | |
| | 20.00 | TRK | | 0.00 | 0 | 0 | 0 | 0 | 140,000 | 140,000 | 7000.00 |
| USR AA <02220 0000 > Incineration fee | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 0.50 | |
| | 775000 | LB | | 0.00 | 0 | 0 | 0 | 0 | 387,500 | 387,500 | 0.50 |
| USR AA <02220 0000 > Texas state environmental tax | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 20.00 | |
| | 387.50 | TON | | 0.00 | 0 | 0 | 0 | 0 | 7,750 | 7,750 | 20.00 |
| Transport PCB Soils - TEXAS | 250.00 | CY | | | 0 | 0 | 0 | 0 | 535,250 | 535,250 | 2141.00 |
| 06 08 01 03 02 03. PPEquip, Modified Class D | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 92 | 0 | 0 | 92 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 60 | 0 | 60 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 8.00 | PR | N/A | 0.00 | 0 | 0 | 18 | 0 | 0 | 18 | 2.30 |
| HTW AA <01951 5726 > Half-Mask Air Purifying Respirators | | | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| | 8.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 160 | 0 | 160 | 19.94 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| | 2.00 | DAY | ULABA | 0.13 | 20 | 469 | 3 | 70 | 0 | 541 | 270.58 |

| 06 08. SOLIDS COLLECTION & CONTAINMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| Fans (Monthly Rental) | 2.00 DAY N/A | 0.00 | 0 | 0 | 0 | 54 | 0 | 54 | 26.95 |
| HTW AA <01951 5723 > Cartridges, Respirator | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | 16.00 EA N/A | 0.00 | 0 | 0 | 0 | 414 | 0 | 414 | 25.87 |
| PPEquip, Modified Class D | 2.00 DAY | | 20 | 469 | 113 | 757 | 0 | 1,339 | 669.66 |
| PHASE II,Excavate/Load PCB Soils | 250.00 CY | | 44 | 1,101 | 487 | 757 | 535,250 | 537,596 | 2150.38 |

| 06 08. SOLIDS COLLECTION & CONTAINMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 03. Post Removal | | | | | | | | | |
| 06 08 01 03 03 01. Excavate/Load Crew | | | | | | | | | |
| USR AA <02220 0000 > Excavation crew | | | 14.00 | 365.22 | 124.54 | 0.00 | 0.00 | 489.76 | |
| | 1.00 DAY XXQNA | 0.13 | 14 | 365 | 125 | 0 | 0 | 490 | 489.76 |
| USR AA <02220 0000 > Load crew load in 28-ton dump trucks - DOT approved hazardeous waste hauler. assume 3,100lb/bcy | | | 8.00 | 216.72 | 219.31 | 0.00 | 0.00 | 436.03 | |
| | 1.00 DAY XXQMG | 0.13 | 8 | 217 | 219 | 0 | 0 | 436 | 436.03 |
| Excavate/Load Crew | 1.00 DAY | | 22 | 582 | 344 | 0 | 0 | 926 | 925.80 |
| 06 08 01 03 03 02. PPEquip, Modified Class D | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 4.00 EA N/A | 0.00 | 0 | 0 | 46 | 0 | 0 | 46 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 4.00 EA N/A | 0.00 | 0 | 0 | 0 | 30 | 0 | 30 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 4.00 PR N/A | 0.00 | 0 | 0 | 9 | 0 | 0 | 9 | 2.30 |
| HTW AA <01951 5726 > Half-Mask Air Purifying Respirators | | | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 19.94 | |
| | 4.00 EA N/A | 0.00 | 0 | 0 | 0 | 80 | 0 | 80 | 19.94 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | 10.00 | 234.30 | 1.45 | 34.83 | 0.00 | 270.58 | |
| | 1.00 DAY ULABA | 0.13 | 10 | 234 | 1 | 35 | 0 | 271 | 270.58 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | 1.00 DAY N/A | 0.00 | 0 | 0 | 0 | 27 | 0 | 27 | 26.95 |
| HTW AA <01951 5723 > Cartridges, Respirator | | | 0.00 | 0.00 | 0.00 | 25.87 | 0.00 | 25.87 | |
| | 8.00 EA N/A | 0.00 | 0 | 0 | 0 | 207 | 0 | 207 | 25.87 |
| PPEquip, Modified Class D | 1.00 DAY | | 10 | 234 | 57 | 379 | 0 | 670 | 669.66 |
| Post Removal | | | 32 | 816 | 401 | 379 | 0 | 1,595 | |

| 06 08. SOLIDS COLLECTION & CONTAINMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 08 01 03 91. Safety and Quality Assurance | | | | | | | | | |
| Safety/QA crew: | | | | | | | | | |
| WHC HPT: $50/hr x 40hrs = $2,000 | | | | | | | | | |
| Safety: $70/hr x 40hrs = $2,800 | | | | | | | | | |
| Special Assistance to QA: $50/hr x 8 hrs = $ 400 | | | | | | | | | |
| Total cost/week $5,200 | | | | | | | | | |
| Safety and Quality Assurance | 3.00 WK | | 0 | 15,600 | 0 | 0 | 0 | 15,600 | 5200.00 |
| CONTAMINATED SOIL | | | 139 | 19,106 | 1,581 | 2,272 | 1,285,400 | 1,308,359 | |

| 06 21. DEMOBILIZATION | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 21. DEMOBILIZATION | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01. PH I, Demob and take down | | | | | | | | | |
| Allow 75% of mobilization and setup costs. | | | | | | | | | |
| PH I, Demob and take down | | | 0 | 4,125 | 1,940 | 0 | 0 | 6,065 | |
| 06 21 04 01 02. PH II, Demob and Take down | | | | | | | | | |
| Allow 75% of mobilization and setup costs. | | | | | | | | | |
| PH II, Demob and Take down | | | 0 | 4,125 | 1,940 | 0 | 0 | 6,065 | |
| TRANSPORTATION | | | 0 | 8,250 | 3,880 | 0 | 0 | 12,130 | |
| HANFORD: REMEDIATION | | | 139 | 40,356 | 11,631 | 7,712 | 1,360,300 | 1,419,999 | |

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 5
Table of Contents Levels : 6

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | | | | | | | | |
| Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |

Print Unit Cost Row : Y
Print Page Footer : Y
Show Cost Codes : Y

COLUMNS OPTIONS
Print Crew Id : Y
Crew Output : Y
Unit Cost : Y

UPB TITLES
No. of Levels to Print : 0
Bracket Titles With : - :
Include titles Notes : Y

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y
Link Listing : N

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Detail : | Y | | | | | | | | | |
| Project : | N | Y | Y | N | N | N | N | Y | Y |
| Contractor : | N | N | | N | N | N | N | N | N | N |
| Division : | N | N | N | Y | N | N | N | N | N | N |
| System : | N | N | N | Y | N | N | N | N | N | N |
| 2nd View : | N | | | | | | | | | |
| Crew : | Y | | | Y | N | N | N | N | N | N |
| Labor : | Y | | | | | | | | | |
| Equipment : | Y | | | | | | | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTION | | | | | | |
| S & A | P | 15.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION AND PREPATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | |
| 06 01 01 1 01- Ph I, Equip Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 01 1 02- Ph II, Equip Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 03 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 03 01 01 Ph I, Office Trailers - setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 01 02 Ph II, Office Trailers - setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 DECONTAMINATION FACILITIES | | | | | | |
| 06 01 03 02 01 Personnel Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 02 Equip/Vehicle Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 03 Ph I, Trailers - assbly/setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 03 02 04 Ph II, Trailers - assbly/setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | |
| 06 02 06 SAMPLING SOIL, SED & SOLID WASTE | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | |
| 06 02 06 01 01 PHASE I, Soil Sample | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 02 06 01 01 02 QA Report | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 02 PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 02 06 01 02 02 QA Report | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 05 FENCING | | | | | | | |
| 06 03 05 01 FENCING | | | | | | | |
| 06 03 05 01 01 Temporary Fencing | | | | | | | |
| 06 03 05 01 01 01 Temporary Fencing - 6' Security | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 08 SOLIDS COLLECTION & CONTAINMENT | | | | | | | |
| 06 08 01 EXCAVATION | | | | | | | |
| 06 08 01 03 CONTAMINATED SOIL | | | | | | | |
| 06 08 01 03 01 PHASE I, Excavate/Load PCB Soils | | | | | | | |
| 06 08 01 03 01 01 Excavate/Load PCB Soils | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 40.00 | | | | |
| 06 08 01 03 01 02 Transport PCB Soils - TEXAS | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 08 01 03 01 03 PPEquip, Modified Class D | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 08 01 03 02 PHASE II,Excavate/Load PCB Soils | | | | | | | |
| 06 08 01 03 02 01 Excavate/Load PCB Soils | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 40.00 | | | | |
| 06 08 01 03 02 02 Transport PCB Soils - TEXAS | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 08 01 03 02 03 PPEquip, Modified Class D | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 08 01 03 03 Post Removal | | | | | | | |
| 06 08 01 03 03 01 Excavate/Load Crew | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 08 01 03 03 02 PPEquip, Modified Class D | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 08 01 03 91 Safety and Quality Assurance | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 PH I, Demob and take down | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 21 04 01 02 PH II, Demob and Take down | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT POFFIN: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, HORN RAPIDS LANDFILL, OFF-SITE INCIN
** CREW BACKUP **

TIME 08:09:43

BACKUP PAGE 1

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | ULABA | 1 B-laborer + Small Tools | | | PROD = 100% | | | | CREW HOURS = | 96 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.83 | 0.25 | 5.96 | | | 5.96 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.33 | 1.00 | 23.33 | | | 23.33 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 1.25 | 29.29 | 0.13 | 0.18 | 29.47 |
| | XXQMG | 1 X-eqoprmed + 1 Front End Ldr, 2-1/2 Cy, Wheel | | | PROD = 100% | | | | CREW HOURS = | 58 |
| MIL | L40CA004 E | LDR,FE,WH, 2-1/2CY, ARTIC, 936E | 1.00 | HR | 27.41 | | | 1.00 | 27.41 | 27.41 |
| MIL | X-EQOPRMEDL | Outside Equip. Op. Medium | 1.00 | HR | 27.09 | 1.00 | 27.09 | | | 27.09 |
| | TOTAL | | | | | 1.00 | 27.09 | 1.00 | 27.41 | 54.50 |
| | XXQNA | 1 X-eqoprmed + 1 Dozer, Cat D-38, 65 Hp | | | PROD = 100% | | | | CREW HOURS = | 58 |
| MIL | T10CA001 E | BLADE,POWER ANGLE TILT,FOR D3 | 1.00 | HR | 1.87 | | | 1.00 | 1.87 | 1.87 |
| MIL | T15CA003 E | DOZER,CWLR,D-3C,PS,(ADD BLADE) | 1.00 | HR | 13.70 | | | 1.00 | 13.70 | 13.70 |
| MIL | X-LABORER L | Outside Laborer | 0.50 | HR | 23.33 | 0.50 | 11.67 | | | 11.67 |
| MIL | X-EQOPRMEDL | Outside Equip. Op. Medium | 1.00 | HR | 27.09 | 1.00 | 27.09 | | | 27.09 |
| MIL | X-EQOPRMEDF | Outside Equip. Op. Medium | 0.25 | HR | 27.59 | 0.25 | 6.90 | | | 6.90 |
| | TOTAL | | | | | 1.75 | 45.65 | 2.00 | 15.57 | 61.22 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-LABORER | Laborer/Helper | 23.33 | 0.0% | 0.0% | 0.00 | 0.00 | 23.33 | HR | 10/15/92 | 22.36 | 120 |
| MIL | X-EQOPRMED | Outside Equipment Oper. Medium | 27.09 | 0.0% | 0.0% | 0.00 | 0.00 | 27.09 | HR | 10/15/92 | 25.84 | 130 |
| MIL | X-LABORER | Outside Laborer | 23.33 | 0.0% | 0.0% | 0.00 | 0.00 | 23.33 | HR | 10/15/92 | 22.36 | 29 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | L40CA004 | LDR,FE,WH, 2-1/2CY, ARTIC, 936E | 8.03 | 2.79 | 3.99 | 1.6 | 8.34 | 2.26 | 0.34 | 27.41 HR | 58 |
| MIL | T10CA001 | BLADE,POWER ANGLE TILT,FOR D3 | 0.75 | 0.22 | | 0.0 | 0.82 | | | 1.87 HR | 58 |
| MIL | T15CA003 | DOZER,CWLR,D-3C,PS,(ADD BLADE) | 3.51 | 1.14 | 2.14 | 0.7 | 6.14 | | | 13.70 HR | 58 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 HR | 12 |

THIS PAGE INTENTIONALLY
LEFT BLANK

---

No errors detected...

* * * END OF ERROR REPORT * * *

PRECEDING PAGE BLANK
LEFT BLANK

DOE/RL-92-67

# UN-1100-6
# BIOREMEDIATION

9 3 1 2 3 2 1 7 5 8

LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
UN-1100-6, BEHPs
BIOREMEDIATION

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/23/92
Est Construction Time: 525 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This estimate covers the Bioremediation of the UN-1100-6 sub unit of the 1100-EM-1 Operable Unit. This is a cleanup method for the Soil Remediation Alternative S-3 group. The Bioremediation of the BEHP contaminated soils will be done over a two year period in a geomembrane lined containment area. This estimate includes the operational costs for the two year period.

1. Normal Contingency for this level of estimate is 20-30%.
2. Using 50% Contingency for Setup & Testing items, as they are undefined.
3. Using 30% Contingency based on uncertainty of the quantities given.

THIS PAGE INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 6.....1
PROJECT INDIRECT SUMMARY - LEVEL 6.....7

DETAILED ESTIMATE DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & FACILITIES
1. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Assembly and Setup
01. Assembly and Setup.....3
02. DECONTAMINATION FACILITIES
01. Assembly and Setup
01. Assembly and Setup.....4
05. PRELIMINARY SITE PREP
02. Perimeter Security Fence.....5
05. CONSTRUCT TEMPORARY UTILITIES
01. POWER AND SITE LIGHTING
01. Temporary Power
01. Temporary Power (3 PH, 800 AMP).....6
03. WATER, SEWER, AND GAS
01. Temporary Water/Sewer Service
01. Temporary Water Service.....7
02. Temporary Sewer Service.....7
02. MONITOR, SAMPLE, TEST, ANALYSIS
06. SAMPLING SOIL, SEDIMENT & SOLIDS
01. SURFACE SOIL
00. Preliminary Treatability Study.....8
01. Excav., PHASE I, Soil Sample
01. Soil Sampling.....8
02. QA Report.....8
02. Excav., PHASE II, Soil Sample
01. Soil Sampling.....9
02. QA Report.....9
03. 1st Year, Soil Samples
01. Soil Sampling.....10
02. QA Report.....10
04. 2nd Year, Soil Samples
01. Soil Sampling.....11
02. QA Report.....11
91. QA/Safety Monitoring

DETAILED ESTIMATE DETAIL PAGE

01. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....12
03. SITE WORK
03. EARTHWORK
04. EARTHWORK
01. Construct Lined Containment Area
01. Earth work, Containment Area.....13
02. Geomembrane Liner.....13
03. Collection System.....13
11. BIOLOGICAL TREATMENT
03. LAND TREATMENT/FARMING
01. SOLIDS PREPARATION & HANDLING
01. Soil Excavation/Placement
01. PPEquip, Class D.....15
02. Excavate, haul to Containment.....15
02. Soil Mixing
02. Soil Mixing - By disks.....16
02. LIQUIDS PREPARATION & HANDLING
01. Release/Collect Nutrient System
01. Sprinkler System Setup.....17
02. Bioremediation Weekly Operation
01. Bioremediation Weekly Operation.....18
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & FACILITIES
01. TRANSPORTATION
01. Demobilization
01. Demob - Equipment & Setup.....19

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1
LABOR BACKUP.....3
EQUIPMENT BACKUP.....4

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 4,130 | 620 | 950 | 5,700 | | 1 |
| TRANSPORTATION | | 4,130 | 620 | 950 | 5,700 | | |
| MOB OF EQUIPMENT & FACILITIES | | 4,130 | 620 | 950 | 5,700 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | 100.00 HR | 3,990 | 600 | 2,290 | 6,880 | 68.79 | 2 |
| Assembly and Setup | | 3,990 | 600 | 2,290 | 6,880 | | 2 |
| TRAILERS AND BUILDINGS | | 3,990 | 600 | 2,290 | 6,880 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | 80.00 HR | 3,190 | 480 | 1,830 | 5,500 | 68.79 | 2 |
| Assembly and Setup | | 3,190 | 480 | 1,830 | 5,500 | | 2 |
| DECONTAMINATION FACILITIES | | 3,190 | 480 | 1,830 | 5,500 | | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 01 04 05 02 Perimeter Security Fence | | | | | | | |
| Perimeter Security Fence | 520.00 LF | 17,280 | 2,590 | 3,970 | 23,850 | 45.86 | 1 |
| PRELIMINARY SITE PREP | | 17,280 | 2,590 | 3,970 | 23,850 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 24,460 | 3,670 | 8,100 | 36,230 | | |
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | | |
| 06 01 05 01 POWER AND SITE LIGHTING | | | | | | | |
| 06 01 05 01 01 Temporary Power | | | | | | | |
| 06 01 05 01 01 01 Temporary Power (3 PH, 800 AMP) | | 3,320 | 500 | 1,910 | 5,730 | | 2 |
| Temporary Power | | 3,320 | 500 | 1,910 | 5,730 | | |
| POWER AND SITE LIGHTING | | 3,320 | 500 | 1,910 | 5,730 | | |
| 06 01 05 03 WATER, SEWER, AND GAS | | | | | | | |
| 06 01 05 03 01 Temporary Water/Sewer Service | | | | | | | |
| 06 01 05 03 01 01 Temporary Water Service | | 3,320 | 500 | 1,910 | 5,730 | | 2 |
| 06 01 05 03 01 02 Temporary Sewer Service | | 3,320 | 500 | 1,910 | 5,730 | | 2 |
| Temporary Water/Sewer Service | | 6,650 | 1,000 | 3,820 | 11,460 | | |
| WATER, SEWER, AND GAS | | 6,650 | 1,000 | 3,820 | 11,460 | | |
| CONSTRUCT TEMPORARY UTILITIES | | 9,970 | 1,500 | 5,730 | 17,200 | | |
| MOBILIZATION & PREPARATORY WORK | | 38,560 | 5,780 | 14,780 | 59,130 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SEDIMENT & SOLIDS | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 02 06 01 00 Preliminary Treatability Study | | | | | | | |
| Preliminary Treatability Study | | 13,290 | 1,990 | 3,060 | 18,340 | | 1 |
| 06 02 06 01 01 Excav., PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 39,880 | 5,980 | 9,170 | 55,030 | 917.18 | 1 |
| 06 02 06 01 01 02 QA Report | | 3,590 | 540 | 830 | 4,950 | | 1 |
| Excav., PHASE I, Soil Sample | | 43,470 | 6,520 | 10,000 | 59,980 | | |
| 06 02 06 01 02 Excav., PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 49,850 | 7,480 | 11,460 | 68,790 | 1146.48 | 1 |
| 06 02 06 01 02 02 QA Report | | 3,590 | 540 | 830 | 4,950 | | 1 |
| Excav., PHASE II, Soil Sample | 60.00 EA | 53,440 | 8,020 | 12,290 | 73,740 | 1229.02 | |
| 06 02 06 01 03 1st Year, Soil Samples | | | | | | | |
| 06 02 06 01 03 01 Soil Sampling | 60.00 EA | 39,880 | 5,980 | 9,170 | 55,030 | 917.18 | 1 |
| 06 02 06 01 03 02 QA Report | | 3,590 | 540 | 830 | 4,950 | | 1 |
| 1st Year, Soil Samples | | 43,470 | 6,520 | 10,000 | 59,980 | | |
| 06 02 06 01 04 2nd Year, Soil Samples | | | | | | | |
| 06 02 06 01 04 01 Soil Sampling | 60.00 EA | 39,880 | 5,980 | 9,170 | 55,030 | 917.18 | 1 |
| 06 02 06 01 04 02 QA Report | | 3,590 | 540 | 830 | 4,950 | | 1 |
| 2nd Year, Soil Samples | | 43,470 | 6,520 | 10,000 | 59,980 | | |
| SURFACE SOIL | | 197,130 | 29,570 | 45,340 | 272,040 | | |
| SAMPLING SOIL, SEDIMENT & SOLIDS | | 197,130 | 29,570 | 45,340 | 272,040 | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 33.00 WK | 228,100 | 34,210 | 52,460 | 314,780 | 9538.68 | 1 |
| QA/Safety Monitoring | | 228,100 | 34,210 | 52,460 | 314,780 | | |
| QA/Safety Monitoring | | 228,100 | 34,210 | 52,460 | 314,780 | | |
| QA/Safety Monitoring | | 228,100 | 34,210 | 52,460 | 314,780 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 425,230 | 63,780 | 97,800 | 586,810 | | |
| 06 03 SITE WORK | | | | | | | |
| 06 03 03 EARTHWORK | | | | | | | |
| 06 03 03 04 EARTHWORK | | | | | | | |
| 06 03 03 04 01 Construct Lined Containment Area | | | | | | | |
| 06 03 03 04 01 01 Earth work, Containment Area | 500.00 CY | 2,560 | 380 | 880 | 3,820 | 7.65 | 3 |
| 06 03 03 04 01 02 Geomembrane Liner | 2100.00 SY | 21,720 | 3,260 | 7,490 | 32,470 | 15.46 | 3 |
| 06 03 03 04 01 03 Collection System | | 16,160 | 2,420 | 5,580 | 24,170 | | 3 |
| Construct Lined Containment Area | | 40,440 | 6,070 | 13,950 | 60,450 | | |
| EARTHWORK | | 40,440 | 6,070 | 13,950 | 60,450 | | |
| EARTHWORK | | 40,440 | 6,070 | 13,950 | 60,450 | | |
| SITE WORK | | 40,440 | 6,070 | 13,950 | 60,450 | | |
| 06 11 BIOLOGICAL TREATMENT | | | | | | | |
| 06 11 03 LAND TREATMENT/FARMING | | | | | | | |
| 06 11 03 01 SOLIDS PREPARATION & HANDLING | | | | | | | |
| 06 11 03 01 01 Soil Excavation/Placement | | | | | | | |
| 06 11 03 01 01 01 PPEquip, Class D | 3.00 DAY | 1,520 | 230 | 440 | 2,180 | 728.03 | 1 |
| 06 11 03 01 01 02 Excavate, haul to Containment | 440.00 CY | 2,900 | 430 | 1,000 | 4,330 | 9.85 | 3 |

| | | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|---|
| | Soil Excavation/Placement | 440.00 CY | 4,420 | 660 | 1,440 | 6,520 | 14.81 | |
| 06 11 03 01 02 | Soil Mixing | | | | | | | |
| 06 11 03 01 02 02 | Soil Mixing - By disks | 72.00 WK | 38,690 | 5,800 | 11,120 | 55,620 | 772.53 | 1 |
| | Soil Mixing | 1.00 WK | 38,690 | 5,800 | 11,120 | 55,620 | 55622.00 | |
| | SOLIDS PREPARATION & HANDLING | | 43,110 | 6,470 | 12,560 | 62,140 | | |
| 06 11 03 02 | LIQUIDS PREPARATION & HANDLING | | | | | | | |
| 06 11 03 02 01 | Release/Collect Nutrient System | | | | | | | |
| 06 11 03 02 01 01 | Sprinkler System Setup | | 2,260 | 340 | 780 | 3,380 | | 1 |
| | Release/Collect Nutrient System | | 2,260 | 340 | 780 | 3,380 | | |
| 06 11 03 02 02 | Bioremediation Weekly Operation | | | | | | | |
| 06 11 03 02 02 01 | Bioremediation Weekly Operation | 72.00 WK | 101,170 | 15,180 | 29,090 | 145,440 | 2019.94 | 1 |
| | Bioremediation Weekly Operation | | 101,170 | 15,180 | 29,090 | 145,440 | | |
| | LIQUIDS PREPARATION & HANDLING | | 103,430 | 15,520 | 29,870 | 148,820 | | |
| | LAND TREATMENT/FARMING | | 146,540 | 21,980 | 42,430 | 210,950 | | |
| | BIOLOGICAL TREATMENT | | 146,540 | 21,980 | 42,430 | 210,950 | | |
| 06 21 | DEMOBILIZATION | | | | | | | |
| 06 21 04 | DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 | TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 | Demobilization | | | | | | | |
| 06 21 04 01 01 01 | Demob - Equipment & Setup | | 15,700 | 2,360 | 3,610 | 21,670 | | 1 |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Demobilization | | 15,700 | 2,360 | 3,610 | 21,670 | | |
| TRANSPORTATION | | 15,700 | 2,360 | 3,610 | 21,670 | | |
| DEMOB OF EQUIPMENT & FACILITIES | | 15,700 | 2,360 | 3,610 | 21,670 | | |
| DEMOBILIZATION | | 15,700 | 2,360 | 3,610 | 21,670 | | |
| REMEDIAL ACTION | | 666,470 | 99,970 | 172,580 | 939,020 | | |
| HANFORD: REMEDIATION | | 666,470 | 99,970 | 172,580 | 939,020 | | |

| | QUANTITY | UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | | | | | |
| Equipment Mob, Detailed List | | | 3,110 | 470 | 180 | 300 | 40 | 40 | 4,130 | |
| TRANSPORTATION | | | 3,110 | 470 | 180 | 300 | 40 | 40 | 4,130 | |
| MOB OF EQUIPMENT & FACILITIES | | | 3,110 | 470 | 180 | 300 | 40 | 40 | 4,130 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | 100.00 | HR | 3,000 | 450 | 170 | 290 | 40 | 40 | 3,990 | 39.88 |
| Assembly and Setup | | | 3,000 | 450 | 170 | 290 | 40 | 40 | 3,990 | |
| TRAILERS AND BUILDINGS | | | 3,000 | 450 | 170 | 290 | 40 | 40 | 3,990 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | 80.00 | HR | 2,400 | 360 | 140 | 230 | 30 | 30 | 3,190 | 39.88 |
| Assembly and Setup | | | 2,400 | 360 | 140 | 230 | 30 | 30 | 3,190 | |
| DECONTAMINATION FACILITIES | | | 2,400 | 360 | 140 | 230 | 30 | 30 | 3,190 | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 05 02 Perimeter Security Fence | | | | | | | | | |
| Perimeter Security Fence | 520.00 LF | 13,000 | 1,950 | 750 | 1,260 | 160 | 170 | 17,280 | 33.23 |
| PRELIMINARY SITE PREP | | 13,000 | 1,950 | 750 | 1,260 | 160 | 170 | 17,280 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 18,400 | 2,760 | 1,060 | 1,780 | 220 | 240 | 24,460 | |
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | | | | |
| 06 01 05 01 POWER AND SITE LIGHTING | | | | | | | | | |
| 06 01 05 01 01 Temporary Power | | | | | | | | | |
| 06 01 05 01 01 01 Temporary Power (3 PH, 800 AMP) | | 2,500 | 380 | 140 | 240 | 30 | 30 | 3,320 | |
| Temporary Power | | 2,500 | 380 | 140 | 240 | 30 | 30 | 3,320 | |
| POWER AND SITE LIGHTING | | 2,500 | 380 | 140 | 240 | 30 | 30 | 3,320 | |
| 06 01 05 03 WATER, SEWER, AND GAS | | | | | | | | | |
| 06 01 05 03 01 Temporary Water/Sewer Service | | | | | | | | | |
| 06 01 05 03 01 01 Temporary Water Service | | 2,500 | 380 | 140 | 240 | 30 | 30 | 3,320 | |
| 06 01 05 03 01 02 Temporary Sewer Service | | 2,500 | 380 | 140 | 240 | 30 | 30 | 3,320 | |
| Temporary Water/Sewer Service | | 5,000 | 750 | 290 | 480 | 60 | 70 | 6,650 | |
| WATER, SEWER, AND GAS | | 5,000 | 750 | 290 | 480 | 60 | 70 | 6,650 | |
| CONSTRUCT TEMPORARY UTILITIES | | 7,500 | 1,130 | 430 | 720 | 90 | 100 | 9,970 | |
| MOBILIZATION & PREPARATORY WORK | | 29,010 | 4,350 | 1,670 | 2,800 | 350 | 380 | 38,560 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06 SAMPLING SOIL, SEDIMENT & SOLIDS | | | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02 06 01 00 Preliminary Treatability Study | | | | | | | | | |
| Preliminary Treatability Study | | 10,000 | 1,500 | 580 | 970 | 120 | 130 | 13,290 | |
| 06 02 06 01 01 Excav., PHASE I, Soil Sample | | | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | 60.00 EA | 30,000 | 4,500 | 1,720 | 2,900 | 360 | 390 | 39,880 | 664.62 |
| 06 02 06 01 01 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,590 | |
| Excav., PHASE I, Soil Sample | | 32,700 | 4,910 | 1,880 | 3,160 | 390 | 430 | 43,470 | |
| 06 02 06 01 02 Excav., PHASE II, Soil Sample | | | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | 60.00 EA | 37,500 | 5,630 | 2,160 | 3,620 | 450 | 490 | 49,850 | 830.78 |
| 06 02 06 01 02 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,590 | |
| Excav., PHASE II, Soil Sample | 60.00 EA | 40,200 | 6,030 | 2,310 | 3,880 | 480 | 530 | 53,440 | 890.60 |
| 06 02 06 01 03 1st Year, Soil Samples | | | | | | | | | |
| 06 02 06 01 03 01 Soil Sampling | 60.00 EA | 30,000 | 4,500 | 1,720 | 2,900 | 360 | 390 | 39,880 | 664.62 |
| 06 02 06 01 03 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,590 | |
| 1st Year, Soil Samples | | 32,700 | 4,910 | 1,880 | 3,160 | 390 | 430 | 43,470 | |
| 06 02 06 01 04 2nd Year, Soil Samples | | | | | | | | | |
| 06 02 06 01 04 01 Soil Sampling | 60.00 EA | 30,000 | 4,500 | 1,720 | 2,900 | 360 | 390 | 39,880 | 664.62 |
| 06 02 06 01 04 02 QA Report | | 2,700 | 410 | 160 | 260 | 30 | 40 | 3,590 | |
| 2nd Year, Soil Samples | | 32,700 | 4,910 | 1,880 | 3,160 | 390 | 430 | 43,470 | |
| SURFACE SOIL | | 148,300 | 22,250 | 8,530 | 14,330 | 1,780 | 1,950 | 197,130 | |
| SAMPLING SOIL, SEDIMENT & SOLIDS | | 148,300 | 22,250 | 8,530 | 14,330 | 1,780 | 1,950 | 197,130 | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 33.00 WK | 171,600 | 25,740 | 9,870 | 16,580 | 2,060 | 2,260 | 228,100 | 6912.09 |
| QA/Safety Monitoring | | 171,600 | 25,740 | 9,870 | 16,580 | 2,060 | 2,260 | 228,100 | |
| QA/Safety Monitoring | | 171,600 | 25,740 | 9,870 | 16,580 | 2,060 | 2,260 | 228,100 | |
| QA/Safety Monitoring | | 171,600 | 25,740 | 9,870 | 16,580 | 2,060 | 2,260 | 228,100 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 319,900 | 47,990 | 18,390 | 30,900 | 3,830 | 4,210 | 425,230 | |
| 06 03 SITE WORK | | | | | | | | | |
| 06 03 03 EARTHWORK | | | | | | | | | |
| 06 03 03 04 EARTHWORK | | | | | | | | | |
| 06 03 03 04 01 Construct Lined Containment Area | | | | | | | | | |
| 06 03 03 04 01 01 Earth work, Containment Area | 500.00 CY | 1,920 | 290 | 110 | 190 | 20 | 30 | 2,560 | 5.11 |
| 06 03 03 04 01 02 Geomembrane Liner | 2100.00 SY | 16,340 | 2,450 | 940 | 1,580 | 200 | 220 | 21,720 | 10.34 |
| 06 03 03 04 01 03 Collection System | | 12,160 | 1,820 | 700 | 1,170 | 150 | 160 | 16,160 | |
| Construct Lined Containment Area | | 30,420 | 4,560 | 1,750 | 2,940 | 360 | 400 | 40,440 | |
| EARTHWORK | | 30,420 | 4,560 | 1,750 | 2,940 | 360 | 400 | 40,440 | |
| EARTHWORK | | 30,420 | 4,560 | 1,750 | 2,940 | 360 | 400 | 40,440 | |
| SITE WORK | | 30,420 | 4,560 | 1,750 | 2,940 | 360 | 400 | 40,440 | |
| 06 11 BIOLOGICAL TREATMENT | | | | | | | | | |
| 06 11 03 LAND TREATMENT/FARMING | | | | | | | | | |
| 06 11 03 01 SOLIDS PREPARATION & HANDLING | | | | | | | | | |
| 06 11 03 01 01 Soil Excavation/Placement | | | | | | | | | |
| 06 11 03 01 01 01 PPEquip, Class D | 3.00 DAY | 1,140 | 170 | 70 | 110 | 10 | 20 | 1,520 | 506.46 |
| 06 11 03 01 01 02 Excavate, haul to Containment | 440.00 CY | 2,180 | 330 | 130 | 210 | 30 | 30 | 2,900 | 6.59 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Soil Excavation/Placement | 440.00 CY | 3,320 | 500 | 190 | 320 | 40 | 40 | 4,420 | 10.04 |
| 06 11 03 01 02 Soil Mixing | | | | | | | | | |
| 06 11 03 01 02 02 Soil Mixing - By disks | 72.00 WK | 29,110 | 4,370 | 1,670 | 2,810 | 350 | 380 | 38,690 | 537.41 |
| Soil Mixing | 1.00 WK | 29,110 | 4,370 | 1,670 | 2,810 | 350 | 380 | 38,690 | 38693.56 |
| SOLIDS PREPARATION & HANDLING | | 32,430 | 4,860 | 1,860 | 3,130 | 390 | 430 | 43,110 | |
| 06 11 03 02 LIQUIDS PREPARATION & HANDLING | | | | | | | | | |
| 06 11 03 02 01 Release/Collect Nutrient System | | | | | | | | | |
| 06 11 03 02 01 01 Sprinkler System Setup | | 1,700 | 260 | 100 | 160 | 20 | 20 | 2,260 | |
| Release/Collect Nutrient System | | 1,700 | 260 | 100 | 160 | 20 | 20 | 2,260 | |
| 06 11 03 02 02 Bioremediation Weekly Operation | | | | | | | | | |
| 06 11 03 02 02 01 Bioremediation Weekly Operation | 72.00 WK | 76,110 | 11,420 | 4,380 | 7,350 | 910 | 1,000 | 101,170 | 1405.17 |
| Bioremediation Weekly Operation | | 76,110 | 11,420 | 4,380 | 7,350 | 910 | 1,000 | 101,170 | |
| LIQUIDS PREPARATION & HANDLING | | 77,810 | 11,670 | 4,470 | 7,520 | 930 | 1,020 | 103,430 | |
| LAND TREATMENT/FARMING | | 110,250 | 16,540 | 6,340 | 10,650 | 1,320 | 1,450 | 146,540 | |
| BIOLOGICAL TREATMENT | | 110,250 | 16,540 | 6,340 | 10,650 | 1,320 | 1,450 | 146,540 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 Demobilization | | | | | | | | | |
| 06 21 04 01 01 01 Demob - Equipment & Setup | | 11,810 | 1,770 | 680 | 1,140 | 140 | 160 | 15,700 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Demobilization | | 11,810 | 1,770 | 680 | 1,140 | 140 | 160 | 15,700 | |
| TRANSPORTATION | | 11,810 | 1,770 | 680 | 1,140 | 140 | 160 | 15,700 | |
| DEMOB OF EQUIPMENT & FACILITIES | | 11,810 | 1,770 | 680 | 1,140 | 140 | 160 | 15,700 | |
| DEMOBILIZATION | | 11,810 | 1,770 | 680 | 1,140 | 140 | 160 | 15,700 | |
| REMEDIAL ACTION | | 501,390 | 75,210 | 28,830 | 48,430 | 6,010 | 6,600 | 666,470 | |
| HANFORD: REMEDIATION | | 501,390 | 75,210 | 28,830 | 48,430 | 6,010 | 6,600 | 666,470 | |
| S & A | | | | | | | | 99,970 | |
| SUBTOTAL | | | | | | | | 766,440 | |
| CONTINGENCY | | | | | | | | 172,580 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 939,020 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT & FACILITIES
06 01 01 1. TRANSPORTATION
06 01 01 1 01. Equipment Mob, Detailed List

This item covers the Mobilization of the equipment and misc. items as detailed below. A 100-mi Radius mob is assumed.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 3237 > | Mob, FEnd Ldr, Wheel, 4.0-6 CY, Articulated Fr, 100-mi rad | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 0.00<br>0 | 0.00<br>0 | 750.00<br>750 | 750.00 |
| USR AA <01505 4201 > | Mob, Roller, Towed, 50-75 Ton, Pneumatic, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 0.00<br>0 | 0.00<br>0 | 550.00<br>550 | 550.00 |
| USR AA <01505 5203 > | Mob, Motor Grader, 150-200 HP, Art. Fr, Pwr Shift, 100-mi Rad | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 0.00<br>0 | 0.00<br>0 | 525.00<br>525 | 525.00 |
| USR AA <01505 7111 > | Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 7123 > | Mob, End Dump trailer, 12 CY w/CLT8000 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 7131 > | Mob, Water Tank, 3,000 Gal, Mtd/FT800 Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 0.00<br>0 | 0.00<br>0 | 150.00<br>150 | 150.00 |
| USR AA <01505 8921 > | Mob, Decontamination Trailer, w/25,000 GVW Trk, 100-mi Radius | 1.00 | EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 0.00<br>0 | 0.00<br>0 | 135.00<br>135 | 135.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M CIV AA <01500 1101 > Mob - Field Office Trailer | | | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 | EA | N/A | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| USR AA <01505 6114 > Mob, Dozer, CWLR, D-6H, w/ Bld 100-mi Radius | | | | | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 500.00 | |
| | 1.00 | EA | | 0.00 | 0 | 0 | 500 | 0 | 0 | 500 | 500.00 |
| Equipment Mob, Detailed List | | | | | 0 | 0 | 3,110 | 0 | 0 | 3,110 | |
| TRANSPORTATION | | | | | 0 | 0 | 3,110 | 0 | 0 | 3,110 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01. Assembly and Setup | | | | | | | | | |
| 06 01 04 01 01 01. Assembly and Setup<br>Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Assembly and Setup | 100.00 HR | | 0 | 2,500 | 250 | 250 | 0 | 3,000 | 30.00 |
| Assembly and Setup | | | 0 | 2,500 | 250 | 250 | 0 | 3,000 | |
| TRAILERS AND BUILDINGS | | | 0 | 2,500 | 250 | 250 | 0 | 3,000 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | | | |
| 06 01 04 02 01. Assembly and Setup | | | | | | | | | | | |
| 06 01 04 02 01 01. Assembly and Setup<br>Allow 80 mhrs for setup of Decontamination trailer. This self contained trailer Decon unit includes a changing room and shower area. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Assembly and Setup | 80.00 | HR | | | 0 | 2,000 | 200 | 200 | 0 | 2,400 | 30.00 |
| Assembly and Setup | | | | | 0 | 2,000 | 200 | 200 | 0 | 2,400 | |
| DECONTAMINATION FACILITIES | | | | | 0 | 2,000 | 200 | 200 | 0 | 2,400 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 05. PRELIMINARY SITE PREP | | | | | | | | | |
| 06 01 04 05 02. Perimeter Security Fence | | | | | | | | | |
| A 6' temporary Security perimeter fence is needed around Bioremediation site (quantity given 520 LF). A unit cost $20/LF will be used for the fence based on recent bid opening prices. The $5/LF "Other" cost is takedown. | | | | | | | | | |
| . | | | | | | | | | |
| Perimeter Security Fence | 520.00 LF | | 0 | 2,600 | 1,300 | 6,500 | 2,600 | 13,000 | 25.00 |
| PRELIMINARY SITE PREP | | | 0 | 2,600 | 1,300 | 6,500 | 2,600 | 13,000 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 05. CONSTRUCT TEMPORARY UTILITIES | | | | | | | | | | | |
| 06 01 05 01. POWER AND SITE LIGHTING | | | | | | | | | | | |
| 06 01 05 01 01. Temporary Power | | | | | | | | | | | |
| 06 01 05 01 01 01. Temporary Power (3 PH, 800 AMP) | | | | | | | | | | | |
| Allow $2,500 for temporary power service hookup. | | | | | | | | | | | |
| Temporary Power (3 PH, 800 AMP) | | | | | 0 | 0 | 0 | 0 | 2,500 | 2,500 | |
| Temporary Power | | | | | 0 | 0 | 0 | 0 | 2,500 | 2,500 | |
| POWER AND SITE LIGHTING | | | | | 0 | 0 | 0 | 0 | 2,500 | 2,500 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 05 03. WATER, SEWER, AND GAS | | | | | | | | | | | |
| 06 01 05 03 01. Temporary Water/Sewer Service | | | | | | | | | | | |
| 06 01 05 03 01 01. Temporary Water Service | | | | | | | | | | | |
| Allow $2,500 for temporary water service hookup. | | | | | | | | | | | |
| Temporary Water Service | | | | | 0 | 0 | 0 | 0 | 2,500 | 2,500 | |
| 06 01 05 03 01 02. Temporary Sewer Service | | | | | | | | | | | |
| Allow $2,500 for temporary sewer service hookup. | | | | | | | | | | | |
| Temporary Sewer Service | | | | | 0 | 0 | 0 | 0 | 2,500 | 2,500 | |
| Temporary Water/Sewer Service | | | | | 0 | 0 | 0 | 0 | 5,000 | 5,000 | |
| WATER, SEWER, AND GAS | | | | | 0 | 0 | 0 | 0 | 5,000 | 5,000 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 06. SAMPLING SOIL, SEDIMENT & SOLIDS | | | | | | | | | |
| 06 02 06 01. SURFACE SOIL | | | | | | | | | |
| 06 02 06 01 00. Preliminary Treatability Study<br>Based on quote from Waste Stream Technologies, Buffalo, NY. | | | | | | | | | |
| Preliminary Treatability Study | | | 0 | 0 | 0 | 0 | 10,000 | 10,000 | |
| 06 02 06 01 01. Excav., PHASE I, Soil Sample<br>After the 440 CY of soil have been excavated, a set of 50 soil samples will be taken to determine remaining levels of concentrations. | | | | | | | | | |
| 06 02 06 01 01 01. Soil Sampling<br>Sample on 15'x15' grid (50 samples) with analysis at off site lab for BEHP only, with 14-day turnaround. Method 8270. Add 10 QA samples. | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 30,000 | 30,000 | 500.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| Excav., PHASE I, Soil Sample | | | 0 | 0 | 0 | 0 | 32,700 | 32,700 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 02 06 01 02. Excav., PHASE II, Soil Sample<br>It is assumed that there will still be some contaimenated soils, so another set of soil samples will be taken after the next 6" soil layer is excavated. | | | | | | | | | | | |
| 06 02 06 01 02 01. Soil Sampling<br>Same as Phase I, except with 7-day turnaround, add 25%. | | | | | | | | | | | |
| Soil Sampling | 60.00 | EA | | | 0 | 0 | 0 | 0 | 37,500 | 37,500 | 625.00 |
| QA Report | | | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| Excav., PHASE II, Soil Sample | 60.00 | EA | | | 0 | 0 | 0 | 0 | 40,200 | 40,200 | 670.00 |

06 02. MONITOR, SAMPLE, TEST, ANALYSIS

06 02 06 01 03. 1st Year, Soil Samples
After the 1st years remediation is completed, a full set of samples will be taken to determine how successful the bioremediation has been.

06 02 06 01 03 01. Soil Sampling
Sample on 15'x15' grid (50 samples) with analysis at off site lab for BEHP only, with 14-day turnaround. Method 8270. Add 10 QA samples.

| | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Soil Sampling | 60.00 | EA | | | 0 | 0 | 0 | 0 | 30,000 | 30,000 | 500.00 |
| QA Report | | | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| 1st Year, Soil Samples | | | | | 0 | 0 | 0 | 0 | 32,700 | 32,700 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 02 06 01 04. 2nd Year, Soil Samples<br>After the 2nd year of remediation is completed, a full set of samples will be taken to determine if successful cleanup has been achieved. | | | | | | | | | |
| 06 02 06 01 04 01. Soil Sampling<br>Sample on 15'x15' grid (50 samples) with analysis at off site lab for BEHP only, with 14-day turnaround. Method 8270. Add 10 QA samples. | | | | | | | | | |
| Soil Sampling | 60.00 EA | | 0 | 0 | 0 | 0 | 30,000 | 30,000 | 500.00 |
| QA Report | | | 0 | 0 | 0 | 0 | 2,700 | 2,700 | |
| 2nd Year, Soil Samples | | | 0 | 0 | 0 | 0 | 32,700 | 32,700 | |
| SURFACE SOIL | | | 0 | 0 | 0 | 0 | 148,300 | 148,300 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

06 02 91. QA/Safety Monitoring
06 02 91 01. QA/Safety Monitoring
06 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site. Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

06 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

WHC HPT: 40 Hrs @ $50/Hr = $2,000
COE Safety Rep: 40 Hrs @ $70/Hr = 2,800
COE S.A. for QA: 8 Hrs @ $50/Hr = 400
---
$5,200/wk

Estimated duration of job is 3 weeks, for setup of containment area, excavation of soils and placement into containment area. Designer has assumed 2 years to remediate @ 36 weeks per year. However, 12 hrs of soil tilling will be required each week, as well as operation of the sprinkler system. So allow another 30 weeks to "cover" the 2 year remediation cycle.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | 33.00 | WK | | | 0 | 171,600 | 0 | 0 | 0 | 171,600 | 5200.00 |
| QA/Safety Monitoring | | | | | 0 | 171,600 | 0 | 0 | 0 | 171,600 | |
| QA/Safety Monitoring | | | | | 0 | 171,600 | 0 | 0 | 0 | 171,600 | |

| 06 03. SITE WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 03. SITE WORK | | | | | | | | | | | |
| 06 03 03. EARTHWORK | | | | | | | | | | | |
| 06 03 03 04. EARTHWORK | | | | | | | | | | | |
| 06 03 03 04 01. Construct Lined Containment Area | | | | | | | | | | | |
| A 12,000 SF containment area is required, assume it will be 100' x 120' inside the berm. A quantity of 450 CY of excavation was given, of which 400 CY will be used to construct a berm around the area. A 50-mil geomembrane will keep the leachate contained, and the 4" dia collection piping will collect it to a manhole. | | | | | | | | | | | |
| 06 03 03 04 01 01. Earth work, Containment Area | | | | | | | | | | | |
| L MIL AA <02226 1002 > Excavate, D-6D Dozer w/S-Blade | | | | | 0.03 | 0.82 | 1.07 | 0.00 | 0.00 | 1.90 | |
| 140 HP, move to berm & stockpile | 500.00 | CY | CODTE | 40.00 | 16 | 412 | 536 | 0 | 0 | 948 | 1.90 |
| L MIL AA <02226 1002 > Construct berm w/ D-6D Dozer | | | | | 0.04 | 0.94 | 1.23 | 0.00 | 0.00 | 2.17 | |
| w/S-Blade, use excavated mat. to make berm. | 450.00 | CY | CODTE | 35.00 | 16 | 424 | 552 | 0 | 0 | 975 | 2.17 |
| Earth work, Containment Area | 500.00 | CY | | | 32 | 836 | 1,088 | 0 | 0 | 1,924 | 3.85 |
| 06 03 03 04 01 02. Geomembrane Liner | | | | | | | | | | | |
| Assume geomembrane liner will be taken up sides of berm to make a "pool" area. Thus the extra square footage required. | | | | | | | | | | | |
| B HTW AA <02081 2144 > 50-Mil PVC liner | | | | | 0.10 | 2.33 | 0.25 | 4.85 | 0.00 | 7.43 | |
| | 2200.00 | SY | USKCE | 150.00 | 220 | 5,125 | 539 | 10,672 | 0 | 16,337 | 7.43 |
| Geomembrane Liner | 2100.00 | SY | | | 220 | 5,125 | 539 | 10,672 | 0 | 16,337 | 7.78 |
| 06 03 03 04 01 03. Collection System | | | | | | | | | | | |
| B HTW AA <02082 1312 > 4" D, Sch 40, 2-4 rows of slots | | | | | 0.08 | 1.92 | 0.01 | 2.16 | 0.00 | 4.09 | |
| | 120.00 | LF | ULABD | 40.00 | 10 | 230 | 2 | 259 | 0 | 491 | 4.09 |
| USR AA <02082 1414 > 4" D, PVC pipe | | | | | 0.13 | 3.07 | 0.02 | 2.16 | 0.00 | 5.25 | |
| | 50.00 | LF | ULABD | 25.00 | 7 | 153 | 1 | 108 | 0 | 262 | 5.25 |
| L MIL AA <02212 2101 > Shape Embankment/Slope w/Machine | | | | | 0.03 | 0.68 | 0.27 | 0.00 | 0.00 | 0.95 | |
| Up to 1 on 4 Slope | 2100.00 | SY | COFCF | 150.00 | 56 | 1,438 | 567 | 0 | 0 | 2,005 | 0.95 |

| 06 03. SITE WORK | | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| M USR AA <02212 3104 > | Compact Bedding, by Machine, SP Roller, 6" Lift. Assume bedding can be bought and delivered for $20/LCY. | | | 0.02 | 0.59 | 0.21 | 21.56 | 0.00 | 22.36 | |
| | | 385.00 LCY COFCD | 65.00 | 9 | 227 | 82 | 8,301 | 0 | 8,610 | 22.36 |
| M MIL AA <02560 5203 > | 4' Dia x8' Deep, Precast Manhole 8" Thick | | | 13.00 | 313.84 | 47.49 | 431.20 | 0.00 | 792.53 | |
| | | 1.00 EA CODEJ | 0.25 | 13 | 314 | 47 | 431 | 0 | 793 | 792.53 |
| | Collection System | | | 94 | 2,362 | 700 | 9,098 | 0 | 12,161 | |
| | Construct Lined Containment Area | | | 346 | 8,323 | 2,328 | 19,771 | 0 | 30,422 | |
| | EARTHWORK | | | 346 | 8,323 | 2,328 | 19,771 | 0 | 30,422 | |

| 06 11. BIOLOGICAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 11. BIOLOGICAL TREATMENT | | | | | | | | | | | |
| 06 11 03. LAND TREATMENT/FARMING (Solid Phase Biodegredation) | | | | | | | | | | | |
| 06 11 03 01. SOLIDS PREPARATION & HANDLING | | | | | | | | | | | |
| 06 11 03 01 01. Soil Excavation/Placement | | | | | | | | | | | |
| 06 11 03 01 01 01. PPEquip, Class D<br>Assume workers in Class D PPE during excavation and hauling to containment site, estimated to be 3 working days. Included also is a decon shower, and equipment decon equipment. This item covers 4 personnel. | | | | | | | | | | | |
| M HTW AA <01951 5202 > Boot Covers, Tyvek (Bag Of 10Pr) | | | | | 0.00 | 0.00 | 11.50 | 0.00 | 0.00 | 11.50 | |
| | 12.00 | EA | N/A | 0.00 | 0 | 0 | 138 | 0 | 0 | 138 | 11.50 |
| M HTW AA <01951 5204 > Coveralls, Tyvek | | | | | 0.00 | 0.00 | 0.00 | 7.55 | 0.00 | 7.55 | |
| | 12.00 | EA | N/A | 0.00 | 0 | 0 | 0 | 91 | 0 | 91 | 7.55 |
| M HTW AA <01951 5501 > Butyl, Medium Weight, Gloves | | | | | 0.00 | 0.00 | 2.30 | 0.00 | 0.00 | 2.30 | |
| | 12.00 | PR | N/A | 0.00 | 0 | 0 | 28 | 0 | 0 | 28 | 2.30 |
| USR AA <01957 3105 > Cold Water, Gasoline, 3200 psi, 4.2 gpm, 11 HP (Daily cost) | | | | | 10.00 | 232.40 | 1.45 | 34.83 | 0.00 | 268.68 | |
| | 3.00 | DAY | ULABA | 0.13 | 30 | 697 | 4 | 104 | 0 | 806 | 268.68 |
| M HTW AA <01957 4301 > 8 Ft x 36 Ft, 2 Showers, 2 Wall Fans (Monthly Rental) | | | | | 0.00 | 0.00 | 0.00 | 26.95 | 0.00 | 26.95 | |
| | 3.00 | DAY | N/A | 0.00 | 0 | 0 | 0 | 81 | 0 | 81 | 26.95 |
| PPEquip, Class D | 3.00 | DAY | | | 30 | 697 | 170 | 276 | 0 | 1,143 | 381.01 |
| 06 11 03 01 01 02. Excavate, haul to Containment<br>Assume containment area within a mile of site. Excavate, haul, and dump into bioremediation area. | | | | | | | | | | | |
| USR AA <02225 2112 > Excavate & Load, 1-CY Backhoe, Med Matl, 20 CY/Hr | | | | | 0.08 | 1.92 | 0.58 | 0.00 | 0.00 | 2.50 | |
| | 485.00 | LCY | CODEG | 20.00 | 36 | 930 | 284 | 0 | 0 | 1,213 | 2.50 |
| USR AA <02225 3104 > Haul, 12 CY Truck, 1-Mi one-way 20 MPH, 4 Cycles/Hr | | | | | 0.04 | 1.09 | 0.90 | 0.00 | 0.00 | 1.99 | |
| | 485.00 | LCY | COEID | 25.00 | 19 | 528 | 439 | 0 | 0 | 967 | 1.99 |
| Excavate, haul to Containment | 440.00 | CY | | | 56 | 1,458 | 722 | 0 | 0 | 2,180 | 4.96 |
| Soil Excavation/Placement | 440.00 | CY | | | 86 | 2,155 | 892 | 276 | 0 | 3,323 | 7.55 |

| 06 11. BIOLOGICAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 11 03 01 02. Soil Mixing | | | | | | | | | | | |
| 06 11 03 01 02 02. Soil Mixing - By disks<br>This item covers cost of disking the soil layer for 12 Hrs a week. Using a farm type tractor w/ disk attachment. | | | | | | | | | | | |
| USR AA <02210 1001 > Soil Mixing - By disks | | | | | 1.00 | 25.59 | 8.10 | 0.00 | 0.00 | 33.69 | |
| General Area Grading<br>(See Csi 02210/1006 For Dozer) | 864.00 | HR | ZHANC04 | 1.00 | 864 | 22,110 | 7,000 | 0 | 0 | 29,109 | 33.69 |
| Soil Mixing - By disks | 72.00 | WK | | | 864 | 22,110 | 7,000 | 0 | 0 | 29,109 | 404.30 |
| Soil Mixing | 1.00 | WK | | | 864 | 22,110 | 7,000 | 0 | 0 | 29,109 | 29109.37 |
| SOLIDS PREPARATION & HANDLING | | | | | 950 | 24,265 | 7,892 | 276 | 0 | 32,433 | |

| 06 11. BIOLOGICAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 11 03 02. LIQUIDS PREPARATION & HANDLING | | | | | | | | | | | |
| 06 11 03 02 01. Release/Collect Nutrient System | | | | | | | | | | | |
| 06 11 03 02 01 01. Sprinkler System Setup<br>A sprinkler system is required to cover the 12,000 SF containment area. Assuming the area is 100'x120', six, 60' Dia head, sprinklers should cover the area if set up on top of the berms. A pump is also provided, which will fit in the manhole for the leachate system (the leachate can be mostly reused). | | | | | | | | | | | |
| USR AA <02737 1001 > Sprinkler Heads around perimeter of containment area. For a 60' D head, about $175/ea, includes materials, piping, & install. For 120'x100' area, say 6 heads needed. | | | | | 0.00 | 115.00 | 10.00 | 53.90 | 0.00 | 178.90 | |
| | 6.00 | EA | N/A | 0.00 | 0 | 690 | 60 | 323 | 0 | 1,073 | 178.90 |
| M USR AA <15145 2003 > 52 GPM Submersible Sump Pump 15' Head, 1-1/2" Discharge | | | | | 5.00 | 140.77 | 1.86 | 485.10 | 0.00 | 627.73 | |
| | 1.00 | EA | MPLUE | 0.50 | 5 | 141 | 2 | 485 | 0 | 628 | 627.73 |
| Sprinkler System Setup | | | | | 5 | 831 | 62 | 809 | 0 | 1,701 | |
| Release/Collect Nutrient System | | | | | 5 | 831 | 62 | 809 | 0 | 1,701 | |

| 06 11. BIOLOGICAL TREATMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 11 03 02 02. Bioremediation Weekly Operation | | | | | | | | | |
| 06 11 03 02 02 01. Bioremediation Weekly Operation<br>This Task item covers the week Bioremediation costs. Two years to remediate are assumed, at 36 weeks per year for a total of 72 weeks. Costs for the Nutrient/bacteria mixture and Bioreactor Rental are from Waste Stream Technology, Buffalo, NY. | | | | | | | | | |
| USR AA <02080 0501 > Nutrient/Bacteria Mixture | | | 0.00 | 125.00 | 0.00 | 582.12 | 0.00 | 707.12 | |
| Add a laborer at 5 hrs per week to check operation of Bioreactor and to feed nutrient mixture. | 72.00 WK | 0.00 | 0 | 9,000 | 0 | 41,913 | 0 | 50,913 | 707.12 |
| USR AA <02080 0502 > BioReactor Rental | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 72.00 WK | 0.00 | 0 | 0 | 18,000 | 0 | 0 | 18,000 | 250.00 |
| USR AA <02080 0503 > Power & Water for Bioremediation | | | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 100.00 | |
| Minimal power & water required, assume $100/WK. | 72.00 WK | 0.00 | 0 | 0 | 0 | 0 | 7,200 | 7,200 | 100.00 |
| Bioremediation Weekly Operation | 72.00 WK | | 0 | 9,000 | 18,000 | 41,913 | 7,200 | 76,113 | 1057.12 |
| Bioremediation Weekly Operation | | | 0 | 9,000 | 18,000 | 41,913 | 7,200 | 76,113 | |
| LIQUIDS PREPARATION & HANDLING | | | 5 | 9,831 | 18,062 | 42,721 | 7,200 | 77,814 | |

| 06 21. DEMOBILIZATION | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 21. DEMOBILIZATION | | | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | | | |
| 06 21 04 01 01. Demobilization | | | | | | | | | | | |
| 06 21 04 01 01 01. Demob - Equipment & Setup<br>Assume Demob at 75% of Mob, Site setup, and Temp Utilities, excluding temporary fence. | | | | | | | | | | | |
| Demob - Equipment & Setup | | | | | 0 | 0 | 11,813 | 0 | 0 | 11,813 | |
| Demobilization | | | | | 0 | 0 | 11,813 | 0 | 0 | 11,813 | |
| TRANSPORTATION | | | | | 0 | 0 | 11,813 | 0 | 0 | 11,813 | |
| HANFORD: REMEDIATION | | | | | 1,301 | 221,119 | 44,954 | 69,718 | 165,600 | 501,390 | |

THIS PAGE INTENTIONALLY
LEFT BLANK

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CODEG | 1 B-eqoprmed + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 49 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 11.69 | 50.03 |
| | CODEJ | 2 B-laborer + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 8 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 2.00 | HR | 23.14 | 2.00 | 46.28 | | | 46.28 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 3.25 | 78.46 | 1.13 | 11.87 | 90.33 |
| | CODTE | 1 B-eqoprmed + 1 Dozer, Cat D-6h, 165 Hp | | | PROD = | 100% | | | CREW HOURS = | 51 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 0.25 | HR | 26.77 | 0.25 | 6.69 | | | 6.69 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | T10CA010 E | BLADE, ANGLE, HYDR, FOR D6 | 1.00 | HR | 3.95 | | | 1.00 | 3.95 | 3.95 |
| MIL | T15CA010 E | DOZER,CWLR,D-6H,PS,(ADD BLADE) | 1.00 | HR | 38.96 | | | 1.00 | 38.96 | 38.96 |
| | TOTAL | | | | | 1.25 | 32.96 | 2.00 | 42.90 | 75.86 |
| | COEID | 1 B-trkdvrhv + 1 Dump Truck, 12 Cy | | | PROD = | 100% | | | CREW HOURS = | 39 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 1.00 | HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| MIL | T40XX010 E | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.00 | HR | 2.63 | | | 1.00 | 2.63 | 2.63 |
| MIL | T50GM016 E | TRK, HWY, 3 AXLE, 41000 GVW, 6X | 1.00 | HR | 19.97 | | | 1.00 | 19.97 | 19.97 |
| | TOTAL | | | | | 1.00 | 27.24 | 2.00 | 22.60 | 49.84 |
| | COFCD | 1 B-eqoprmed + 1- 12 Ton 3 Wheel Steel Roller | | | PROD = | 100% | | | CREW HOURS = | 12 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | R30IG008 E | ROLLER,SM-DR,SELF,12T,3WHL,3"OV | 1.00 | HR | 13.91 | | | 1.00 | 13.91 | 13.91 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 13.91 | 52.25 |
| | COFCF | 2 B-eqoprmed + 1 Grader, Cat 12g, 135 Hp | | | PROD = | 100% | | | CREW HOURS = | 28 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 0.50 | HR | 26.77 | 0.50 | 13.39 | | | 13.39 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 2.00 | HR | 26.27 | 2.00 | 52.54 | | | 52.54 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 0.50 | HR | 27.24 | 0.50 | 13.62 | | | 13.62 |
| MIL | G15CA003 E | GRADER,MOTOR,CAT12-G, ARTIC | 1.00 | HR | 27.05 | | | 1.00 | 27.05 | 27.05 |
| MIL | XMIXX020 E | Small Tools | 0.16 | HR | 1.39 | | | 0.16 | 0.22 | 0.22 |
| MIL | R30IG003 E | ROLLER,STATIC,SELF,15T, 11 TIRE | 1.00 | HR | 13.25 | | | 1.00 | 13.25 | 13.25 |
| | TOTAL | | | | | 4.00 | 102.69 | 2.16 | 40.53 | 143.21 |

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | MPLUE | 1 B-plumber + Small Tools | | | PROD = 100% | | | CREW HOURS = | | 4 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | B-PLUMBER F | Plumbers | 0.50 | HR | 31.83 | 0.50 | 15.92 | | | 15.92 |
| MIL | XMIXX020 E | Small Tools | 0.67 | HR | 1.39 | | | 0.67 | 0.93 | 0.93 |
| | TOTAL | | | | | 2.50 | 70.38 | 0.67 | 0.93 | 71.32 |
| | ULABA | 1 B-laborer + Small Tools | | | PROD = 100% | | | CREW HOURS = | | 48 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 1.25 | 29.05 | 0.13 | 0.18 | 29.23 |
| | ULABD | 2 B-skillwkr + Small Tools | | | PROD = 100% | | | CREW HOURS = | | 10 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-SKILLWKRL | Skilled Worker | 2.00 | HR | 23.76 | 2.00 | 47.52 | | | 47.52 |
| MIL | B-SKILLWKRF | Skilled Worker | 0.25 | HR | 24.26 | 0.25 | 6.07 | | | 6.07 |
| MIL | XMIXX020 E | Small Tools | 0.43 | HR | 1.39 | | | 0.43 | 0.60 | 0.60 |
| | TOTAL | | | | | 3.25 | 76.72 | 0.43 | 0.60 | 77.32 |
| | USKCE | 3 B-Skillwkr +12 B-Laborer+ 2-3T Flat B Truck | | | PROD = 100% | | | CREW HOURS = | | 29 |
| MIL | T40XX012 E | TRUCK OPT,FLATBED, 8' x 9.0' | 2.00 | HR | 0.49 | | | 2.00 | 0.99 | 0.99 |
| MIL | T50F0006 E | TRK, HWY,F600,21,000 GVW, 2 AXL | 2.00 | HR | 15.12 | | | 2.00 | 30.24 | 30.24 |
| MIL | XMIXX020 E | Small Tools | 4.00 | HR | 1.39 | | | 4.00 | 5.56 | 5.56 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 12.00 | HR | 23.14 | 12.00 | 277.68 | | | 277.68 |
| MIL | B-SKILLWKRL | Skilled Worker | 2.00 | HR | 23.76 | 2.00 | 47.52 | | | 47.52 |
| MIL | B-SKILLWKRF | Skilled Worker | 1.00 | HR | 24.26 | 1.00 | 24.26 | | | 24.26 |
| | TOTAL | | | | | 15.00 | 349.46 | 8.00 | 36.78 | 386.24 |
| | ZHANC04 | Tractor w/ disk attachment | | | PROD = 100% | | | CREW HOURS = | | 1728 |
| MIL | T10LE001 E | ROTARY HOE ATTACH, 80"W ROTERRA | 1.00 | HR | 1.10 | | | 1.00 | 1.10 | 1.10 |
| MIL | T25JD002 E | TRACTOR,WH,FARM, JD-2355 | 1.00 | HR | 6.66 | | | 1.00 | 6.66 | 6.66 |
| MIL | XMIXX020 E | Small Tools | 0.25 | HR | 1.39 | | | 0.25 | 0.35 | 0.35 |
| MIL | X-EQOPRLT L | Outside Equipment Oper. Light | 1.00 | HR | 25.59 | 1.00 | 25.59 | | | 25.59 |
| | TOTAL | | | | | 1.00 | 25.59 | 2.25 | 8.10 | 33.69 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 202 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 502 |
| MIL | B-PLUMBER | Plumbers | 31.33 | 0.0% | 0.0% | 0.00 | 0.00 | 31.33 | HR | 10/22/92 | 23.92 | 6 |
| MIL | B-SKILLWKR | Skilled Worker | 23.76 | 0.0% | 0.0% | 0.00 | 0.00 | 23.76 | HR | 10/22/92 | 13.34 | 111 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 53 |
| MIL | X-EQOPRLT | Outside Equip. Oper Light | 25.59 | 0.0% | 0.0% | 0.00 | 0.00 | 25.59 | HR | 10/22/92 | 17.05 | 1728 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | G15CA003 | GRADER,MOTOR,CAT12-G, ARTIC | 8.89 | 3.49 | 3.65 | 1.2 | 9.10 | 0.58 | 0.09 | 27.05 | HR | 28 |
| MIL | L50CS002 | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 3.42 | 1.16 | 1.86 | 0.6 | 4.04 | 0.53 | 0.08 | 11.69 | HR | 57 |
| MIL | R30IG003 | ROLLER,STATIC,SELF,15T, 11 TIRE | 4.30 | 1.11 | 2.36 | 0.5 | 4.09 | 0.72 | 0.11 | 13.25 | HR | 28 |
| MIL | R30IG008 | ROLLER,SM-DR,SELF,12T,3WHL,3"OVL | 4.71 | 1.37 | 2.24 | 0.5 | 5.04 | | | 13.91 | HR | 12 |
| MIL | T10CA010 | BLADE, ANGLE, HYDR, FOR D6 | 1.62 | 0.48 | | 0.0 | 1.77 | | | 3.95 | HR | 51 |
| MIL | T10LE001 | ROTARY HOE ATTACH, 80"W ROTERRA | 0.46 | 0.13 | | | 0.50 | | | 1.10 | HR | 1728 |
| MIL | T15CA010 | DOZER,CWLR,D-6H,PS,(ADD BLADE) | 10.34 | 3.36 | 5.28 | 1.9 | 18.09 | | | 38.96 | HR | 51 |
| MIL | T25JD002 | TRACTOR,WH,FARM, JD-2355 | 1.78 | 0.42 | 1.89 | 0.5 | 1.58 | 0.41 | 0.06 | 6.66 | HR | 1728 |
| MIL | T40XX010 | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.15 | 0.28 | | 0.0 | 1.11 | | | 2.63 | HR | 39 |
| MIL | T40XX012 | TRUCK OPT,FLATBED, 8' x 9.0' | 0.24 | 0.06 | | | 0.20 | | | 0.49 | HR | 59 |
| MIL | T50FO006 | TRK, HWY,F600,21,000 GVW, 2 AXLE | 2.32 | 0.65 | 7.20 | 2.1 | 2.20 | 0.51 | 0.08 | 15.12 | HR | 59 |
| MIL | T50GM016 | TRK, HWY, 3 AXLE, 41000 GVW, 6X4 | 4.17 | 1.08 | 7.46 | 2.0 | 3.69 | 1.29 | 0.19 | 19.97 | HR | 39 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 568 |

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 5
Table of Contents Levels : 6

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |
| | Print Unit Cost Row : | Y | | | | | | | |
| | Print Page Footer : | Y | | | | | | | |
| | Show Cost Codes : | Y | | | | | | | |
| COLUMNS OPTIONS | Print Crew Id : | Y | | | | | | | |
| | Crew Output : | Y | | | | | | | |
| | Unit Cost : | Y | | | | | | | |
| UPB TITLES | No. of Levels to Print : | 0 | | | | | | | |
| | Bracket Titles With : | - : | | | | | | | |
| | Include titles Notes : | Y | | | | | | | |

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y
Link Listing : N

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) |
|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 1 2 3 4 5 6 |
| Detail : | Y | | | |
| Project : | N | Y | Y | N N N N N Y |
| Contractor : | N | N | | N N N N N N N |
| Division : | N | N | N | Y N N N N N N |
| System : | N | N | N | Y N N N N N N |
| 2nd View : | N | | | |
| Crew : | Y | | | Y N N N N N N |
| Labor : | Y | | | |
| Equipment : | Y | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTION | | | | | | |
| S & A | P | 15.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | |
| 06 01 01 1 TRANSPORTATION | | | | | | |
| 06 01 01 1 01 Equipment Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 04 01 01 Assembly and Setup | | | | | | |
| 06 01 04 01 01 01 Assembly and Setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | |
| 06 01 04 02 01 Assembly and Setup | | | | | | |
| 06 01 04 02 01 01 Assembly and Setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 05 PRELIMINARY SITE PREP | | | | | | |
| 06 01 04 05 02 Perimeter Security Fence | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 05 CONSTRUCT TEMPORARY UTILITIES | | | | | | |
| 06 01 05 01 POWER AND SITE LIGHTING | | | | | | |
| 06 01 05 01 01 Temporary Power | | | | | | |
| 06 01 05 01 01 01 Temporary Power (3 PH, 800 AMP) | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 05 03 WATER, SEWER, AND GAS | | | | | | |
| 06 01 05 03 01 Temporary Water/Sewer Service | | | | | | |
| 06 01 05 03 01 01 Temporary Water Service | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 01 05 03 01 02 Temporary Sewer Service | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 50.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 06 SAMPLING SOIL, SEDIMENT & SOLIDS | | | | | | | |
| 06 02 06 01 SURFACE SOIL | | | | | | | |
| 06 02 06 01 00 Preliminary Treatability Study | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |
| 06 02 06 01 01 Excav., PHASE I, Soil Sample | | | | | | | |
| 06 02 06 01 01 01 Soil Sampling | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |
| 06 02 06 01 01 02 QA Report | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |
| 06 02 06 01 02 Excav., PHASE II, Soil Sample | | | | | | | |
| 06 02 06 01 02 01 Soil Sampling | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |
| 06 02 06 01 02 02 QA Report | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |
| 06 02 06 01 03 1st Year, Soil Samples | | | | | | | |
| 06 02 06 01 03 01 Soil Sampling | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |
| 06 02 06 01 03 02 QA Report | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |
| 06 02 06 01 04 2nd Year, Soil Samples | | | | | | | |
| 06 02 06 01 04 01 Soil Sampling | | | | | | | |
| S & A | | O | | | | | |
| CONTINGENCY | | P | 20.00 | | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| 06 02 06 01 04 02 QA Report | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 03 SITE WORK | | | | | | |
| 06 03 03 EARTHWORK | | | | | | |
| 06 03 03 04 EARTHWORK | | | | | | |
| 06 03 03 04 01 Construct Lined Containment Area | | | | | | |
| 06 03 03 04 01 01 Earth work, Containment Area | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 30.00 | | | | |
| 06 03 03 04 01 02 Geomembrane Liner | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 30.00 | | | | |
| 06 03 03 04 01 03 Collection System | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 30.00 | | | | |
| 06 11 BIOLOGICAL TREATMENT | | | | | | |
| 06 11 03 LAND TREATMENT/FARMING | | | | | | |
| 06 11 03 01 SOLIDS PREPARATION & HANDLING | | | | | | |
| 06 11 03 01 01 Soil Excavation/Placement | | | | | | |
| 06 11 03 01 01 01 PPEquip, Class D | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |
| 06 11 03 01 01 02 Excavate, haul to Containment | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 30.00 | | | | |
| 06 11 03 01 02 Soil Mixing | | | | | | |
| 06 11 03 01 02 02 Soil Mixing - By disks | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 11 03 02 | LIQUIDS PREPARATION & HANDLING | | | | | | |
| 06 11 03 02 01 | Release/Collect Nutrient System | | | | | | |
| 06 11 03 02 01 01 | Sprinkler System Setup | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 30.00 | | | | |
| 06 11 03 02 02 | Bioremediation Weekly Operation | | | | | | |
| 06 11 03 02 02 01 | Bioremediation Weekly Operation | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 21 | DEMOBILIZATION | | | | | | |
| 06 21 04 | DEMOB OF EQUIPMENT & FACILITIES | | | | | | |
| 06 21 04 01 | TRANSPORTATION | | | | | | |
| 06 21 04 01 01 | Demobilization | | | | | | |
| 06 21 04 01 01 01 | Demob - Equipment & Setup | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

DOE/RL-92-67

# GROUNDWATER REMEDIATION MONITORING WELLS

9 3 1 2 8 ' 2 1 8 0 7

THIS PAGE INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
GROUNDWATER REMEMDIATION
MONITORING WELLS

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/22/92
Est Construction Time: 35 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This estimate covers initial construction cost for six groundwater monitor wells. These wells will be 60 VLF deep. Estimate covers drilling, casing installation, well development, and all safety related items. It is estimated that 5 weeks will be required for installation of wells. No monitoring costs are included in this estimate.

1. Normal Contingency for this level of estimate is 20-30%.
2. Using 50% Contingency for Setup & Testing items, as they are undefined.
3. Using 30% Contingency based on uncertainty of the quantities given.

THIS PAGE INTENTIONALLY LEFT BLANK

---

SUMMARY REPORTS — SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 6.....1
PROJECT INDIRECT SUMMARY - LEVEL 6.....4

DETAILED ESTIMATE — DETAIL PAGE

06. REMEDIAL ACTION
- 01. MOBILIZATION & PREPARATORY WORK
  - 01. MOB OF EQUIPMENT & FACILITIES
    - 01. TRANSPORTATION
      - 01. Equipment Mob, Detailed List.....1
  - 04. SETUP/CONSTRUCT TEMP FACILITIES
    - 01. TRAILERS AND BUILDINGS
      - 01. Office Trailers - setup.....2
    - 02. DECONTAMINATION FACILITIES
      - 01. Personnel Decon Facilities.....3
      - 02. Equip/Vehicle Decon Facilities.....3
- 02. MONITOR, SAMPLE, TEST, ANALYSIS
  - 91. QA/Safety Monitoring
    - 01. QA/Safety Monitoring
      - 01. QA/Safety Monitoring.....4
- 06. GROUNDWATER COLLECTION & CONTROL
  - 01. EXTRACTION AND INJECTION WELLS
    - 01. WELL DRILLING & CONSTRUCTION
      - 01. WELL DRILLING & CONSTRUCTION.....5
- 21. DEMOBILIZATION
  - 04. DEMOB OF EQUIPMENT & FACILITIES
    - 01. TRANSPORTATION
      - 01. DeMob - Equipment/Facilities.....6

No Backup Reports...

* * *  END TABLE OF CONTENTS  * * *

Thu 22 Oct 1992

U.S. Army Corps of Engineers
PROJECT GW6MON: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., 6 MONITORING WELLS
** PROJECT OWNER SUMMARY - LEVEL 6 (Rounded to 10's) **

TIME 15:25:38
SUMMARY PAGE 1

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 830 | 120 | 190 | 1,150 | | 1 |
| TRANSPORTATION | | 830 | 120 | 190 | 1,150 | | |
| MOB OF EQUIPMENT & FACILITIES | | 830 | 120 | 190 | 1,150 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 3,790 | 570 | 2,180 | 6,530 | 65.35 | 2 |
| Office Trailers - setup | | 3,790 | 570 | 2,180 | 6,530 | | |
| TRAILERS AND BUILDINGS | | 3,790 | 570 | 2,180 | 6,530 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 3,030 | 450 | 1,740 | 5,230 | 65.35 | 2 |
| Personnel Decon Facilities | | 3,030 | 450 | 1,740 | 5,230 | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,530 | 230 | 880 | 2,640 | | 2 |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,530 | 230 | 880 | 2,640 | | |
| DECONTAMINATION FACILITIES | | 4,560 | 680 | 2,620 | 7,860 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 8,350 | 1,250 | 4,800 | 14,400 | | |
| MOBILIZATION & PREPARATORY WORK | | 9,180 | 1,380 | 4,990 | 15,550 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 5.00 WK | 34,560 | 5,180 | 7,950 | 47,690 | 9538.78 | 1 |
| QA/Safety Monitoring | | 34,560 | 5,180 | 7,950 | 47,690 | | |
| QA/Safety Monitoring | | 34,560 | 5,180 | 7,950 | 47,690 | | |
| QA/Safety Monitoring | | 34,560 | 5,180 | 7,950 | 47,690 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 34,560 | 5,180 | 7,950 | 47,690 | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 6.00 EA | 406,750 | 61,010 | 116,940 | 584,710 | 97451.45 | 1 |
| WELL DRILLING & CONSTRUCTION | | 406,750 | 61,010 | 116,940 | 584,710 | | |
| WELL DRILLING & CONSTRUCTION | | 406,750 | 61,010 | 116,940 | 584,710 | | |
| EXTRACTION AND INJECTION WELLS | | 406,750 | 61,010 | 116,940 | 584,710 | | |

Thu 22 Oct 1992

U.S. Army Corps of Engineers
PROJECT GW6MON: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., 6 MONITORING WELLS
** PROJECT OWNER SUMMARY - LEVEL 6 (Rounded to 10's) **

TIME 15:25:38



| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| GROUNDWATER COLLECTION & CONTROL | | 406,750 | 61,010 | 116,940 | 584,710 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| DeMob - Equipment/Facilities | | 5,980 | 900 | 1,380 | 8,250 | | 1 |
| TRANSPORTATION | | 5,980 | 900 | 1,380 | 8,250 | | |
| DEMOB OF EQUIPMENT & FACILITIES | | 5,980 | 900 | 1,380 | 8,250 | | |
| DEMOBILIZATION | | 5,980 | 900 | 1,380 | 8,250 | | |
| REMEDIAL ACTION | | 456,470 | 68,470 | 131,260 | 656,200 | | |
| HANFORD: REMEDIATION | | 456,470 | 68,470 | 131,260 | 656,200 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | | | |
| Equipment Mob, Detailed List | | 630 | 90 | 40 | 60 | 10 | 10 | 830 | |
| TRANSPORTATION | | 630 | 90 | 40 | 60 | 10 | 10 | 830 | |
| MOB OF EQUIPMENT & FACILITIES | | 630 | 90 | 40 | 60 | 10 | 10 | 830 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | 37.88 |
| Office Trailers - setup | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 2,280 | 340 | 130 | 220 | 30 | 30 | 3,030 | 37.88 |
| Personnel Decon Facilities | | 2,280 | 340 | 130 | 220 | 30 | 30 | 3,030 | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | |
| DECONTAMINATION FACILITIES | | 3,430 | 510 | 200 | 330 | 40 | 50 | 4,560 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,280 | 940 | 360 | 610 | 80 | 80 | 8,350 | |
| MOBILIZATION & PREPARATORY WORK | | 6,910 | 1,040 | 400 | 670 | 80 | 90 | 9,180 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 5.00 WK | 26,000 | 3,900 | 1,490 | 2,510 | 310 | 340 | 34,560 | 6912.16 |
| QA/Safety Monitoring | | 26,000 | 3,900 | 1,490 | 2,510 | 310 | 340 | 34,560 | |
| QA/Safety Monitoring | | 26,000 | 3,900 | 1,490 | 2,510 | 310 | 340 | 34,560 | |
| QA/Safety Monitoring | | 26,000 | 3,900 | 1,490 | 2,510 | 310 | 340 | 34,560 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 26,000 | 3,900 | 1,490 | 2,510 | 310 | 340 | 34,560 | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 6.00 EA | 306,000 | 45,900 | 17,600 | 29,560 | 3,670 | 4,030 | 406,750 | 67792.31 |
| WELL DRILLING & CONSTRUCTION | | 306,000 | 45,900 | 17,600 | 29,560 | 3,670 | 4,030 | 406,750 | |
| WELL DRILLING & CONSTRUCTION | | 306,000 | 45,900 | 17,600 | 29,560 | 3,670 | 4,030 | 406,750 | |
| EXTRACTION AND INJECTION WELLS | | 306,000 | 45,900 | 17,600 | 29,560 | 3,670 | 4,030 | 406,750 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| GROUNDWATER COLLECTION & CONTROL | | 306,000 | 45,900 | 17,600 | 29,560 | 3,670 | 4,030 | 406,750 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | | | |
| DeMob - Equipment/Facilities | | 4,500 | 680 | 260 | 430 | 50 | 60 | 5,980 | |
| TRANSPORTATION | | 4,500 | 680 | 260 | 430 | 50 | 60 | 5,980 | |
| DEMOB OF EQUIPMENT & FACILITIES | | 4,500 | 680 | 260 | 430 | 50 | 60 | 5,980 | |
| DEMOBILIZATION | | 4,500 | 680 | 260 | 430 | 50 | 60 | 5,980 | |
| REMEDIAL ACTION | | 343,410 | 51,510 | 19,750 | 33,170 | 4,120 | 4,520 | 456,470 | |
| HANFORD: REMEDIATION | | 343,410 | 51,510 | 19,750 | 33,170 | 4,120 | 4,520 | 456,470 | |
| S & A | | | | | | | | 68,470 | |
| SUBTOTAL | | | | | | | | 524,950 | |
| CONTINGENCY | | | | | | | | 131,260 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 656,200 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT & FACILITIES
06 01 01 01. TRANSPORTATION

06 01 01 01 01. Equipment Mob, Detailed List

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 1101 > Mob, Field Office Trailer | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 EA | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| USR AA <01505 7111 > Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | | | 0.00 | 0.00 | 125.00 | 0.00 | 0.00 | 125.00 | |
| | 1.00 EA | 0.00 | 0 | 0 | 125 | 0 | 0 | 125 | 125.00 |
| USR AA <01505 8431 > Mob, Drill Rig, 100-mi Radius | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 EA | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| Equipment Mob, Detailed List | | | 0 | 0 | 625 | 0 | 0 | 625 | |
| TRANSPORTATION | | | 0 | 0 | 625 | 0 | 0 | 625 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01. Office Trailers - setup | | | | | | | | | |
| 06 01 04 01 01 01. Office Trailers - setup<br>Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | |
| Office Trailers - setup | 100.00 HR | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Office Trailers - setup | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | | | |
| 06 01 04 02 01. Personnel Decon Facilities | | | | | | | | | | | |
| 06 01 04 02 01 01. Personnel Decon Facilities<br>Allow 80 mhrs for setup of Decontamination trailer. This is a self-contained unit which includes changing rooms and showers. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Personnel Decon Facilities | 80.00 | HR | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Personnel Decon Facilities | | | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| 06 01 04 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | | | |
| 06 01 04 02 02 01. Equip/Vehicle Decon Facilities<br>Allow 40 mhrs for setup of equipment decon facilities. An allowance for equipment and materials has been added. | | | | | | | | | | | |
| Equip/Vehicle Decon Facilities | | | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| Equip/Vehicle Decon Facilities | | | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| DECONTAMINATION FACILITIES | | | | | 0 | 3,000 | 300 | 130 | 0 | 3,430 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 91. QA/Safety Monitoring
06 02 91 01. QA/Safety Monitoring

06 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

06 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

| | | |
|---|---|---|
| WHC HPT: | 40 Hrs @ $50/Hr | = $2,000 |
| COE Safety Rep: | 40 Hrs @ $70/Hr | = 2,800 |
| COE S.A. for QA: | 8 Hrs @ $50/Hr | = 400 |
| | | $5,200/wk |

Estimated duration of job is 4 weeks, with 1 week for Mob, Setup, & Demob, so use 5 WK.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | 5.00 | WK | | 0 | 26,000 | 0 | 0 | 0 | 26,000 | 5200.00 |
| QA/Safety Monitoring | | | | 0 | 26,000 | 0 | 0 | 0 | 26,000 | |
| QA/Safety Monitoring | | | | 0 | 26,000 | 0 | 0 | 0 | 26,000 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06. GROUNDWATER COLLECTION & CONTROL | | | | | | | | | |
| 06 06 01. EXTRACTION AND INJECTION WELLS | | | | | | | | | |
| 06 06 01 01. WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01. WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 01. WELL DRILLING & CONSTRUCTION<br>For long term monitoring, six 60 VLF wells will be required. The cost for these wells will taken from a recent quote for monitoring wells in the 1100 Area. Assume 2 days to drill and 2 days to develop each well.<br>. | | | | | | | | | |
| USR AA <02580 1001 > 6" Dia, Extraction well | | | 0.00 | 0.00 | 0.00 | 0.00 | 850.00 | 850.00 | |
| From a recent quote to drill monitoring wells in the 1100 Area, use $850/VLF. This cost includes: drilling, installation and development. All SubContr overhead markups, & all safety items are also covered in the unit cost. | 360.00 VLF N/A | 0.00 | 0 | 0 | 0 | 0 | 306,000 | 306,000 | 850.00 |
| WELL DRILLING & CONSTRUCTION | 6.00 EA | | 0 | 0 | 0 | 0 | 306,000 | 306,000 | 51000.00 |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 306,000 | 306,000 | |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 306,000 | 306,000 | |

06 21. DEMOBILIZATION

06 21. DEMOBILIZATION
06 21 04. DEMOB OF EQUIPMENT & FACILITIES
06 21 04 01. TRANSPORTATION

| | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 21 04 01 | 01. DeMob - Equipment/Facilities<br>Assume Demob at 75% of Mob and Setup.<br>. | | | | | | | | | | | |
| | DeMob - Equipment/Facilities | | | | | 0 | 0 | 4,500 | 0 | 0 | 4,500 | |
| | TRANSPORTATION | | | | | 0 | 0 | 4,500 | 0 | 0 | 4,500 | |
| | HANFORD: REMEDIATION | | | | | 0 | 31,500 | 5,675 | 230 | 306,000 | 343,405 | |

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 4
Table of Contents Levels : 5

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |

Print Unit Cost Row : Y
Print Page Footer : N
Show Cost Codes : Y

COLUMNS OPTIONS
Print Crew Id : Y
Crew Output : Y
Unit Cost : Y

UPB TITLES
No. of Levels to Print : 0
Bracket Titles With : - :
Include titles Notes : Y

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

| | | |
|---|---|---|
| Column 1 | FOOH | : JOB OFFICE OVERHEAD |
| Column 2 | HOOH | : HOME OFFICE OVERHEAD |
| Column 3 | PROF | : PROFIT |
| Column 4 | BOND | : PERFORMANCE BOND |
| Column 5 | B&O TAX | : B & O AND OTHER TAXES |

| | | |
|---|---|---|
| Column 1 | S & A | : S & A |
| Column 2 | CONTG | : CONTINGENCY |
| Column 3 | (Unused) | : |
| Column 4 | (Unused) | : |
| Column 5 | (Unused) | : |

STANDARD COLUMN WIDTHS

| | |
|---|---|
| Quantity Columns | : 10 |
| Total cost Columns | : 12 |
| Unit Cost Columns | : 12 |

SUMMARY FEATURES

| | |
|---|---|
| Round Totals Column | : T-Tens |
| Contingency Notes | : Yes |
| Show Project Totals | : Yes |

REPORT SELECTION

| | |
|---|---|
| Project Settings | : Y |
| Contractor Settings | : Y |
| Link Listing | : N |

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) |
|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 1 2 3 4 5 6 |
| Detail | Y | | | |
| Project | N | Y | Y | N N N N N Y |
| Contractor | N | N | | N N N N N N N |
| Division | N | N | N | Y N N N N N N |
| System | N | N | N | Y N N N N N N |
| 2nd View | N | | | |
| Crew | N | | | Y N N N N N N |
| Labor | N | | | |
| Equipment | N | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTION | | | | | | |
| S & A | P | 15.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

DOE/RL-92-67

# GROUNDWATER REMEDIATION
# 100 GPM AIR STRIPPING

9 3 1 2 3 2 1 3 3 0

THIS PAGE INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
GROUNDWATER REMEMDIATION
100 GPM, AIR STRIPPING

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/22/92
Est Construction Time: 30 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This estimate covers initial construction cost for Extraction Scheme 1, Groundwater Remediation, which includes: 100 gpm flow (1 well), with Air Stripping and Reverse Osmosis cleaning, and recharge into ground in 10' W x 4' D drain trench. The design life of this Scheme is 17 years. O & M costs are estimated separately.

1. Normal Contingency for this level of estimate is 20-30%.
2. Using 50% Contingency for Setup & Testing items, as they are undefined.
3. Using 30% Contingency based on uncertainty of the quantities given.

THIS PAGE INTENTIONALLY
LEFT BLANK

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 2,130 | 320 | 490 | 2,940 | | 1 |
| TRANSPORTATION | | 2,130 | 320 | 490 | 2,940 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 2,130 | 320 | 490 | 2,940 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 3,790 | 570 | 2,180 | 6,530 | 65.35 | 2 |
| Office Trailers - setup | | 3,790 | 570 | 2,180 | 6,530 | | |
| TRAILERS AND BUILDINGS | | 3,790 | 570 | 2,180 | 6,530 | | |
| 06 01 04 02 DECONTAMINAITON FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 3,030 | 450 | 1,740 | 5,230 | 65.35 | 2 |
| Personnel Decon Facilities | | 3,030 | 450 | 1,740 | 5,230 | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | 40.00 HR | 1,530 | 230 | 880 | 2,640 | 65.92 | 2 |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,530 | 230 | 880 | 2,640 | | |
| DECONTAMINAITON FACILITIES | | 4,560 | 680 | 2,620 | 7,860 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 8,350 | 1,250 | 4,800 | 14,400 | | |
| MOBILIZATION & PREPARATORY WORK | | 10,470 | 1,570 | 5,290 | 17,330 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 3.50 WK | 24,190 | 3,630 | 6,960 | 34,780 | 9936.23 | 1 |
| QA/Safety Monitoring | | 24,190 | 3,630 | 6,960 | 34,780 | | |
| QA/Safety Monitoring | | 24,190 | 3,630 | 6,960 | 34,780 | | |
| QA/Safety Monitoring | | 24,190 | 3,630 | 6,960 | 34,780 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 24,190 | 3,630 | 6,960 | 34,780 | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 1.00 EA | 67,790 | 10,170 | 19,490 | 97,450 | 97451.45 | 1 |
| WELL DRILLING & CONSTRUCTION | | 67,790 | 10,170 | 19,490 | 97,450 | | |
| WELL DRILLING & CONSTRUCTION | | 67,790 | 10,170 | 19,490 | 97,450 | | |
| EXTRACTION AND INJECTION WELLS | | 67,790 | 10,170 | 19,490 | 97,450 | | |

SUMMARY REPORTS SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 6.....1
PROJECT INDIRECT SUMMARY - LEVEL 6.....5

DETAILED ESTIMATE DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Office Trailers - setup.....3
02. DECONTAMINAITON FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....5
06. GROUNDWATER COLLECTION & CONTROL
01. EXTRACTION AND INJECTION WELLS
01. WELL DRILLING & CONSTRUCTION
01. WELL DRILLING & CONSTRUCTION.....6
02. GROUNDWATER EXTRACTION
04. GROUNDWATER PUMPING F/ REMED ACT
01. Pumping System to A.S./UV Oxid.....8
03. GROUNDWATER INJECTION
01. INJECTION OF TREATED GROUNDWATER
01. Sump & Discharge Pump.....10
02. Recharge Trenches.....11
13. PHYSICAL TREATMENT
07. AIR STRIPPING
05. MOBILIZATION/SETUP/TESTING
01. Mobilization/Setup/Testing.....12
10. OPERATION (LONG TERM-OVER 3 YRS).....13
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. DeMob - Equipment/Facilities.....13

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1

LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 06 02 GROUNDWATER EXTRACTION | | | | | | | |
| 06 06 02 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 02 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 02 04 01 01 Pump, and Control valves | | 5,260 | 790 | 1,510 | 7,560 | | 1 |
| 06 06 02 04 01 02 Manhole for Valving | | 1,430 | 210 | 410 | 2,060 | | 1 |
| Pumping System to A.S./UV Oxid | | 6,690 | 1,000 | 1,920 | 9,620 | | |
| GROUNDWATER PUMPING F/ REMED ACT | | 6,690 | 1,000 | 1,920 | 9,620 | | |
| GROUNDWATER EXTRACTION | | 6,690 | 1,000 | 1,920 | 9,620 | | |
| 06 06 03 GROUNDWATER INJECTION | | | | | | | |
| 06 06 03 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 03 01 01 Sump & Discharge Pump | | | | | | | |
| Sump & Discharge Pump | | 6,280 | 940 | 1,810 | 9,030 | | 1 |
| 06 06 03 01 02 Recharge Trenches | | | | | | | |
| Recharge Trenches | 200.00 LF | 15,790 | 2,370 | 5,450 | 23,610 | 118.03 | 3 |
| INJECTION OF TREATED GROUNDWATER | | 22,070 | 3,310 | 7,250 | 32,640 | | |
| GROUNDWATER INJECTION | | 22,070 | 3,310 | 7,250 | 32,640 | | |
| GROUNDWATER COLLECTION & CONTROL | | 96,560 | 14,480 | 28,670 | 139,710 | | |
| 06 13 PHYSICAL TREATMENT | | | | | | | |
| 06 13 07 AIR STRIPPING | | | | | | | |
| 06 13 07 05 MOBILIZATION/SETUP/TESTING | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 13 07 05 01 Mobilization/Setup/Testing | | | | | | | |
| 06 13 07 05 01 01 Mobilization & Setup | | 216,620 | 32,490 | 62,280 | 311,390 | | 1 |
| 06 13 07 05 01 02 Startup Testing | | 2,130 | 320 | 1,220 | 3,670 | | 2 |
| Mobilization/Setup/Testing | | 218,750 | 32,810 | 63,500 | 315,060 | | |
| MOBILIZATION/SETUP/TESTING | | 218,750 | 32,810 | 63,500 | 315,060 | | |
| 06 13 07 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| AIR STRIPPING | | 218,750 | 32,810 | 63,500 | 315,060 | | |
| PHYSICAL TREATMENT | | 218,750 | 32,810 | 63,500 | 315,060 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| DeMob - Equipment/Facilities | | 7,980 | 1,200 | 1,830 | 11,010 | | 1 |
| TRANSPORTATION | | 7,980 | 1,200 | 1,830 | 11,010 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 7,980 | 1,200 | 1,830 | 11,010 | | |
| DEMOBILIZATION | | 7,980 | 1,200 | 1,830 | 11,010 | | |
| REMEDIAL ACTION | | 357,940 | 53,690 | 106,250 | 517,880 | | |
| HANFORD: REMEDIATION | | 357,940 | 53,690 | 106,250 | 517,880 | | |

| | QUANTITY | UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | | | | |
| Equipment Mob, Detailed List | | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,130 | |
| TRANSPORTATION | | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,130 | |
| MOB OF EQUIPMENT & PERSONNEL | | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,130 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 | HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | 37.88 |
| Office Trailers - setup | | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | |
| TRAILERS AND BUILDINGS | | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | |
| 06 01 04 02 DECONTAMINAITON FACILITIES | | | | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 | HR | 2,280 | 340 | 130 | 220 | 30 | 30 | 3,030 | 37.88 |
| Personnel Decon Facilities | | | 2,280 | 340 | 130 | 220 | 30 | 30 | 3,030 | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | 40.00 | HR | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | 38.22 |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | |
| DECONTAMINAITON FACILITIES | | 3,430 | 510 | 200 | 330 | 40 | 50 | 4,560 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,280 | 940 | 360 | 610 | 80 | 80 | 8,350 | |
| MOBILIZATION & PREPARATORY WORK | | 7,880 | 1,180 | 450 | 760 | 90 | 100 | 10,470 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 3.50 WK | 18,200 | 2,730 | 1,050 | 1,760 | 220 | 240 | 24,190 | 6912.16 |
| QA/Safety Monitoring | | 18,200 | 2,730 | 1,050 | 1,760 | 220 | 240 | 24,190 | |
| QA/Safety Monitoring | | 18,200 | 2,730 | 1,050 | 1,760 | 220 | 240 | 24,190 | |
| QA/Safety Monitoring | | 18,200 | 2,730 | 1,050 | 1,760 | 220 | 240 | 24,190 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 18,200 | 2,730 | 1,050 | 1,760 | 220 | 240 | 24,190 | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 1.00 EA | 51,000 | 7,650 | 2,930 | 4,930 | 610 | 670 | 67,790 | 67792.31 |
| WELL DRILLING & CONSTRUCTION | | 51,000 | 7,650 | 2,930 | 4,930 | 610 | 670 | 67,790 | |
| WELL DRILLING & CONSTRUCTION | | 51,000 | 7,650 | 2,930 | 4,930 | 610 | 670 | 67,790 | |
| EXTRACTION AND INJECTION WELLS | | 51,000 | 7,650 | 2,930 | 4,930 | 610 | 670 | 67,790 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 02 GROUNDWATER EXTRACTION | | | | | | | | | |
| 06 06 02 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | | | |
| 06 06 02 04 01 Pumping System to A.S./UV Oxid | | | | | | | | | |
| 06 06 02 04 01 01 Pump, and Control valves | | 3,960 | 590 | 230 | 380 | 50 | 50 | 5,260 | |
| 06 06 02 04 01 02 Manhole for Valving | | 1,080 | 160 | 60 | 100 | 10 | 10 | 1,430 | |
| Pumping System to A.S./UV Oxid | | 5,030 | 760 | 290 | 490 | 60 | 70 | 6,690 | |
| GROUNDWATER PUMPING F/ REMED ACT | | 5,030 | 760 | 290 | 490 | 60 | 70 | 6,690 | |
| GROUNDWATER EXTRACTION | | 5,030 | 760 | 290 | 490 | 60 | 70 | 6,690 | |
| 06 06 03 GROUNDWATER INJECTION | | | | | | | | | |
| 06 06 03 01 INJECTION OF TREATED GROUNDWATER | | | | | | | | | |
| 06 06 03 01 01 Sump & Discharge Pump | | | | | | | | | |
| Sump & Discharge Pump | | 4,730 | 710 | 270 | 460 | 60 | 60 | 6,280 | |
| 06 06 03 01 02 Recharge Trenches | | | | | | | | | |
| Recharge Trenches | 200.00 LF | 11,880 | 1,780 | 680 | 1,150 | 140 | 160 | 15,790 | 78.95 |
| INJECTION OF TREATED GROUNDWATER | | 16,600 | 2,490 | 950 | 1,600 | 200 | 220 | 22,070 | |
| GROUNDWATER INJECTION | | 16,600 | 2,490 | 950 | 1,600 | 200 | 220 | 22,070 | |
| GROUNDWATER COLLECTION & CONTROL | | 72,640 | 10,900 | 4,180 | 7,020 | 870 | 960 | 96,560 | |
| 06 13 PHYSICAL TREATMENT | | | | | | | | | |
| 06 13 07 AIR STRIPPING | | | | | | | | | |
| 06 13 07 05 MOBILIZATION/SETUP/TESTING | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 13 07 05 01 Mobilization/Setup/Testing | | | | | | | | | |
| 06 13 07 05 01 01 Mobilization & Setup | | 162,960 | 24,440 | 9,370 | 15,740 | 1,960 | 2,140 | 216,620 | |
| 06 13 07 05 01 02 Startup Testing | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,130 | |
| Mobilization/Setup/Testing | | 164,560 | 24,680 | 9,460 | 15,900 | 1,970 | 2,170 | 218,750 | |
| MOBILIZATION/SETUP/TESTING | | 164,560 | 24,680 | 9,460 | 15,900 | 1,970 | 2,170 | 218,750 | |
| 06 13 07 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | | | |
| AIR STRIPPING | | 164,560 | 24,680 | 9,460 | 15,900 | 1,970 | 2,170 | 218,750 | |
| PHYSICAL TREATMENT | | 164,560 | 24,680 | 9,460 | 15,900 | 1,970 | 2,170 | 218,750 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | | | |
| DeMob - Equipment/Facilities | | 6,000 | 900 | 350 | 580 | 70 | 80 | 7,980 | |
| TRANSPORTATION | | 6,000 | 900 | 350 | 580 | 70 | 80 | 7,980 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 6,000 | 900 | 350 | 580 | 70 | 80 | 7,980 | |
| DEMOBILIZATION | | 6,000 | 900 | 350 | 580 | 70 | 80 | 7,980 | |
| REMEDIAL ACTION | | 269,280 | 40,390 | 15,480 | 26,010 | 3,230 | 3,540 | 357,940 | |
| HANFORD: REMEDIATION | | 269,280 | 40,390 | 15,480 | 26,010 | 3,230 | 3,540 | 357,940 | |
| S & A | | | | | | | | 53,690 | |
| SUBTOTAL | | | | | | | | 411,640 | |
| CONTINGENCY | | | | | | | | 106,250 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 517,880 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION & PREPARATORY WORK
Allow 1 week for Mob of equipment, setup, & Demob.

06 01 01. MOB OF EQUIPMENT & PERSONNEL
06 01 01 01. TRANSPORTATION

06 01 01 01 01. Equipment Mob, Detailed List

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 1101 > Mob, Field Office Trailer | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 EA | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| USR AA <01505 1102 > Mob, Crane, Hy, SP, 16-25 Ton, Rough Terrain, 4WD, 100-mi Rad | | | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 500.00 | |
| | 1.00 EA | 0.00 | 0 | 0 | 500 | 0 | 0 | 500 | 500.00 |
| USR AA <01505 3102 > Mob, Loader/Backhoe, 1-1.5 CY, 100-mi Radius | | | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 200.00 | |
| | 1.00 EA | 0.00 | 0 | 0 | 200 | 0 | 0 | 200 | 200.00 |
| USR AA <01505 7111 > Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | | | 0.00 | 0.00 | 125.00 | 0.00 | 0.00 | 125.00 | |
| | 1.00 EA | 0.00 | 0 | 0 | 125 | 0 | 0 | 125 | 125.00 |
| USR AA <01505 7123 > Mob, End Dump trailer, 12 CY, w/CLT8000 Trk, 100-mi Radius | | | 0.00 | 0.00 | 125.00 | 0.00 | 0.00 | 125.00 | |
| | 1.00 EA | 0.00 | 0 | 0 | 125 | 0 | 0 | 125 | 125.00 |
| USR AA <01505 8412 > Mob, Compactor, VIB, 32" Plate, 100-mi Radius | | | 0.00 | 0.00 | 75.00 | 0.00 | 0.00 | 75.00 | |
| | 2.00 EA | 0.00 | 0 | 0 | 150 | 0 | 0 | 150 | 75.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 8431 > Mob, Drill Rig, 100-mi Radius | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 EA | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| Equipment Mob, Detailed List | | | 0 | 0 | 1,600 | 0 | 0 | 1,600 | |
| TRANSPORTATION | | | 0 | 0 | 1,600 | 0 | 0 | 1,600 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | | | |
| 06 01 04 01 01. Office Trailers - setup | | | | | | | | | | | |
| 06 01 04 01 01 01. Office Trailers - setup<br>Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Office Trailers - setup | 100.00 | HR | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Office Trailers - setup | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINAITON FACILITIES | | | | | | | | | |
| 06 01 04 02 01. Personnel Decon Facilities | | | | | | | | | |
| 06 01 04 02 01 01. Personnel Decon Facilities<br>Allow 80 mhrs for setup of Decontamination trailer. An allowance for some equipment and material has been added. | | | | | | | | | |
| Personnel Decon Facilities | 80.00 HR | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Personnel Decon Facilities | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| 06 01 04 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 04 02 02 01. Equip/Vehicle Decon Facilities<br>Allow 40 mhrs for setup of equipment decon facilities. | | | | | | | | | |
| Equip/Vehicle Decon Facilities | 40.00 HR | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | 28.75 |
| Equip/Vehicle Decon Facilities | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| DECONTAMINAITON FACILITIES | | | 0 | 3,000 | 300 | 130 | 0 | 3,430 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 91. QA/Safety Monitoring
06 02 91 01. QA/Safety Monitoring

06 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

06 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

WHC HPT: 40 Hrs @ $50/Hr = $2,000
COE Safety Rep: 40 Hrs @ $70/Hr = 2,800
COE S.A. for QA: 8 Hrs @ $50/Hr = 400
---
$5,200

Estimated duration of job is 4 weeks, with 1 week for Mob, Setup, & Demob,
so use 3.5 WK.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | 3.50 | WK | | 0 | 18,200 | 0 | 0 | 0 | 18,200 | 5200.00 |
| QA/Safety Monitoring | | | | 0 | 18,200 | 0 | 0 | 0 | 18,200 | |
| QA/Safety Monitoring | | | | 0 | 18,200 | 0 | 0 | 0 | 18,200 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

06 06. GROUNDWATER COLLECTION & CONTROL

This feature covers the groundwater collection, control, and recharge system, exclusive of the treatment system. Major equipment suppliers have provided costs for the following items:

well pump: Flint & Walling, United Pipe & Supply
air release valves: APCO Valves
strainer: Hayward Strainer Company Control Factors, Inc.
flow control valves: Griswold Controls
sump pump: PACO Pumps
flow meters: Signet

06 06 01. EXTRACTION AND INJECTION WELLS

06 06 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01 01. WELL DRILLING & CONSTRUCTION

For Extraction Scheme 1, one 60 VLF well will be required. A well point type well will probably be all that is needed, however, as the type and construction of the extractions wells has not been defined, it is assumed for this estimate that a monitoring type well may be required. This is a conservative assumption, as well points are much cheaper than monitoring wells.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <02580 1001 > 6" Dia, Extraction well | | | 0.00 | 0.00 | 0.00 | 0.00 | 850.00 | 850.00 | |
| from a recent quote to drill monitoring wells in the 1100 Area, use $850/VLF. This cost includes all drilling and well installation costs, as well as development. Assumed SubContr overhead markups, & all safety requirements and personnel are also covered in the unit cost. Assume two days per well to drill, and two days for well development. | 60.00 VLF N/A | 0.00 | 0 | 0 | 0 | 0 | 51,000 | 51,000 | 850.00 |
| WELL DRILLING & CONSTRUCTION | 1.00 EA | | 0 | 0 | 0 | 0 | 51,000 | 51,000 | 51000.00 |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 51,000 | 51,000 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| WELL DRILLING & CONSTRUCTION | | | | | 0 | 0 | 0 | 0 | 51,000 | 51,000 | |

06 06. GROUNDWATER COLLECTION & CONTROL

06 06 02. GROUNDWATER EXTRACTION
06 06 02 04. GROUNDWATER PUMPING F/ REMED ACT

06 06 02 04 01. Pumping System to A.S./UV Oxid

06 06 02 04 01 01. Pump, and Control valves
Estimate 2 days for two crews.

| | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B MIL AA <15061 1108 > | 3" D, Galv Steel Pipe | | | | | 0.38 | 10.83 | 0.14 | 4.04 | 0.00 | 15.01 | |
| | ASTM A-53, T&C, Sch 40 | 50.00 | LF | MPLUE | 6.50 | 19 | 541 | 7 | 202 | 0 | 751 | 15.01 |
| M USR AA <15083 1108 > | 3" Simplex Basket Strainer. | | | | | 1.25 | 35.19 | 0.47 | 416.11 | 0.00 | 451.77 | |
| | Hayward Co., flanged connections | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 416 | 0 | 452 | 451.77 |
| | Model 72, cast iron. | | | | | | | | | | | |
| M USR AA <15101 1105 > | 1" Bronze, 125# Gate Valve | | | | | 1.05 | 29.64 | 0.39 | 16.17 | 0.00 | 46.20 | |
| | Threaded, Brazed or Soldered | 2.00 | EA | MPLUE | 2.38 | 2 | 59 | 1 | 32 | 0 | 92 | 46.20 |
| M USR AA <15110 1103 > | 3" Single Disc Type Check Valve | | | | | 1.25 | 35.19 | 0.47 | 134.75 | 0.00 | 170.41 | |
| | IB Wafer Type- 125# | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 135 | 0 | 170 | 170.41 |
| M USR AA <15121 1106 > | 3" Auto pressure-compensating | | | | | 1.25 | 35.19 | 0.47 | 603.68 | 0.00 | 639.34 | |
| | constant-flow control valve. | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 604 | 0 | 639 | 639.34 |
| | Griswold Controls model #3332A. | | | | | | | | | | | |
| M USR AA <15146 2001 > | 100 GPH Submersible Pump | | | | | 20.00 | 568.20 | 86.32 | 970.20 | 0.00 | 1624.72 | |
| | 6" Disch for Wells, 50-150'Deep | 1.00 | EA | MPLUS | 0.18 | 20 | 568 | 86 | 970 | 0 | 1,625 | 1624.72 |
| | F&W #6P080A05, 5 HP | | | | | | | | | | | |
| M USR AA <15122 1103 > | 1" air release valve, APCO #50 | | | | | 1.25 | 35.19 | 0.47 | 32.34 | 0.00 | 68.00 | |
| | | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 32 | 0 | 68 | 68.00 |
| B USR AA <15182 1008 > | Fbgs Cover for 3" D Pipe, 1" Thk | | | | | 0.10 | 2.00 | 0.05 | 1.62 | 0.00 | 3.67 | |
| | With Fire Retardant Jacket | 30.00 | LF | N/A | 0.00 | 3 | 60 | 2 | 49 | 0 | 110 | 3.67 |
| M USR AA <15061 2391 > | 3" x 1" Reducer, Eccentric | | | | | 0.63 | 17.60 | 0.23 | 7.01 | 0.00 | 24.84 | |
| | | 2.00 | EA | MPLUE | 4.00 | 1 | 35 | 0 | 14 | 0 | 50 | 24.84 |
| | Pump, and Control valves | | | | | 51 | 1,405 | 98 | 2,454 | 0 | 3,957 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 02 04 01 02. Manhole for Valving<br>Estimate 1 day. | | | | | | | | | |
| M USR AA <02560 5201 > 4' Dia x4' Deep, Precast Manhole | | | 13.00 | 313.84 | 47.49 | 215.60 | 500.00 | 1076.93 | |
| 8" Tk, Add: $500 for excavation and backfilling. | 1.00 EA CODEJ | 0.25 | 13 | 314 | 47 | 216 | 500 | 1,077 | 1076.93 |
| Manhole for Valving | | | 13 | 314 | 47 | 216 | 500 | 1,077 | |
| Pumping System to A.S./UV Oxid | | | 64 | 1,719 | 146 | 2,670 | 500 | 5,034 | |
| GROUNDWATER PUMPING F/ REMED ACT | | | 64 | 1,719 | 146 | 2,670 | 500 | 5,034 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 06 03. GROUNDWATER INJECTION | | | | | | | | | | | |
| 06 06 03 01. INJECTION OF TREATED GROUNDWATER | | | | | | | | | | | |
| 06 06 03 01 01. Sump & Discharge Pump | | | | | | | | | | | |
| Allow 3 days for two crews. | | | | | | | | | | | |
| M USR AA <02533 1012 > Submersible Sump Pump, 120 GPM, | | | | | 5.00 | 140.77 | 1.86 | 2263.80 | 0.00 | 2406.43 | |
| 1/2 HP, 20' Head, 2" Discharge | 1.00 | EA | MPLUE | 0.50 | 5 | 141 | 2 | 2,264 | 0 | 2,406 | 2406.43 |
| PACO #401283 | | | | | | | | | | | |
| M USR AA <15101 1105 > 1" Bronze, 125# Gate Valve | | | | | 1.05 | 29.64 | 0.39 | 16.17 | 0.00 | 46.20 | |
| Threaded, Brazed or Soldered | 2.00 | EA | MPLUE | 2.38 | 2 | 59 | 1 | 32 | 0 | 92 | 46.20 |
| M USR AA <15110 1104 > 4" Single Disc Type Check Valve | | | | | 1.25 | 35.19 | 0.47 | 188.65 | 0.00 | 224.31 | |
| IB Wafer Type- 125# | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 189 | 0 | 224 | 224.31 |
| M USR AA <15122 1103 > 1" air release valve, APCO #50 | | | | | 1.25 | 35.19 | 0.47 | 32.34 | 0.00 | 68.00 | |
| | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 32 | 0 | 68 | 68.00 |
| M USR AA <02560 5201 > 4' Dia x4' Deep, Precast Manhole | | | | | 6.50 | 156.92 | 23.75 | 215.60 | 500.00 | 896.27 | |
| 8" Tk, Add: $500 for excavation | 1.00 | EA | CODEJ | 0.50 | 7 | 157 | 24 | 216 | 500 | 896 | 896.27 |
| and backfilling. | | | | | | | | | | | |
| L MIL AA <15064 4111 > 3" PVC Drain & Sewer Pipe | | | | | 0.08 | 2.35 | 0.03 | 0.52 | 0.00 | 2.89 | |
| | 300.00 | LF | MPLUE | 30.00 | 25 | 704 | 9 | 155 | 0 | 868 | 2.89 |
| L MIL AA <15064 4112 > 4" PVC Drain & Sewer Pipe | | | | | 0.13 | 3.52 | 0.05 | 0.65 | 0.00 | 4.21 | |
| | 10.00 | LF | MPLUE | 20.00 | 1 | 35 | 0 | 6 | 0 | 42 | 4.21 |
| L MIL AA <15064 4121 > 3" 90 Degree Elbow, PVC D&S | | | | | 0.50 | 14.08 | 0.19 | 1.19 | 0.00 | 15.45 | |
| | 3.00 | EA | MPLUE | 5.00 | 2 | 42 | 1 | 4 | 0 | 46 | 15.45 |
| L MIL AA <15064 4151 > 3" Tee, PVC Drain & Sewer | | | | | 0.63 | 17.60 | 0.23 | 1.14 | 0.00 | 18.97 | |
| | 3.00 | EA | MPLUE | 4.00 | 2 | 53 | 1 | 3 | 0 | 57 | 18.97 |
| M USR AA <15061 2391 > 3" x 1" Reducer, Eccentric | | | | | 0.63 | 17.60 | 0.23 | 7.01 | 0.00 | 24.84 | |
| | 1.00 | EA | MPLUE | 4.00 | 1 | 18 | 0 | 7 | 0 | 25 | 24.84 |
| Sump & Discharge Pump | | | | | 46 | 1,279 | 39 | 2,908 | 500 | 4,726 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 06 03 01 02. Recharge Trenches<br>This item covers installation of a 200 LF, 10' W x 4' D recharge trench.<br>Allow 4 days for installation of trench. | | | | | | | | | | | |
| USR AA <02520 5013 > Exc, 10'x4' Undergrnd Trench Drn | | | | | 0.06 | 1.53 | 0.47 | 0.00 | 0.00 | 2.00 | |
| Excavation, Q: 382 CY, use: 400 LCY (also includes trenches for piping from well to cleaner unit, and to recharge trench). | 400.00 | LCY | CODEG | 25.00 | 24 | 613 | 187 | 0 | 0 | 801 | 2.00 |
| L MIL AA <02225 3104 > Haul waste, 12 CY Truck, 1-Mi, | | | | | 0.03 | 0.68 | 0.57 | 0.00 | 0.00 | 1.25 | |
| 20 MPH, 4.2 Cycles/Hr. Assume waste soil hauled to a close by area for dumping. | 400.00 | LCY | COEID | 40.00 | 10 | 272 | 226 | 0 | 0 | 498 | 1.25 |
| B MIL AA <02520 5013 > Backfill w/ Pipe Bedding & Cmpct | | | | | 0.22 | 5.23 | 0.79 | 21.56 | 0.00 | 27.58 | |
| Assume pipe bedding bought and delivered for $20/LCY. | 325.00 | LCY | CODEJ | 15.00 | 70 | 1,700 | 257 | 7,007 | 0 | 8,964 | 27.58 |
| USR AA <02511 2105 > 12" D, Perf PVC Pipe, Underdrain | | | | | 0.13 | 3.14 | 0.47 | 4.04 | 0.00 | 7.66 | |
| | 200.00 | LF | CODEJ | 25.00 | 26 | 628 | 95 | 809 | 0 | 1,531 | 7.66 |
| B MIL AA <15064 4153 > 12" Tee, PVC Drain & Sewer | | | | | 0.63 | 17.60 | 0.23 | 21.56 | 0.00 | 39.39 | |
| | 1.00 | EA | MPLUE | 4.00 | 1 | 18 | 0 | 22 | 0 | 39 | 39.39 |
| B MIL AA <15064 4165 > 12"x3" Reducer, Drain & Sewer | | | | | 0.63 | 17.60 | 0.23 | 26.95 | 0.00 | 44.78 | |
| | 1.00 | EA | MPLUE | 4.00 | 1 | 18 | 0 | 27 | 0 | 45 | 44.78 |
| Recharge Trenches | 200.00 | LF | | | 132 | 3,249 | 766 | 7,864 | 0 | 11,879 | 59.39 |
| INJECTION OF TREATED GROUNDWATER | | | | | 178 | 4,528 | 804 | 10,772 | 500 | 16,605 | |

| 06 13. PHYSICAL TREATMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 13. PHYSICAL TREATMENT | | | | | | | | | |
| 06 13 07. AIR STRIPPING | | | | | | | | | |
| 06 13 07 05. MOBILIZATION/SETUP/TESTING | | | | | | | | | |
| 06 13 07 05 01. Mobilization/Setup/Testing<br>Assume 1 week needed for Mob-in, setup, and testing. | | | | | | | | | |
| 06 13 07 05 01 01. Mobilization & Setup | | | | | | | | | |
| USR AA <01944 8001 > Concrete pad, assume 5'x5'x0.5' | | | 0.00 | 0.00 | 0.00 | 161.70 | 0.00 | 161.70 | |
| Cost for 0.5 CY @ $300/CY | 1.00 LS | 0.00 | 0 | 0 | 0 | 162 | 0 | 162 | 161.70 |
| USR AA <01944 8001 > Mobilization of Air stripper | | | 0.00 | 0.00 | 13000.00 | 0.00 | 0.00 | 13000.00 | |
| Assume at 10% of unit cost. | 0.10 PCT | 0.00 | 0 | 0 | 1,300 | 0 | 0 | 1,300 | 13000.00 |
| USR AA <01944 8001 > 100 gpm, Air Stripper Unit | | | 0.00 | 0.00 | 0.00 | 0.00 | 13000.00 | 13000.00 | |
| 2' D x 25' Tower, 15' packing, 1 HP blower. Cost from Frank Lenzo, Hydro Group, Bridgeport, NJ, 1-800-524-2725. | 1.00 LS | 0.00 | 0 | 0 | 0 | 0 | 13,000 | 13,000 | 13000.00 |
| USR AA <01944 8001 > 100 gpm, Reverse Osmosis Unit | | | 0.00 | 0.00 | 0.00 | 0.00 | 148500.00 | 148500.00 | |
| Culligan brand. Cost from Frank Rouse, Water Quality Control, WA | 1.00 LS | 0.00 | 0 | 0 | 0 | 0 | 148,500 | 148,500 | 148500.00 |
| Mobilization & Setup | | | 0 | 0 | 1,300 | 162 | 161,500 | 162,962 | |
| 06 13 07 05 01 02. Startup Testing<br>Assume a week of testing needed. | | | | | | | | | |
| Startup Testing | | | 0 | 1,250 | 250 | 100 | 0 | 1,600 | |
| Mobilization/Setup/Testing | | | 0 | 1,250 | 1,550 | 262 | 161,500 | 164,562 | |
| MOBILIZATION/SETUP/TESTING | | | 0 | 1,250 | 1,550 | 262 | 161,500 | 164,562 | |

9 3 1 2 3 ' 2 1 8 5 6

Thu 22 Oct 1992 U.S. Army Corps of Engineers TIME 15:37:19
PROJECT GW100A: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
DETAILED ESTIMATE 1100-EM-1, G.W. REMED., SCHEME 1, AIR STRIPPING DETAIL PAGE 13
06. REMEDIAL ACTION

| 06 13. PHYSICAL TREATMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 13 07 10. OPERATION (LONG TERM-OVER 3 YRS) Operation and O&M costs will be estimated separately. | | | | | | | | | |
| OPERATION (LONG TERM-OVER 3 YRS) | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 21. DEMOBILIZATION | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01. DeMob - Equipment/Facilities Assume Demob at 75% of Mob and Setup. | | | | | | | | | |
| DeMob - Equipment/Facilities | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| TRANSPORTATION | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| HANFORD: REMEDIATION | | | 242 | 31,196 | 10,650 | 13,934 | 213,500 | 269,280 | |

LABOR ID: DWABGE EQUIP ID: NAT92A Currency in DOLLARS CREW ID: NAT92A UPB ID: NAT92A

THIS PAGE INTENTIONALLY
LEFT BLANK

Thu 22 Oct 1992

U.S. Army Corps of Engineers
PROJECT GW100A: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 1, AIR STRIPPING
** CREW BACKUP **

TIME 15:37:19



| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CODEG | 1 B-eqoprmed + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 32 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 11.69 | 50.03 |
| | CODEJ | 2 B-laborer + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 71 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 2.00 | HR | 23.44 | 2.00 | 46.28 | | | 46.28 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 3.25 | 78.46 | 1.13 | 11.87 | 90.33 |
| | COEID | 1 B-trkdvrhv + 1 Dump Truck, 12 Cy | | | PROD = | 100% | | | CREW HOURS = | 20 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 1.00 | HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| MIL | T40XX010 E | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.00 | HR | 2.63 | | | 1.00 | 2.63 | 2.63 |
| MIL | T50GM016 E | TRK, HWY, 3 AXLE, 41000 GVW, 6X | 1.00 | HR | 19.97 | | | 1.00 | 19.97 | 19.97 |
| | TOTAL | | | | | 1.00 | 27.24 | 2.00 | 22.60 | 49.84 |
| | MPLUE | 1 B-plumber + Small Tools | | | PROD = | 100% | | | CREW HOURS = | 55 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | B-PLUMBER F | Plumbers | 0.50 | HR | 31.83 | 0.50 | 15.92 | | | 15.92 |
| MIL | XMIXX020 E | Small Tools | 0.67 | HR | 1.39 | | | 0.67 | 0.93 | 0.93 |
| | TOTAL | | | | | 2.50 | 70.38 | 0.67 | 0.93 | 71.32 |
| | MPLUS | 2 B-plumber + 1- 14 Ton Crane, Hydraulic | | | PROD = | 100% | | | CREW HOURS = | 11 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 0.50 | HR | 26.27 | 0.50 | 13.14 | | | 13.14 |
| MIL | B-PLUMBER F | Plumbers | 1.00 | HR | 31.83 | 1.00 | 31.83 | | | 31.83 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | C75GV001 E | CRANE,HYD,SELF,ROUGH TER,4WD,18 | 0.50 | HR | 28.66 | | | 0.50 | 14.33 | 14.33 |
| MIL | XMIXX020 E | Small Tools | 0.56 | HR | 1.39 | | | 0.56 | 0.78 | 0.78 |
| | TOTAL | | | | | 3.50 | 99.43 | 1.06 | 15.11 | 114.54 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 109 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 243 |
| MIL | B-PLUMBER | Plumbers | 31.33 | 0.0% | 0.0% | 0.00 | 0.00 | 31.33 | HR | 10/22/92 | 23.92 | 105 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 20 |

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | C75GV001 | CRANE,HYD,SELF,ROUGH TER,4WD,18T | 9.20 | 3.48 | 3.62 | 1.0 | 9.89 | 1.20 | 0.18 | 28.66 | HR | 6 |
| MIL | L50CS002 | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 3.42 | 1.16 | 1.86 | 0.6 | 4.04 | 0.53 | 0.08 | 11.69 | HR | 103 |
| MIL | T40XX010 | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.15 | 0.28 | | 0.0 | 1.11 | | | 2.63 | HR | 20 |
| MIL | T50GM016 | TRK, HWY, 3 AXLE, 41000 GVW, 6X4 | 4.17 | 1.08 | 7.46 | 2.0 | 3.69 | 1.29 | 0.19 | 19.97 | HR | 20 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 52 |

THIS PAGE INTENTIONALLY
LEFT BLANK

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 4
Table of Contents Levels : 5

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |
| | Print Unit Cost Row : | Y | | | | | | | |
| | Print Page Footer : | Y | | | | | | | |
| | Show Cost Codes : | Y | | | | | | | |
| COLUMNS OPTIONS | Print Crew Id : | Y | | | | | | | |
| | Crew Output : | Y | | | | | | | |
| | Unit Cost : | Y | | | | | | | |
| UPB TITLES | No. of Levels to Print : | 0 | | | | | | | |
| | Bracket Titles With : | - : | | | | | | | |
| | Include titles Notes : | Y | | | | | | | |

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y Measurement Units : Original
Link Listing : N

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) |
|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 1 2 3 4 5 6 |
| Detail : | Y | | | |
| Project : | N | Y | Y | N N N N N Y |
| Contractor : | N | N | | N N N N N N N |
| Division : | N | N | N | Y N N N N N N |
| System : | N | N | N | Y N N N N N N |
| 2nd View : | N | | | |
| Crew : | Y | | | Y N N N N N N |
| Labor : | Y | | | |
| Equipment : | Y | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTION | | | | | | |
| S & A | P | 15.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINAITON FACILITIES | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 25.00 | | | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 02 GROUNDWATER EXTRACTION | | | | | | | |
| 06 06 02 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 02 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 02 04 01 01 Pump, and Control valves | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 02 04 01 02 Manhole for Valving | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 03 GROUNDWATER INJECTION | | | | | | | |
| 06 06 03 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 03 01 01 Sump & Discharge Pump | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 03 01 02 Recharge Trenches | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |
| 06 13 PHYSICAL TREATMENT | | | | | | | |
| 06 13 07 AIR STRIPPING | | | | | | | |
| 06 13 07 05 MOBILIZATION/SETUP/TESTING | | | | | | | |
| 06 13 07 05 01 Mobilization/Setup/Testing | | | | | | | |
| 06 13 07 05 01 01 Mobilization & Setup | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 13 07 05 01 02 Startup Testing | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 50.00 | | | | |
| 06 13 07 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | O | | | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

DOE/RL-92-67

# GROUNDWATER REMEDIATION
# 100 GPM UV OXIDATION

THIS PAGE INTENTIONALLY
LEFT BLANK

9 3 1 2 3 2 1 3 6 7

THIS PAGE INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
GROUNDWATER REMEMDIATION
100 GPM, UV OXIDATION

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/22/92
Est Construction Time: 30 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This estimate covers initial construction cost for Extraction Scheme 1, Groundwater Remediation, which includes: 100 gpm flow (1 well), with UV Oxidation and Reverse Osmosis cleaning, and recharge into ground in 10' W x 4' D drain trench. The design life of the Scheme is 17 years. O & M costs are estimated separately.

1. Normal Contingency for this level of estimate is 20-30%.
2. Using 50% Contingency for Setup & Testing items, as they are undefined.
3. Using 30% Contingency based on uncertainty of the quantities given.

THIS PAGE INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS — SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 6.....1
PROJECT INDIRECT SUMMARY - LEVEL 6.....5

DETAILED ESTIMATE — DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....5
06. GROUNDWATER COLLECTION & CONTROL
01. EXTRACTION AND INJECTION WELLS
01. WELL DRILLING & CONSTRUCTION
01. WELL DRILLING & CONSTRUCTION.....6
02. GROUNDWATER EXTRACTION
04. GROUNDWATER PUMPING F/ REMED ACT
01. Pumping System to A.S./UV Oxid.....7
03. GROUNDWATER INJECTION
01. INJECTION OF TREATED GROUNDWATER
01. Sump & Discharge Pump.....9
02. Recharge Trenches.....10
12. CHEMICAL TREATMENT
01. OZONE/HYDROGEN PEROXIDE/UV OXID.
05. MOBILIZATION/SETUP/TESTING
01. Mobilization, Setup, & Testing.....11
10. OPERATION (LONG TERM-OVER 3 YRS).....12
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. DeMob - Equipment/Facilities.....12

BACKUP REPORTS — BACKUP PAGE

CREW BACKUP.....1

LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 2,130 | 320 | 490 | 2,940 | | 1 |
| TRANSPORTATION | | 2,130 | 320 | 490 | 2,940 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 2,130 | 320 | 490 | 2,940 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 3,790 | 570 | 2,180 | 6,530 | 65.35 | 2 |
| Office Trailers - setup | | 3,790 | 570 | 2,180 | 6,530 | | |
| TRAILERS AND BUILDINGS | | 3,790 | 570 | 2,180 | 6,530 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 3,030 | 450 | 1,740 | 5,230 | 65.35 | 2 |
| Personnel Decon Facilities | | 3,030 | 450 | 1,740 | 5,230 | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,530 | 230 | 880 | 2,640 | | 2 |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,530 | 230 | 880 | 2,640 | | |
| DECONTAMINATION FACILITIES | | 4,560 | 680 | 2,620 | 7,860 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 8,350 | 1,250 | 4,800 | 14,400 | | |
| MOBILIZATION & PREPARATORY WORK | | 10,470 | 1,570 | 5,290 | 17,330 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 3.50 WK | 24,190 | 3,630 | 5,560 | 33,390 | 9538.78 | 1 |
| QA/Safety Monitoring | | 24,190 | 3,630 | 5,560 | 33,390 | | |
| QA/Safety Monitoring | | 24,190 | 3,630 | 5,560 | 33,390 | | |
| QA/Safety Monitoring | | 24,190 | 3,630 | 5,560 | 33,390 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 24,190 | 3,630 | 5,560 | 33,390 | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 1.00 EA | 67,790 | 10,170 | 19,490 | 97,450 | 97451.45 | 1 |
| WELL DRILLING & CONSTRUCTION | | 67,790 | 10,170 | 19,490 | 97,450 | | |
| WELL DRILLING & CONSTRUCTION | | 67,790 | 10,170 | 19,490 | 97,450 | | |
| EXTRACTION AND INJECTION WELLS | | 67,790 | 10,170 | 19,490 | 97,450 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 06 02 GROUNDWATER EXTRACTION | | | | | | | |
| 06 06 02 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 02 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 02 04 01 01 Pump, and Control valves | | 5,260 | 790 | 1,810 | 7,860 | | 3 |
| 06 06 02 04 01 02 Manhole for Valving | | 1,190 | 180 | 340 | 1,700 | | 1 |
| Pumping System to A.S./UV Oxid | | 6,450 | 970 | 2,160 | 9,570 | | |
| GROUNDWATER PUMPING F/ REMED ACT | | 6,450 | 970 | 2,160 | 9,570 | | |
| GROUNDWATER EXTRACTION | | 6,450 | 970 | 2,160 | 9,570 | | |
| 06 06 03 GROUNDWATER INJECTION | | | | | | | |
| 06 06 03 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 03 01 01 Sump & Discharge Pump | | | | | | | |
| Sump & Discharge Pump | | 6,280 | 940 | 2,170 | 9,390 | | 3 |
| 06 06 03 01 02 Recharge Trenches | | | | | | | |
| Recharge Trenches | | 18,120 | 2,720 | 6,250 | 27,090 | | 3 |
| INJECTION OF TREATED GROUNDWATER | | 24,400 | 3,660 | 8,420 | 36,480 | | |
| GROUNDWATER INJECTION | | 24,400 | 3,660 | 8,420 | 36,480 | | |
| GROUNDWATER COLLECTION & CONTROL | | 98,640 | 14,800 | 30,060 | 143,500 | | |
| 06 12 CHEMICAL TREATMENT | | | | | | | |
| 06 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | |
| 06 12 01 05 MOBILIZATION/SETUP/TESTING | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 12 01 05 01 Mobilization, Setup, & Testing | | | | | | | |
| 06 12 01 05 01 01 Purchase of UV Oxidation Unit | | 252,560 | 37,880 | 58,090 | 348,530 | | 1 |
| 06 12 01 05 01 02 Purchase, Reverse Osmosis Unit | | 194,070 | 29,110 | 44,640 | 267,820 | | 1 |
| 06 12 01 05 01 03 Mob, Setup & Testing | | 11,960 | 1,790 | 6,880 | 20,640 | | 2 |
| Mobilization, Setup, & Testing | | 458,600 | 68,790 | 109,600 | 636,990 | | |
| MOBILIZATION/SETUP/TESTING | | 458,600 | 68,790 | 109,600 | 636,990 | | |
| 06 12 01 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| OZONE/HYDROGEN PEROXIDE/UV OXID. | | 458,600 | 68,790 | 109,600 | 636,990 | | |
| CHEMICAL TREATMENT | | 458,600 | 68,790 | 109,600 | 636,990 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| DeMob - Equipment/Facilities | | 7,980 | 1,200 | 1,830 | 11,010 | | 1 |
| TRANSPORTATION | | 7,980 | 1,200 | 1,830 | 11,010 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 7,980 | 1,200 | 1,830 | 11,010 | | |
| DEMOBILIZATION | | 7,980 | 1,200 | 1,830 | 11,010 | | |
| REMEDIAL ACTION | | 599,880 | 89,980 | 152,360 | 842,210 | | |
| HANFORD: REMEDIATION | | 599,880 | 89,980 | 152,360 | 842,210 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | | | |
| Equipment Mob, Detailed List | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,130 | |
| TRANSPORTATION | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,130 | |
| MOB OF EQUIPMENT & PERSONNEL | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,130 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | 37.88 |
| Office Trailers - setup | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,790 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 2,280 | 340 | 130 | 220 | 30 | 30 | 3,030 | 37.88 |
| Personnel Decon Facilities | | 2,280 | 340 | 130 | 220 | 30 | 30 | 3,030 | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | |
| DECONTAMINATION FACILITIES | | 3,430 | 510 | 200 | 330 | 40 | 50 | 4,560 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,280 | 940 | 360 | 610 | 80 | 80 | 8,350 | |
| MOBILIZATION & PREPARATORY WORK | | 7,880 | 1,180 | 450 | 760 | 90 | 100 | 10,470 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 3.50 WK | 18,200 | 2,730 | 1,050 | 1,760 | 220 | 240 | 24,190 | 6912.16 |
| QA/Safety Monitoring | | 18,200 | 2,730 | 1,050 | 1,760 | 220 | 240 | 24,190 | |
| QA/Safety Monitoring | | 18,200 | 2,730 | 1,050 | 1,760 | 220 | 240 | 24,190 | |
| QA/Safety Monitoring | | 18,200 | 2,730 | 1,050 | 1,760 | 220 | 240 | 24,190 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 18,200 | 2,730 | 1,050 | 1,760 | 220 | 240 | 24,190 | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 1.00 EA | 51,000 | 7,650 | 2,930 | 4,930 | 610 | 670 | 67,790 | 67792.31 |
| WELL DRILLING & CONSTRUCTION | | 51,000 | 7,650 | 2,930 | 4,930 | 610 | 670 | 67,790 | |
| WELL DRILLING & CONSTRUCTION | | 51,000 | 7,650 | 2,930 | 4,930 | 610 | 670 | 67,790 | |
| EXTRACTION AND INJECTION WELLS | | 51,000 | 7,650 | 2,930 | 4,930 | 610 | 670 | 67,790 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 02 GROUNDWATER EXTRACTION | | | | | | | | | |
| 06 06 02 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | | | |
| 06 06 02 04 01 Pumping System to A.S./UV Oxid | | | | | | | | | |
| 06 06 02 04 01 01 Pump, and Control valves | | 3,960 | 590 | 230 | 380 | 50 | 50 | 5,260 | |
| 06 06 02 04 01 02 Manhole for Valving | | 890 | 130 | 50 | 90 | 10 | 10 | 1,190 | |
| Pumping System to A.S./UV Oxid | | 4,850 | 730 | 280 | 470 | 60 | 60 | 6,450 | |
| GROUNDWATER PUMPING F/ REMED ACT | | 4,850 | 730 | 280 | 470 | 60 | 60 | 6,450 | |
| GROUNDWATER EXTRACTION | | 4,850 | 730 | 280 | 470 | 60 | 60 | 6,450 | |
| 06 06 03 GROUNDWATER INJECTION | | | | | | | | | |
| 06 06 03 01 INJECTION OF TREATED GROUNDWATER | | | | | | | | | |
| 06 06 03 01 01 Sump & Discharge Pump | | | | | | | | | |
| Sump & Discharge Pump | | 4,730 | 710 | 270 | 460 | 60 | 60 | 6,280 | |
| 06 06 03 01 02 Recharge Trenches | | | | | | | | | |
| Recharge Trenches | | 13,630 | 2,040 | 780 | 1,320 | 160 | 180 | 18,120 | |
| INJECTION OF TREATED GROUNDWATER | | 18,360 | 2,750 | 1,060 | 1,770 | 220 | 240 | 24,400 | |
| GROUNDWATER INJECTION | | 18,360 | 2,750 | 1,060 | 1,770 | 220 | 240 | 24,400 | |
| GROUNDWATER COLLECTION & CONTROL | | 74,210 | 11,130 | 4,270 | 7,170 | 890 | 980 | 98,640 | |
| 06 12 CHEMICAL TREATMENT | | | | | | | | | |
| 06 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | | | |
| 06 12 01 05 MOBILIZATION/SETUP/TESTING | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 12 01 05 01 Mobilization, Setup, & Testing | | | | | | | | | |
| 06 12 01 05 01 01 Purchase of UV Oxidation Unit | | 190,000 | 28,500 | 10,930 | 18,350 | 2,280 | 2,500 | 252,560 | |
| 06 12 01 05 01 02 Purchase, Reverse Osmosis Unit | | 146,000 | 21,900 | 8,400 | 14,100 | 1,750 | 1,920 | 194,070 | |
| 06 12 01 05 01 03 Mob, Setup & Testing | | 9,000 | 1,350 | 520 | 870 | 110 | 120 | 11,960 | |
| Mobilization, Setup, & Testing | | 345,000 | 51,750 | 19,840 | 33,330 | 4,140 | 4,540 | 458,600 | |
| MOBILIZATION/SETUP/TESTING | | 345,000 | 51,750 | 19,840 | 33,330 | 4,140 | 4,540 | 458,600 | |
| 06 12 01 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | | | |
| OZONE/HYDROGEN PEROXIDE/UV OXID. | | 345,000 | 51,750 | 19,840 | 33,330 | 4,140 | 4,540 | 458,600 | |
| CHEMICAL TREATMENT | | 345,000 | 51,750 | 19,840 | 33,330 | 4,140 | 4,540 | 458,600 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | | | |
| DeMob - Equipment/Facilities | | 6,000 | 900 | 350 | 580 | 70 | 80 | 7,980 | |
| TRANSPORTATION | | 6,000 | 900 | 350 | 580 | 70 | 80 | 7,980 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 6,000 | 900 | 350 | 580 | 70 | 80 | 7,980 | |
| DEMOBILIZATION | | 6,000 | 900 | 350 | 580 | 70 | 80 | 7,980 | |
| REMEDIAL ACTION | | 451,290 | 67,690 | 25,950 | 43,590 | 5,420 | 5,940 | 599,880 | |
| HANFORD: REMEDIATION | | 451,290 | 67,690 | 25,950 | 43,590 | 5,420 | 5,940 | 599,880 | |
| S & A | | | | | | | | 89,980 | |
| SUBTOTAL | | | | | | | | 689,860 | |
| CONTINGENCY | | | | | | | | 152,360 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 842,210 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT & PERSONNEL
06 01 01 01. TRANSPORTATION

06 01 01 01 01. Equipment Mob, Detailed List

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 1101 > Mob, Field Office Trailer | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| USR AA <01505 1102 > Mob, Crane, Hy, SP, 16-25 Ton, Rough Terrain, 4WD, 100-mi Rad | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 500.00 |
| USR AA <01505 3102 > Mob, Loader/Backhoe, 1-1.5 CY, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 200.00<br>200 | 0.00<br>0 | 0.00<br>0 | 200.00<br>200 | 200.00 |
| USR AA <01505 7111 > Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 7123 > Mob, End Dump trailer, 12 CY, W/CLT8000 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 8412 > Mob, Compactor, VIB, 32" Plate, 100-mi Radius | 2.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 75.00<br>150 | 0.00<br>0 | 0.00<br>0 | 75.00<br>150 | 75.00 |
| USR AA <01505 8431 > Mob, Drill Rig, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Equipment Mob, Detailed List | | | | | 0 | 0 | 1,600 | 0 | 0 | 1,600 | |
| TRANSPORTATION | | | | | 0 | 0 | 1,600 | 0 | 0 | 1,600 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | | | |
| 06 01 04 01 01. Office Trailers - setup | | | | | | | | | | | |
| 06 01 04 01 01 01. Office Trailers - setup | | | | | | | | | | | |
| Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Office Trailers - setup | 100.00 | HR | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Office Trailers - setup | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | | | |
| 06 01 04 02 01. Personnel Decon Facilities | | | | | | | | | | | |
| 06 01 04 02 01 01. Personnel Decon Facilities<br>Allow 80 mhrs for setup of Decontamination trailer. This is a self-contained unit which includes changing rooms and showers. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Personnel Decon Facilities | 80.00 | HR | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Personnel Decon Facilities | | | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| 06 01 04 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | | | |
| 06 01 04 02 02 01. Equip/Vehicle Decon Facilities<br>Allow 40 mhrs for setup of equipment decon facilities. An allowance for equipment and materials has been added. | | | | | | | | | | | |
| Equip/Vehicle Decon Facilities | | | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| Equip/Vehicle Decon Facilities | | | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| DECONTAMINATION FACILITIES | | | | | 0 | 3,000 | 300 | 130 | 0 | 3,430 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 91. QA/Safety Monitoring
06 02 91 01. QA/Safety Monitoring

06 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

06 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

WHC HPT: 40 Hrs @ $50/Hr = $2,000
COE Safety Rep: 40 Hrs @ $70/Hr = 2,800
COE S.A. for QA: 8 Hrs @ $50/Hr = 400
---
$5,200

Estimated duration of job is 4 weeks, with 1 week for Mob, Setup, & Demob,
so use 3.5 WK.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | 3.50 | WK | | 0 | 18,200 | 0 | 0 | 0 | 18,200 | 5200.00 |
| QA/Safety Monitoring | | | | 0 | 18,200 | 0 | 0 | 0 | 18,200 | |
| QA/Safety Monitoring | | | | 0 | 18,200 | 0 | 0 | 0 | 18,200 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

06 06. GROUNDWATER COLLECTION & CONTROL

This feature covers the groundwater collection, control, and recharge system, exclusive of the treatment system. Major equipment suppliers have provided costs for the following items:

well pump: Flint & Walling, United Pipe & Supply
air release valves: APCO Valves
strainer: Hayward Strainer Company Control Factors, Inc.
flow control valves: Griswold Controls
sump pump: PACO Pumps
flow meters: Signet

.

06 06 01. EXTRACTION AND INJECTION WELLS

06 06 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01 01. WELL DRILLING & CONSTRUCTION

For Extraction Scheme 1, one 60 VLF well will be required. A well point type well will probably be all that is needed, however, as the type and construction of the extractions wells has not been defined, it is assumed for this estimate that a monitoring type well may be required. This is a conservative assumption, as well points are much cheaper than monitoring wells. Assume 2 days to drill and 2 days to develope each well.

.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <02580 1001 > 6" Dia, Extraction well | | | 0.00 | 0.00 | 0.00 | 0.00 | 850.00 | 850.00 | |
| From a recent quote to drill monitoring wells in the 1100 Area, use $850/VLF. This cost includes: drilling, installation and development. All SubContr overhead markups, & all safety items are also covered in the unit cost. | 60.00 VLF N/A | 0.00 | 0 | 0 | 0 | 0 | 51,000 | 51,000 | 850.00 |
| WELL DRILLING & CONSTRUCTION | 1.00 EA | | 0 | 0 | 0 | 0 | 51,000 | 51,000 | 51000.00 |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 51,000 | 51,000 | |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 51,000 | 51,000 | |

06 06. GROUNDWATER COLLECTION & CONTROL

06 06 02. GROUNDWATER EXTRACTION
06 06 02 04. GROUNDWATER PUMPING F/ REMED ACT

06 06 02 04 01. Pumping System to A.S./UV Oxid

06 06 02 04 01 01. Pump, and Control valves
Estimate 2 days for two crews.

| | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B MIL AA <15061 1108 > | 3" D, Galv Steel Pipe | | | | | 0.38 | 10.83 | 0.14 | 4.04 | 0.00 | 15.01 | |
| | ASTM A-53, T&C, Sch 40 | 50.00 | LF | MPLUE | 6.50 | 19 | 541 | 7 | 202 | 0 | 751 | 15.01 |
| M USR AA <15083 1108 > | 3" Simplex Basket Strainer. | | | | | 1.25 | 35.19 | 0.47 | 416.11 | 0.00 | 451.77 | |
| | Hayward Co., flanged connections Model 72, cast iron. | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 416 | 0 | 452 | 451.77 |
| M USR AA <15101 1105 > | 1" Bronze, 125# Gate Valve | | | | | 1.05 | 29.64 | 0.39 | 16.17 | 0.00 | 46.20 | |
| | Threaded, Brazed or Soldered | 2.00 | EA | MPLUE | 2.38 | 2 | 59 | 1 | 32 | 0 | 92 | 46.20 |
| M USR AA <15110 1103 > | 3" Single Disc Type Check Valve | | | | | 1.25 | 35.19 | 0.47 | 134.75 | 0.00 | 170.41 | |
| | IB Wafer Type- 125# | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 135 | 0 | 170 | 170.41 |
| M USR AA <15121 1106 > | 3" Auto pressure-compensating | | | | | 1.25 | 35.19 | 0.47 | 603.68 | 0.00 | 639.34 | |
| | constant-flow control valve. Griswold Controls model #3332A. | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 604 | 0 | 639 | 639.34 |
| M USR AA <15146 2001 > | 100 GPH Submersible Pump | | | | | 20.00 | 568.20 | 86.32 | 970.20 | 0.00 | 1624.72 | |
| | 6" Disch for Wells, 50-150'Deep F&W #6P080A05, 5 HP | 1.00 | EA | MPLUS | 0.18 | 20 | 568 | 86 | 970 | 0 | 1,625 | 1624.72 |
| M USR AA <15122 1103 > | 1" air release valve, APCO #50 | | | | | 1.25 | 35.19 | 0.47 | 32.34 | 0.00 | 68.00 | |
| | | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 32 | 0 | 68 | 68.00 |
| B USR AA <15182 1008 > | Fbgs Cover for 3" D Pipe, 1" Thk | | | | | 0.10 | 2.00 | 0.05 | 1.62 | 0.00 | 3.67 | |
| | With Fire Retardant Jacket | 30.00 | LF | N/A | 0.00 | 3 | 60 | 2 | 49 | 0 | 110 | 3.67 |
| M USR AA <15061 2391 > | 3" x 1" Reducer, Eccentric | | | | | 0.63 | 17.60 | 0.23 | 7.01 | 0.00 | 24.84 | |
| | | 2.00 | EA | MPLUE | 4.00 | 1 | 35 | 0 | 14 | 0 | 50 | 24.84 |
| | Pump, and Control valves | | | | | 51 | 1,405 | 98 | 2,454 | 0 | 3,957 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 02 04 01 02. Manhole for Valving<br>Estimate 1 day. | | | | | | | | | |
| M USR AA <02560 5201 > 4' Dia x4' Deep, Precast Manhole | | | 6.34 | 153.09 | 23.17 | 215.60 | 500.00 | 891.86 | |
| 8" Tk, Add: $500 for excavation and backfilling. | 1.00 EA CODEJ | 0.51 | 6 | 153 | 23 | 216 | 500 | 892 | 891.86 |
| Manhole for Valving | | | 6 | 153 | 23 | 216 | 500 | 892 | |
| Pumping System to A.S./UV Oxid | | | 57 | 1,558 | 121 | 2,670 | 500 | 4,849 | |
| GROUNDWATER PUMPING F/ REMED ACT | | | 57 | 1,558 | 121 | 2,670 | 500 | 4,849 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 06 03. GROUNDWATER INJECTION | | | | | | | | | | | |
| 06 06 03 01. INJECTION OF TREATED GROUNDWATER | | | | | | | | | | | |
| 06 06 03 01 01. Sump & Discharge Pump | | | | | | | | | | | |
| Allow 3 days for two crews. | | | | | | | | | | | |
| M USR AA <02533 1012 > Submersible Sump Pump, 120 GPM, | | | | | 5.00 | 140.77 | 1.86 | 2263.80 | 0.00 | 2406.43 | |
| 1/2 HP, 20' Head, 2" Discharge | 1.00 | EA | MPLUE | 0.50 | 5 | 141 | 2 | 2,264 | 0 | 2,406 | 2406.43 |
| PACO #401283 | | | | | | | | | | | |
| M USR AA <15101 1105 > 1" Bronze, 125# Gate Valve | | | | | 1.05 | 29.64 | 0.39 | 16.17 | 0.00 | 46.20 | |
| Threaded, Brazed or Soldered | 2.00 | EA | MPLUE | 2.38 | 2 | 59 | 1 | 32 | 0 | 92 | 46.20 |
| M USR AA <15110 1104 > 4" Single Disc Type Check Valve | | | | | 1.25 | 35.19 | 0.47 | 188.65 | 0.00 | 224.31 | |
| IB Wafer Type- 125# | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 189 | 0 | 224 | 224.31 |
| M USR AA <15122 1103 > 1" air release valve, APCO #50 | | | | | 1.25 | 35.19 | 0.47 | 32.34 | 0.00 | 68.00 | |
| | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 32 | 0 | 68 | 68.00 |
| M USR AA <02560 5201 > 4' Dia x4' Deep, Precast Manhole | | | | | 6.50 | 156.92 | 23.75 | 215.60 | 500.00 | 896.27 | |
| 8" Tk, Add: $500 for excavation | 1.00 | EA | CODEJ | 0.50 | 7 | 157 | 24 | 216 | 500 | 896 | 896.27 |
| and backfilling. | | | | | | | | | | | |
| L MIL AA <15064 4111 > 3" PVC Drain & Sewer Pipe | | | | | 0.08 | 2.35 | 0.03 | 0.52 | 0.00 | 2.89 | |
| | 300.00 | LF | MPLUE | 30.00 | 25 | 704 | 9 | 155 | 0 | 868 | 2.89 |
| L MIL AA <15064 4112 > 4" PVC Drain & Sewer Pipe | | | | | 0.13 | 3.52 | 0.05 | 0.65 | 0.00 | 4.21 | |
| | 10.00 | LF | MPLUE | 20.00 | 1 | 35 | 0 | 6 | 0 | 42 | 4.21 |
| L MIL AA <15064 4121 > 3" 90 Degree Elbow, PVC D&S | | | | | 0.50 | 14.08 | 0.19 | 1.19 | 0.00 | 15.45 | |
| | 3.00 | EA | MPLUE | 5.00 | 2 | 42 | 1 | 4 | 0 | 46 | 15.45 |
| L MIL AA <15064 4151 > 3" Tee, PVC Drain & Sewer | | | | | 0.63 | 17.60 | 0.23 | 1.14 | 0.00 | 18.97 | |
| | 3.00 | EA | MPLUE | 4.00 | 2 | 53 | 1 | 3 | 0 | 57 | 18.97 |
| M USR AA <15061 2391 > 3" x 1" Reducer, Eccentric | | | | | 0.63 | 17.60 | 0.23 | 7.01 | 0.00 | 24.84 | |
| | 1.00 | EA | MPLUE | 4.00 | 1 | 18 | 0 | 7 | 0 | 25 | 24.84 |
| Sump & Discharge Pump | | | | | 46 | 1,279 | 39 | 2,908 | 500 | 4,726 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 03 01 02. Recharge Trenches<br>This item covers installation of a 200 LF, 10' W x 4' D recharge trench.<br>Allow 4 days for installation of trench. | | | | | | | | | |
| USR AA <02520 5013 > Exc, 10'x4' Undergrnd Trench Drn | | | 0.06 | 1.53 | 0.47 | 0.00 | 0.00 | 2.00 | |
| Excavation, Q: 382 CY, use: 400 LCY (also includes trenches for piping from well to cleaner unit, and to recharge trench). | 400.00 LCY CODEG | 25.00 | 24 | 613 | 187 | 0 | 0 | 801 | 2.00 |
| L MIL AA <02225 3104 > Haul waste, 12 CY Truck, 1-Mi, | | | 0.03 | 0.68 | 0.57 | 0.00 | 0.00 | 1.25 | |
| 20 MPH, 4.2 Cycles/Hr. Assume waste soil hauled to a close by area for dumping. | 400.00 LCY COEID | 40.00 | 10 | 272 | 226 | 0 | 0 | 498 | 1.25 |
| USR AA <02520 5013 > Backfill w/ Pipe Bedding & Cmpct | | | 0.22 | 5.23 | 0.79 | 26.95 | 0.00 | 32.97 | |
| Assume pipe bedding bought and delivered for $25/LCY. | 325.00 LCY CODEJ | 15.00 | 70 | 1,700 | 257 | 8,759 | 0 | 10,716 | 32.97 |
| USR AA <02511 2105 > 12" D, Perf PVC Pipe, Underdrain | | | 0.13 | 3.14 | 0.47 | 4.04 | 0.00 | 7.66 | |
| (31cm) Diameter | 200.00 LF CODEJ | 25.00 | 26 | 628 | 95 | 809 | 0 | 1,531 | 7.66 |
| B MIL AA <15064 4153 > 12" Tee, PVC Drain & Sewer | | | 0.63 | 17.60 | 0.23 | 21.56 | 0.00 | 39.39 | |
| | 1.00 EA MPLUE | 4.00 | 1 | 18 | 0 | 22 | 0 | 39 | 39.39 |
| B MIL AA <15064 4165 > 12"x3" Reducer, Drain & Sewer | | | 0.63 | 17.60 | 0.23 | 26.95 | 0.00 | 44.78 | |
| | 1.00 EA MPLUE | 4.00 | 1 | 18 | 0 | 27 | 0 | 45 | 44.78 |
| Recharge Trenches | | | 132 | 3,249 | 766 | 9,616 | 0 | 13,630 | |
| INJECTION OF TREATED GROUNDWATER | | | 178 | 4,528 | 804 | 12,524 | 500 | 18,356 | |

| 06 12. CHEMICAL TREATMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 12. CHEMICAL TREATMENT | | | | | | | | | |
| 06 12 01. OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | | | |
| 06 12 01 05. MOBILIZATION/SETUP/TESTING | | | | | | | | | |
| 06 12 01 05 01. Mobilization, Setup, & Testing<br>Assume 1 week needed for Mob-in, setup, and testing. | | | | | | | | | |
| 06 12 01 05 01 01. Purchase of UV Oxidation Unit<br>Budget capital purchase cost from ULTROX, Santa Ana, CA, Oct 12 92.<br>Oxidation Reactor: F-1300, Ozone Generator: 28 lb/day. | | | | | | | | | |
| Purchase of UV Oxidation Unit | | | 0 | 0 | 0 | 0 | 190,000 | 190,000 | |
| 06 12 01 05 01 02. Purchase, Reverse Osmosis Unit<br>Culligan brand. Cost from Frank Rouse, Water Quality Control, WA. | | | | | | | | | |
| Purchase, Reverse Osmosis Unit | | | 0 | 0 | 0 | 0 | 146,000 | 146,000 | |
| 06 12 01 05 01 03. Mob, Setup & Testing<br>For Mob to Hanford, assume $4,000 to cover trucking cost. For Setup and Testing, allow $4,000 for setup labor and $1,000 for equipment & materials. | | | | | | | | | |
| Mob, Setup & Testing | | | 0 | 4,000 | 750 | 250 | 4,000 | 9,000 | |
| Mobilization, Setup, & Testing | | | 0 | 4,000 | 750 | 250 | 340,000 | 345,000 | |
| MOBILIZATION/SETUP/TESTING | | | 0 | 4,000 | 750 | 250 | 340,000 | 345,000 | |

| 06 12. CHEMICAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 12 01 10. OPERATION (LONG TERM-OVER 3 YRS) O & M costs will be estimated separately. | | | | | | | | | | | |
| OPERATION (LONG TERM-OVER 3 YRS) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 21. DEMOBILIZATION | | | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | | | |
| 06 21 04 01 01. DeMob - Equipment/Facilities Assume Demob at 75% of Mob and Setup. | | | | | | | | | | | |
| DeMob - Equipment/Facilities | | | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| TRANSPORTATION | | | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| HANFORD: REMEDIATION | | | | | 235 | 33,786 | 9,826 | 15,674 | 392,000 | 451,285 | |

Thu 22 Oct 1992

U.S. Army Corps of Engineers
PROJECT GW100U: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 1, UV OXIDATION
** CREW BACKUP **

TIME 15:43:32

BACKUP PAGE 1

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CODEG | 1 B-eqoprmed + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 32 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 11.69 | 50.03 |
| | CODEJ | 2 B-laborer + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 67 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 2.00 | HR | 23.14 | 2.00 | 46.28 | | | 46.28 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 3.25 | 78.46 | 1.13 | 11.87 | 90.33 |
| | COEID | 1 B-trkdvrhv + 1 Dump Truck, 12 Cy | | | PROD = | 100% | | | CREW HOURS = | 20 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 1.00 | HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| MIL | T40XX010 E | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.00 | HR | 2.63 | | | 1.00 | 2.63 | 2.63 |
| MIL | T50GM016 E | TRK, HWY, 3 AXLE, 41000 GVW, 6X | 1.00 | HR | 19.97 | | | 1.00 | 19.97 | 19.97 |
| | TOTAL | | | | | 1.00 | 27.24 | 2.00 | 22.60 | 49.84 |
| | MPLUE | 1 B-plumber + Small Tools | | | PROD = | 100% | | | CREW HOURS = | 55 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | B-PLUMBER F | Plumbers | 0.50 | HR | 31.83 | 0.50 | 15.92 | | | 15.92 |
| MIL | XMIXX020 E | Small Tools | 0.67 | HR | 1.39 | | | 0.67 | 0.93 | 0.93 |
| | TOTAL | | | | | 2.50 | 70.38 | 0.67 | 0.93 | 71.32 |
| | MPLUS | 2 B-plumber + 1- 14 Ton Crane, Hydraulic | | | PROD = | 100% | | | CREW HOURS = | 11 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 0.50 | HR | 26.27 | 0.50 | 13.14 | | | 13.14 |
| MIL | B-PLUMBER F | Plumbers | 1.00 | HR | 31.83 | 1.00 | 31.83 | | | 31.83 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | C75GV001 E | CRANE,HYD,SELF,ROUGH TER,4WD,18 | 0.50 | HR | 28.66 | | | 0.50 | 14.33 | 14.33 |
| MIL | XMIXX020 E | Small Tools | 0.56 | HR | 1.39 | | | 0.56 | 0.78 | 0.78 |
| | TOTAL | | | | | 3.50 | 99.43 | 1.06 | 15.11 | 114.54 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | **** TOTAL **** | |
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 105 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 234 |
| MIL | B-PLUMBER | Plumbers | 31.33 | 0.0% | 0.0% | 0.00 | 0.00 | 31.33 | HR | 10/22/92 | 23.92 | 105 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 20 |

Thu 22 Oct 1992

U.S. Army Corps of Engineers
PROJECT GW100U: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 1, UV OXIDATION
** EQUIPMENT BACKUP **

TIME 15:43:32



| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | C75GV001 | CRANE,HYD,SELF,ROUGH TER,4WD,18T | 9.20 | 3.48 | 3.62 | 1.0 | 9.89 | 1.20 | 0.18 | 28.66 | HR | 6 |
| MIL | L50CS002 | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 3.42 | 1.16 | 1.86 | 0.6 | 4.04 | 0.53 | 0.08 | 11.69 | HR | 99 |
| MIL | T40XX010 | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.15 | 0.28 | | 0.0 | 1.11 | | | 2.63 | HR | 20 |
| MIL | T50GM016 | TRK, HWY, 3 AXLE, 41000 GVW, 6X4 | 4.17 | 1.08 | 7.46 | 2.0 | 3.69 | 1.29 | 0.19 | 19.97 | HR | 20 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 52 |

THIS PAGE INTENTIONALLY
LEFT BLANK

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 4
Table of Contents Levels : 5

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |
| | Print Unit Cost Row : | Y | | | | | | | |
| | Print Page Footer : | N | | | | | | | |
| | Show Cost Codes : | Y | | | | | | | |
| COLUMNS OPTIONS | Print Crew Id : | Y | | | | | | | |
| | Crew Output : | Y | | | | | | | |
| | Unit Cost : | Y | | | | | | | |
| UPB TITLES | No. of Levels to Print : | 0 | | | | | | | |
| | Bracket Titles With : | - : | | | | | | | |
| | Include titles Notes : | Y | | | | | | | |

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y
Link Listing : N

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Detail : | Y | | | | | | | | | |
| Project : | N | Y | Y | | N | N | N | N | N | Y |
| Contractor : | N | N | | N | N | N | N | N | N | N |
| Division : | N | N | N | Y | N | N | N | N | N | N |
| System : | N | N | N | Y | N | N | N | N | N | N |
| 2nd View : | N | | | | | | | | | |
| Crew : | Y | | | Y | N | N | N | N | N | N |
| Labor : | Y | | | | | | | | | |
| Equipment : | Y | | | | | | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| Project Information Record | | | | | | | |
| 06 REMEDIAL ACTION | | | | | | | |
| | S & A | P | 15.00 | | | | |
| | CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 02 GROUNDWATER EXTRACTION | | | | | | | |
| 06 06 02 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 02 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 02 04 01 01 Pump, and Control valves | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |
| 06 06 02 04 01 02 Manhole for Valving | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 03 GROUNDWATER INJECTION | | | | | | | |
| 06 06 03 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 03 01 01 Sump & Discharge Pump | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |
| 06 06 03 01 02 Recharge Trenches | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |
| 06 12 CHEMICAL TREATMENT | | | | | | | |
| 06 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | |
| 06 12 01 05 MOBILIZATION/SETUP/TESTING | | | | | | | |
| 06 12 01 05 01 Mobilization, Setup, & Testing | | | | | | | |
| 06 12 01 05 01 01 Purchase of UV Oxidation Unit | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 12 01 05 01 02 Purchase, Reverse Osmosis Unit | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 12 01 05 01 03 Mob, Setup & Testing | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 50.00 | | | | |
| 06 12 01 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | O | | | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

DOE/RL-92-67

# GROUNDWATER REMEDIATION
# 300 GPM AIR STRIPPING

9 3 1 2 6 2 1 9 0 3

THIS PAGE INTENTIONALLY
LEFT BLANK

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
GROUNDWATER REMEMDIATION
300 GPM, AIR STRIPPING

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/23/92
Est Construction Time: 50 Days

M C A C E S GOLD EDITION
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This estimate covers initial construction cost for Extraction Scheme 2, Groundwater Remediation, which includes: 300 gpm flow (3 wells), with Air Stripping and Reverse Osmosis cleaning, and recharge into ground in a 600 LF, 10' W x 4' D drain trench. The design life of this Scheme is 13 years. O&M costs are estimated separately.

1. Normal Contingency for this level of estimate is 20-30%.
2. Using 50% Contingency for Setup & Testing items, as they are undefined.
3. Using 30% Contingency based on uncertainty of the quantities given.

THIS PAGE INTENTIONALLY
LEFT BLANK

SUMMARY REPORTS — SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 6.....1
PROJECT INDIRECT SUMMARY - LEVEL 6.....5

DETAILED ESTIMATE — DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....5
06. GROUNDWATER COLLECTION & CONTROL
01. EXTRACTION AND INJECTION WELLS
01. WELL DRILLING & CONSTRUCTION
01. WELL DRILLING & CONSTRUCTION.....6
02. SUBSURFACE DRAINAGE
01. INJECTION OF TREATED GROUNDWATER
01. Sump & Discharge Pump.....7
02. Recharge Trenches.....8
07. PUMPING/COLLECTION
04. GROUNDWATER PUMPING F/ REMED ACT
01. Pumping System to A.S./UV Oxid.....9
13. PHYSICAL TREATMENT
07. AIR STRIPPING
05. MOBILIZATION/SETUP/TESTING
01. Mobilization/Setup/Testing.....11
10. OPERATION (LONG TERM-OVER 3 YRS).....12
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. DeMob - Equipment/Facilities.....12

BACKUP REPORTS — BACKUP PAGE

CREW BACKUP.....1

LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 2,120 | 320 | 490 | 2,930 | | 1 |
| TRANSPORTATION | | 2,120 | 320 | 490 | 2,930 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 2,120 | 320 | 490 | 2,930 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 3,780 | 570 | 2,180 | 6,530 | 65.29 | 2 |
| Office Trailers - setup | | 3,780 | 570 | 2,180 | 6,530 | | |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,180 | 6,530 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 3,030 | 450 | 1,740 | 5,220 | 65.29 | 2 |
| Personnel Decon Facilities | | 3,030 | 450 | 1,740 | 5,220 | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,530 | 230 | 880 | 2,630 | | 2 |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,530 | 230 | 880 | 2,630 | | |
| DECONTAMINATION FACILITIES | | 4,550 | 680 | 2,620 | 7,860 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 8,340 | 1,250 | 4,800 | 14,390 | | |
| MOBILIZATION & PREPARATORY WORK | | 10,460 | 1,570 | 5,280 | 17,320 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 6.50 WK | 44,890 | 6,730 | 10,320 | 61,940 | 9529.45 | 1 |
| QA/Safety Monitoring | | 44,890 | 6,730 | 10,320 | 61,940 | | |
| QA/Safety Monitoring | | 44,890 | 6,730 | 10,320 | 61,940 | | |
| QA/Safety Monitoring | | 44,890 | 6,730 | 10,320 | 61,940 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 44,890 | 6,730 | 10,320 | 61,940 | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 3.00 EA | 203,180 | 30,480 | 58,410 | 292,070 | 97356.19 | 1 |
| WELL DRILLING & CONSTRUCTION | | 203,180 | 30,480 | 58,410 | 292,070 | | |
| WELL DRILLING & CONSTRUCTION | | 203,180 | 30,480 | 58,410 | 292,070 | | |
| EXTRACTION AND INJECTION WELLS | | 203,180 | 30,480 | 58,410 | 292,070 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | |
| Sump & Discharge Pump | | 17,260 | 2,590 | 4,960 | 24,810 | | 1 |
| 06 06 02 01 02 Recharge Trenches | | | | | | | |
| Recharge Trenches | 600.00 LF | 60,640 | 9,100 | 20,920 | 90,660 | 151.10 | 3 |
| INJECTION OF TREATED GROUNDWATER | | 77,910 | 11,690 | 25,880 | 115,480 | | |
| SUBSURFACE DRAINAGE | | 77,910 | 11,690 | 25,880 | 115,480 | | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | 12,460 | 1,870 | 3,580 | 17,910 | | 1 |
| 06 06 07 04 01 02 Manhole for Valving | 3.00 EA | 4,290 | 640 | 1,230 | 6,170 | 2055.80 | 1 |
| Pumping System to A.S./UV Oxid | | 16,750 | 2,510 | 4,810 | 24,070 | | |
| GROUNDWATER PUMPING F/ REMED ACT | | 16,750 | 2,510 | 4,810 | 24,070 | | |
| PUMPING/COLLECTION | | 16,750 | 2,510 | 4,810 | 24,070 | | |
| GROUNDWATER COLLECTION & CONTROL | | 297,830 | 44,670 | 89,110 | 431,620 | | |
| 06 13 PHYSICAL TREATMENT | | | | | | | |
| 06 13 07 AIR STRIPPING | | | | | | | |
| 06 13 07 05 MOBILIZATION/SETUP/TESTING | | | | | | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 13 07 05 01 Mobilization/Setup/Testing | | | | | | | |
| 06 13 07 05 01 01 Mobilization & Setup | | 547,320 | 82,100 | 157,350 | 786,770 | | 1 |
| 06 13 07 05 01 02 Startup Testing | | 2,120 | 320 | 1,220 | 3,670 | | 3 |
| Mobilization/Setup/Testing | | 549,440 | 82,420 | 158,570 | 790,430 | | |
| MOBILIZATION/SETUP/TESTING | | 549,440 | 82,420 | 158,570 | 790,430 | | |
| 06 13 07 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| AIR STRIPPING | | 549,440 | 82,420 | 158,570 | 790,430 | | |
| PHYSICAL TREATMENT | | 549,440 | 82,420 | 158,570 | 790,430 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| DeMob - Equipment/Facilities | | 7,970 | 1,200 | 1,830 | 11,000 | | 1 |
| TRANSPORTATION | | 7,970 | 1,200 | 1,830 | 11,000 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 7,970 | 1,200 | 1,830 | 11,000 | | |
| DEMOBILIZATION | | 7,970 | 1,200 | 1,830 | 11,000 | | |
| REMEDIAL ACTION | | 910,590 | 136,590 | 265,130 | 1,312,300 | | |
| HANFORD: REMEDIATION | | 910,590 | 136,590 | 265,130 | 1,312,300 | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | | | |
| Equipment Mob, Detailed List | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,120 | |
| TRANSPORTATION | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,120 | |
| MOB OF EQUIPMENT & PERSONNEL | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,120 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | 37.85 |
| Office Trailers - setup | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | 37.85 |
| Personnel Decon Facilities | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | |
| DECONTAMINATION FACILITIES | | 3,430 | 510 | 200 | 330 | 40 | 50 | 4,550 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,280 | 940 | 360 | 610 | 70 | 80 | 8,340 | |
| MOBILIZATION & PREPARATORY WORK | | 7,880 | 1,180 | 450 | 760 | 80 | 100 | 10,460 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 6.50 WK | 33,800 | 5,070 | 1,940 | 3,270 | 360 | 440 | 44,890 | 6905.40 |
| QA/Safety Monitoring | | 33,800 | 5,070 | 1,940 | 3,270 | 360 | 440 | 44,890 | |
| QA/Safety Monitoring | | 33,800 | 5,070 | 1,940 | 3,270 | 360 | 440 | 44,890 | |
| QA/Safety Monitoring | | 33,800 | 5,070 | 1,940 | 3,270 | 360 | 440 | 44,890 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 33,800 | 5,070 | 1,940 | 3,270 | 360 | 440 | 44,890 | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 3.00 EA | 153,000 | 22,950 | 8,800 | 14,780 | 1,640 | 2,010 | 203,180 | 67726.05 |
| WELL DRILLING & CONSTRUCTION | | 153,000 | 22,950 | 8,800 | 14,780 | 1,640 | 2,010 | 203,180 | |
| WELL DRILLING & CONSTRUCTION | | 153,000 | 22,950 | 8,800 | 14,780 | 1,640 | 2,010 | 203,180 | |
| EXTRACTION AND INJECTION WELLS | | 153,000 | 22,950 | 8,800 | 14,780 | 1,640 | 2,010 | 203,180 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | | | |
| Sump & Discharge Pump | | 13,000 | 1,950 | 750 | 1,260 | 140 | 170 | 17,260 | |
| 06 06 02 01 02 Recharge Trenches | | | | | | | | | |
| Recharge Trenches | 600.00 LF | 45,670 | 6,850 | 2,630 | 4,410 | 490 | 600 | 60,640 | 101.07 |
| INJECTION OF TREATED GROUNDWATER | | 58,670 | 8,800 | 3,370 | 5,670 | 630 | 770 | 77,910 | |
| SUBSURFACE DRAINAGE | | 58,670 | 8,800 | 3,370 | 5,670 | 630 | 770 | 77,910 | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | 9,380 | 1,410 | 540 | 910 | 100 | 120 | 12,460 | |
| 06 06 07 04 01 02 Manhole for Valving | 3.00 EA | 3,230 | 480 | 190 | 310 | 30 | 40 | 4,290 | 1430.12 |
| Pumping System to A.S./UV Oxid | | 12,610 | 1,890 | 730 | 1,220 | 140 | 170 | 16,750 | |
| GROUNDWATER PUMPING F/ REMED ACT | | 12,610 | 1,890 | 730 | 1,220 | 140 | 170 | 16,750 | |
| PUMPING/COLLECTION | | 12,610 | 1,890 | 730 | 1,220 | 140 | 170 | 16,750 | |
| GROUNDWATER COLLECTION & CONTROL | | 224,280 | 33,640 | 12,900 | 21,670 | 2,400 | 2,950 | 297,830 | |
| 06 13 PHYSICAL TREATMENT | | | | | | | | | |
| 06 13 07 AIR STRIPPING | | | | | | | | | |
| 06 13 07 05 MOBILIZATION/SETUP/TESTING | | | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 13 07 05 01 Mobilization/Setup/Testing | | | | | | | | | |
| 06 13 07 05 01 01 Mobilization & Setup | | 412,150 | 61,820 | 23,700 | 39,810 | 4,420 | 5,420 | 547,320 | |
| 06 13 07 05 01 02 Startup Testing | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,120 | |
| Mobilization/Setup/Testing | | 413,750 | 62,060 | 23,790 | 39,970 | 4,430 | 5,440 | 549,440 | |
| MOBILIZATION/SETUP/TESTING | | 413,750 | 62,060 | 23,790 | 39,970 | 4,430 | 5,440 | 549,440 | |
| 06 13 07 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | | | |
| AIR STRIPPING | | 413,750 | 62,060 | 23,790 | 39,970 | 4,430 | 5,440 | 549,440 | |
| PHYSICAL TREATMENT | | 413,750 | 62,060 | 23,790 | 39,970 | 4,430 | 5,440 | 549,440 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | | | |
| DeMob - Equipment/Facilities | | 6,000 | 900 | 350 | 580 | 60 | 80 | 7,970 | |
| TRANSPORTATION | | 6,000 | 900 | 350 | 580 | 60 | 80 | 7,970 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 6,000 | 900 | 350 | 580 | 60 | 80 | 7,970 | |
| DEMOBILIZATION | | 6,000 | 900 | 350 | 580 | 60 | 80 | 7,970 | |
| REMEDIAL ACTION | | 685,700 | 102,860 | 39,430 | 66,240 | 7,350 | 9,020 | 910,590 | |
| HANFORD: REMEDIATION | | 685,700 | 102,860 | 39,430 | 66,240 | 7,350 | 9,020 | 910,590 | |
| S & A | | | | | | | | 136,590 | |
| SUBTOTAL | | | | | | | | 1,047,180 | |
| CONTINGENCY | | | | | | | | 265,130 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 1,312,300 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT & PERSONNEL
06 01 01 01. TRANSPORTATION

06 01 01 01 01. Equipment Mob, Detailed List

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 1101 > Mob, Field Office Trailer | | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 | EA | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |
| USR AA <01505 1102 > Mob, Crane, Hy, SP, 16-25 Ton, Rough Terrain, 4WD, 100-mi Rad | | | | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 500.00 | |
| | 1.00 | EA | 0.00 | 0 | 0 | 500 | 0 | 0 | 500 | 500.00 |
| USR AA <01505 3102 > Mob, Loader/Backhoe, 1-1.5 CY, 100-mi Radius | | | | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 200.00 | |
| | 1.00 | EA | 0.00 | 0 | 0 | 200 | 0 | 0 | 200 | 200.00 |
| USR AA <01505 7111 > Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | | | | 0.00 | 0.00 | 125.00 | 0.00 | 0.00 | 125.00 | |
| | 1.00 | EA | 0.00 | 0 | 0 | 125 | 0 | 0 | 125 | 125.00 |
| USR AA <01505 7123 > Mob, End Dump trailer, 12 CY, w/CLT8000 Trk, 100-mi Radius | | | | 0.00 | 0.00 | 125.00 | 0.00 | 0.00 | 125.00 | |
| | 1.00 | EA | 0.00 | 0 | 0 | 125 | 0 | 0 | 125 | 125.00 |
| USR AA <01505 8412 > Mob, Compactor, VIB, 32" Plate, 100-mi Radius | | | | 0.00 | 0.00 | 75.00 | 0.00 | 0.00 | 75.00 | |
| | 2.00 | EA | 0.00 | 0 | 0 | 150 | 0 | 0 | 150 | 75.00 |
| USR AA <01505 8431 > Mob, Drill Rig, 100-mi Radius | | | | 0.00 | 0.00 | 250.00 | 0.00 | 0.00 | 250.00 | |
| | 1.00 | EA | 0.00 | 0 | 0 | 250 | 0 | 0 | 250 | 250.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Equipment Mob, Detailed List | | | | | 0 | 0 | 1,600 | 0 | 0 | 1,600 | |
| TRANSPORTATION | | | | | 0 | 0 | 1,600 | 0 | 0 | 1,600 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | | | |
| 06 01 04 01 01. Office Trailers - setup | | | | | | | | | | | |
| 06 01 04 01 01 01. Office Trailers - setup<br>Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Office Trailers - setup | 100.00 | HR | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Office Trailers - setup | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01. Personnel Decon Facilities | | | | | | | | | |
| 06 01 04 02 01 01. Personnel Decon Facilities<br>Allow 80 mhrs for setup of Decontamination trailer. This is a self-contained unit which includes changing rooms and showers. An allowance for some equipment and material has been added. | | | | | | | | | |
| Personnel Decon Facilities | 80.00 HR | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Personnel Decon Facilities | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| 06 01 04 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 04 02 02 01. Equip/Vehicle Decon Facilities<br>Allow 40 mhrs for setup of equipment decon facilities. An allowance for equipment and materials has been added. | | | | | | | | | |
| Equip/Vehicle Decon Facilities | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| Equip/Vehicle Decon Facilities | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| DECONTAMINATION FACILITIES | | | 0 | 3,000 | 300 | 130 | 0 | 3,430 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 91. QA/Safety Monitoring
06 02 91 01. QA/Safety Monitoring

06 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

06 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

WHC HPT: 40 Hrs @ $50/Hr = $2,000
COE Safety Rep: 40 Hrs @ $70/Hr = 2,800
COE S.A. for QA: 8 Hrs @ $50/Hr 400
---
$5,200/wk

Estimated duration of job is 7 weeks, with 1 week for Mob, Setup, & Demob, so use 6.5 WK.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | 6.50 | WK | | 0 | 33,800 | 0 | 0 | 0 | 33,800 | 5200.00 |
| QA/Safety Monitoring | | | | 0 | 33,800 | 0 | 0 | 0 | 33,800 | |
| QA/Safety Monitoring | | | | 0 | 33,800 | 0 | 0 | 0 | 33,800 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

06 06. GROUNDWATER COLLECTION & CONTROL

This feature covers the groundwater collection, control, and recharge system, exclusive of the treatment system. Major equipment suppliers have provided costs for the following items:

well pump: Flint & Walling, United Pipe & Supply
air release valves: APCP Valves
strainer: Hayward Strainer Company Control Factors, Inc.
flow control valves: Griswold Controls
flow meters: Signet

.

06 06 01. EXTRACTION AND INJECTION WELLS

06 06 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01 01. WELL DRILLING & CONSTRUCTION

For Extraction Scheme 2, three 60 VLF wells will be required. A well point type well will probably be all that is needed, however, as the type and construction of the extractions wells has not been defined, it is assumed for this estimate that a monitoring type well may be required. This is a conservative assumption, as well points are much cheaper than monitoring wells. Assume 2 days to drill and 2 days to develope each well.

.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <02580 1001 > 6" Dia, Extraction well | | | 0.00 | 0.00 | 0.00 | 0.00 | 850.00 | 850.00 | |
| From a recent quote to drill monitoring wells in the 1100 Area, use $850/VLF. This cost includes: drilling, installation and development. All SubContr overhead markups, & all safety items are also covered in the unit cost. | 180.00 VLF N/A | 0.00 | 0 | 0 | 0 | 0 | 153,000 | 153,000 | 850.00 |
| WELL DRILLING & CONSTRUCTION | 3.00 EA | | 0 | 0 | 0 | 0 | 153,000 | 153,000 | 51000.00 |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 153,000 | 153,000 | |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 153,000 | 153,000 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 06 02. SUBSURFACE DRAINAGE | | | | | | | | | | | |
| 06 06 02 01. INJECTION OF TREATED GROUNDWATER | | | | | | | | | | | |
| 06 06 02 01 01. Sump & Discharge Pump<br>Allow 6 days for two crews. | | | | | | | | | | | |
| M USR AA <02533 1012 > Submersible Sump Pump, 350 GPM, 3 HP, 15' Head, 3" Discharge PACO #401406 | 1.00 | EA | MPLUE | 0.50 | 5.00<br>5 | 140.77<br>141 | 1.86<br>2 | 3880.80<br>3,881 | 0.00<br>0 | 4023.43<br>4,023 | 4023.43 |
| M USR AA <15101 1105 > 3" Bronze, 125# Gate Valve Threaded, Brazed or Soldered | 3.00 | EA | MPLUE | 2.38 | 1.05<br>3 | 29.64<br>89 | 0.39<br>1 | 80.85<br>243 | 0.00<br>0 | 110.88<br>333 | 110.88 |
| M USR AA <15110 1104 > 4" Single Disc Type Check Valve IB Wafer Type- 125# | 1.00 | EA | MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 188.65<br>189 | 0.00<br>0 | 224.31<br>224 | 224.31 |
| M USR AA <15122 1103 > 2" air release valve, APCO #50 | 1.00 | EA | MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 53.90<br>54 | 0.00<br>0 | 89.56<br>90 | 89.56 |
| M USR AA <02560 5201 > 4' Dia x6' Deep, Precast Manhole 8" Tk, Add: $750 for excavation and backfilling. | 1.00 | EA | CODEJ | 0.25 | 13.00<br>13 | 313.84<br>314 | 47.49<br>47 | 377.30<br>377 | 750.00<br>750 | 1488.63<br>1,489 | 1488.63 |
| B MIL AA <15064 4111 > 3" PVC Drain & Sewer Pipe | 1100.00 | LF | MPLUE | 30.00 | 0.08<br>92 | 2.35<br>2,581 | 0.03<br>34 | 0.54<br>593 | 0.00<br>0 | 2.92<br>3,208 | 2.92 |
| L MIL AA <15064 4112 > 4" PVC Drain & Sewer Pipe | 375.00 | LF | MPLUE | 20.00 | 0.13<br>47 | 3.52<br>1,320 | 0.05<br>17 | 0.65<br>243 | 0.00<br>0 | 4.21<br>1,580 | 4.21 |
| L MIL AA <15064 4121 > 3" 90 Degree Elbow, PVC D&S | 5.00 | EA | MPLUE | 5.00 | 0.50<br>3 | 14.08<br>70 | 0.19<br>1 | 1.19<br>6 | 0.00<br>0 | 15.45<br>77 | 15.45 |
| L MIL AA <15064 4151 > 3" Tee, PVC Drain & Sewer | 3.00 | EA | MPLUE | 4.00 | 0.63<br>2 | 17.60<br>53 | 0.23<br>1 | 1.14<br>3 | 0.00<br>0 | 18.97<br>57 | 18.97 |
| M USR AA <15061 2391 > 4" x 2" Reducer, Eccentric | 1.00 | EA | MPLUE | 4.00 | 0.63<br>1 | 17.60<br>18 | 0.23<br>0 | 7.01<br>7 | 0.00<br>0 | 24.84<br>25 | 24.84 |
| M USR AA <15101 1108 > 2" Bronze 125# Gate Valve Threaded | 1.00 | EA | MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 26.95<br>27 | 0.00<br>0 | 62.61<br>63 | 62.61 |
| B USR AA <15173 1108 > Flowmeter, Signet P51530-PO sensor, P58440 display. | 3.00 | EA | MPLUE | 1.00 | 2.50<br>8 | 70.39<br>211 | 0.93<br>3 | 539.00<br>1,617 | 0.00<br>0 | 610.32<br>1,831 | 610.32 |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Sump & Discharge Pump | | | 176 | 4,902 | 108 | 7,239 | 750 | 12,999 | |
| 06 06 02 01 02. Recharge Trenches<br>This item covers installation of a 600 LF, 10' W x 4' D recharge trench. Allow 12 days for installation of trench. | | | | | | | | | |
| USR AA <02520 5013 > Exc, 10'x4' Undergrnd Trench Drn | | | 0.06 | 1.53 | 0.47 | 0.00 | 0.00 | 2.00 | |
| Excavation, Q: 1,300 CY, use: 1,450 LCY (also includes trench for piping from well to cleaner unit, and to recharge trench). | 1450.00 LCY CODEG | 25.00 | 87 | 2,224 | 678 | 0 | 0 | 2,902 | 2.00 |
| L MIL AA <02225 3104 > Haul waste, 12 CY Truck, 1-Mi 20 MPH, 4.2 Cycles/Hr. | | | 0.03 | 0.68 | 0.57 | 0.00 | 0.00 | 1.25 | |
| Assume waste soil hauled to a close by area for dumping. | 1450.00 LCY COEID | 40.00 | 36 | 987 | 819 | 0 | 0 | 1,807 | 1.25 |
| USR AA <02520 5013 > Backfill w/ Pipe bedding & Cmpct | | | 0.22 | 5.23 | 0.79 | 26.95 | 0.00 | 32.97 | |
| Assume pipe bedding bought and delivered for $25/LCY. | 1100.00 LCY CODEJ | 15.00 | 238 | 5,754 | 871 | 29,645 | 0 | 36,269 | 32.97 |
| USR AA <02511 2105 > 12" D, Perf PVC Pipe, Underdrain | | | 0.13 | 3.14 | 0.47 | 4.04 | 0.00 | 7.66 | |
| | 600.00 LF CODEJ | 25.00 | 78 | 1,883 | 285 | 2,426 | 0 | 4,593 | 7.66 |
| B MIL AA <15064 4153 > 12" Tee, PVC Drain & Sewer | | | 0.63 | 17.60 | 0.23 | 21.56 | 0.00 | 39.39 | |
| | 1.00 EA MPLUE | 4.00 | 1 | 18 | 0 | 22 | 0 | 39 | 39.39 |
| B MIL AA <15064 4165 > 12"x4" Reducer, Drain & Sewer | | | 0.63 | 17.60 | 0.23 | 37.73 | 0.00 | 55.56 | |
| | 1.00 EA MPLUE | 4.00 | 1 | 18 | 0 | 38 | 0 | 56 | 55.56 |
| Recharge Trenches | 600.00 LF | | 441 | 10,883 | 2,654 | 32,130 | 0 | 45,667 | 76.11 |
| INJECTION OF TREATED GROUNDWATER | | | 617 | 15,785 | 2,762 | 39,369 | 750 | 58,665 | |

06 06. GROUNDWATER COLLECTION & CONTROL

06 06 07. PUMPING/COLLECTION
06 06 07 04. GROUNDWATER PUMPING F/ REMED ACT

06 06 07 04 01. Pumping System to A.S./UV Oxid

06 06 07 04 01 01. Pump, and Control valves
Estimate 5 days for two crews.

| | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B MIL AA <15061 1108 > | 3" D, Galv Steel Pipe | | | | | 0.38 | 10.83 | 0.14 | 4.04 | 0.00 | 15.01 | |
| | ASTM A-53, T&C, Sch 40 | 150.00 | LF | MPLUE | 6.50 | 58 | 1,624 | 21 | 606 | 0 | 2,252 | 15.01 |
| M USR AA <15083 1108 > | 4" Simplex Basket Strainer. | | | | | 1.25 | 35.19 | 0.47 | 652.19 | 0.00 | 687.85 | |
| | Hayward Co., flanged connections | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 652 | 0 | 688 | 687.85 |
| | Model 72, cast iron. | | | | | | | | | | | |
| M USR AA <15101 1105 > | 1" Bronze, 125# Gate Valve | | | | | 1.05 | 29.64 | 0.39 | 16.17 | 0.00 | 46.20 | |
| | Threaded, Brazed or Soldered | 3.00 | EA | MPLUE | 2.38 | 3 | 89 | 1 | 49 | 0 | 139 | 46.20 |
| M USR AA <15110 1103 > | 3" Single Disc Type Check Valve | | | | | 1.25 | 35.19 | 0.47 | 134.75 | 0.00 | 170.41 | |
| | IB Wafer Type- 125# | 3.00 | EA | MPLUE | 2.00 | 4 | 106 | 1 | 404 | 0 | 511 | 170.41 |
| M USR AA <15121 1106 > | 3" Auto pressure-compensating | | | | | 1.25 | 35.19 | 0.47 | 603.68 | 0.00 | 639.34 | |
| | constant-flow control valve. | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 604 | 0 | 639 | 639.34 |
| | Griswold Controls model #3332A. | | | | | | | | | | | |
| M USR AA <15146 2001 > | 100 GPH Submersible Pump | | | | | 20.00 | 568.20 | 86.32 | 970.20 | 0.00 | 1624.72 | |
| | 6" Disch for Wells, 50-150'Deep | 3.00 | EA | MPLUS | 0.18 | 60 | 1,705 | 259 | 2,911 | 0 | 4,874 | 1624.72 |
| | F&W #6P080A05, 5 HP | | | | | | | | | | | |
| M USR AA <15122 1103 > | 1" air release valve, APCO #50 | | | | | 1.25 | 35.19 | 0.47 | 32.34 | 0.00 | 68.00 | |
| | | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 32 | 0 | 68 | 68.00 |
| B USR AA <15182 1008 > | Fbgs Cover for 4" D Pipe, 2" Thk | | | | | 0.10 | 2.00 | 0.05 | 2.43 | 0.00 | 4.48 | |
| | With Fire Retardant Jacket | 30.00 | LF | N/A | 0.00 | 3 | 60 | 2 | 73 | 0 | 134 | 4.48 |
| M USR AA <15061 2391 > | 3" x 1" Reducer, Eccentric | | | | | 0.63 | 17.60 | 0.23 | 7.01 | 0.00 | 24.84 | |
| | | 3.00 | EA | MPLUE | 4.00 | 2 | 53 | 1 | 21 | 0 | 75 | 24.84 |
| | Pump, and Control valves | | | | | 133 | 3,742 | 287 | 5,352 | 0 | 9,380 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 06 07 04 01 02. Manhole for Valving<br>Estimate 2 days. | | | | | | | | | | | |
| M USR AA <02560 5201 > 4' Dia x4' Deep, Precast Manhole<br>8" Tk, Add: $500 for excavation<br>and backfilling. | 3.00 | EA | CODEJ | 0.25 | 13.00<br>39 | 313.84<br>942 | 47.49<br>142 | 215.60<br>647 | 500.00<br>1,500 | 1076.93<br>3,231 | 1076.93 |
| Manhole for Valving | 3.00 | EA | | | 39 | 942 | 142 | 647 | 1,500 | 3,231 | 1076.93 |
| Pumping System to A.S./UV Oxid | | | | | 172 | 4,683 | 429 | 5,999 | 1,500 | 12,611 | |
| GROUNDWATER PUMPING F/ REMED ACT | | | | | 172 | 4,683 | 429 | 5,999 | 1,500 | 12,611 | |

| 06 13. PHYSICAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 13. PHYSICAL TREATMENT | | | | | | | | | | | |
| 06 13 07. AIR STRIPPING | | | | | | | | | | | |
| 06 13 07 05. MOBILIZATION/SETUP/TESTING | | | | | | | | | | | |
| 06 13 07 05 01. Mobilization/Setup/Testing | | | | | | | | | | | |
| Assume 1 week needed for Mob-in, setup, and testing. | | | | | | | | | | | |
| 06 13 07 05 01 01. Mobilization & Setup | | | | | | | | | | | |
| USR AA <01944 8001 > Mob of Air stripper/Rev Osmosis | | | | | 0.00 | 0.00 | 375000.00 | 0.00 | 0.00 | 375000.00 | |
| Assume at 10% of unit cost. | 0.10 | PCT | | 0.00 | 0 | 0 | 37,500 | 0 | 0 | 37,500 | 375000.00 |
| USR AA <01944 8001 > 300 gpm, Air Stripper Unit | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 24000.00 | 24000.00 | |
| 4' D x 25' Tower, 15' packing, 3 HP blower. Cost from Frank Lenzo, Hydro Group, Bridgeport, NJ, 1-800-524-2725. | 1.00 | LS | | 0.00 | 0 | 0 | 0 | 0 | 24,000 | 24,000 | 24000.00 |
| USR AA <01944 8001 > Concrete pad, assume 10'x10' | | | | | 0.00 | 0.00 | 0.00 | 646.80 | 0.00 | 646.80 | |
| Cost for 2.0 CY @ $300/CY | 1.00 | LS | | 0.00 | 0 | 0 | 0 | 647 | 0 | 647 | 646.80 |
| USR AA <01944 8001 > 300 gpm, Reverse Osmosis Unit | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 350000.00 | 350000.00 | |
| Culligan brand. Cost from Frank Rouse, Water Quality Control, WA | 1.00 | LS | | 0.00 | 0 | 0 | 0 | 0 | 350,000 | 350,000 | 350000.00 |
| Mobilization & Setup | | | | | 0 | 0 | 37,500 | 647 | 374,000 | 412,147 | |
| 06 13 07 05 01 02. Startup Testing | | | | | | | | | | | |
| Assume a week of testing needed. | | | | | | | | | | | |
| Startup Testing | | | | | 0 | 1,250 | 250 | 100 | 0 | 1,600 | |
| Mobilization/Setup/Testing | | | | | 0 | 1,250 | 37,750 | 747 | 374,000 | 413,747 | |
| MOBILIZATION/SETUP/TESTING | | | | | 0 | 1,250 | 37,750 | 747 | 374,000 | 413,747 | |

| 06 13. PHYSICAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 13 07 10. OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | | | | | |
| O & M costs will be estimated separately. | | | | | | | | | | | |
| OPERATION (LONG TERM-OVER 3 YRS) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 21. DEMOBILIZATION | | | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | | | |
| 06 21 04 01 01. DeMob - Equipment/Facilities | | | | | | | | | | | |
| Assume Demob at 75% of Mob and Setup. | | | | | | | | | | | |
| DeMob - Equipment/Facilities | | | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| TRANSPORTATION | | | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| HANFORD: REMEDIATION | | | | | 789 | 61,018 | 49,091 | 46,344 | 529,250 | 685,703 | |

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT GW300A: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, AIR STRIPPING
** CREW BACKUP **

TIME 07:47:02

BACKUP PAGE 1

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CODEG | 1 B-eqoprmed + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 116 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 11.69 | 50.03 |
| | CODEJ | 2 B-laborer + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 227 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 2.00 | HR | 23.14 | 2.00 | 46.28 | | | 46.28 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 3.25 | 78.46 | 1.13 | 11.87 | 90.33 |
| | COEID | 1 B-trkdvrhv + 1 Dump Truck, 12 Cy | | | PROD = | 100% | | | CREW HOURS = | 73 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 1.00 | HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| MIL | T40XX010 E | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.00 | HR | 2.63 | | | 1.00 | 2.63 | 2.63 |
| MIL | T50GM016 E | TRK, HWY, 3 AXLE, 41000 GVW, 6X | 1.00 | HR | 19.97 | | | 1.00 | 19.97 | 19.97 |
| | TOTAL | | | | | 1.00 | 27.24 | 2.00 | 22.60 | 49.84 |
| | MPLUE | 1 B-plumber + Small Tools | | | PROD = | 100% | | | CREW HOURS = | 188 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | B-PLUMBER F | Plumbers | 0.50 | HR | 31.83 | 0.50 | 15.92 | | | 15.92 |
| MIL | XMIXX020 E | Small Tools | 0.67 | HR | 1.39 | | | 0.67 | 0.93 | 0.93 |
| | TOTAL | | | | | 2.50 | 70.38 | 0.67 | 0.93 | 71.32 |
| | MPLUS | 2 B-plumber + 1- 14 Ton Crane, Hydraulic | | | PROD = | 100% | | | CREW HOURS = | 34 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 0.50 | HR | 26.27 | 0.50 | 13.14 | | | 13.14 |
| MIL | B-PLUMBER F | Plumbers | 1.00 | HR | 31.83 | 1.00 | 31.83 | | | 31.83 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | C75GV001 E | CRANE,HYD,SELF,ROUGH TER,4WD,18 | 0.50 | HR | 28.66 | | | 0.50 | 14.33 | 14.33 |
| MIL | XMIXX020 E | Small Tools | 0.56 | HR | 1.39 | | | 0.56 | 0.78 | 0.78 |
| | TOTAL | | | | | 3.50 | 99.43 | 1.06 | 15.11 | 114.54 |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 360 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 790 |
| MIL | B-PLUMBER | Plumbers | 31.33 | 0.0% | 0.0% | 0.00 | 0.00 | 31.33 | HR | 10/22/92 | 23.92 | 350 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 73 |

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT GW300A: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, AIR STRIPPING
** EQUIPMENT BACKUP **

TIME 07:47:02

BACKUP PAGE 3

| SRC EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|
| MIL C75GV001 | CRANE,HYD,SELF,ROUGH TER,4WD,18T | 9.20 | 3.48 | 3.62 | 1.0 | 9.89 | 1.20 | 0.18 | 28.66 HR | 17 |
| MIL L50CS002 | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 3.42 | 1.16 | 1.86 | 0.6 | 4.04 | 0.53 | 0.08 | 11.69 HR | 343 |
| MIL T40XX010 | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.15 | 0.28 | | 0.0 | 1.11 | | | 2.63 HR | 73 |
| MIL T50GM016 | TRK, HWY, 3 AXLE, 41000 GVW, 6X4 | 4.17 | 1.08 | 7.46 | 2.0 | 3.69 | 1.29 | 0.19 | 19.97 HR | 73 |
| MIL XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 HR | 174 |

THIS PAGE INTENTIONALLY
LEFT BLANK

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 4
Table of Contents Levels : 5

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | | | | | | | | |
| Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |
| Print Unit Cost Row : | Y | | | | | | | |
| Print Page Footer : | N | | | | | | | |
| Show Cost Codes : | Y | | | | | | | |
| COLUMNS OPTIONS | | | | | | | | |
| Print Crew Id : | Y | | | | | | | |
| Crew Output : | Y | | | | | | | |
| Unit Cost : | Y | | | | | | | |
| UPB TITLES | | | | | | | | |
| No. of Levels to Print : | 0 | | | | | | | |
| Bracket Titles With : | - : | | | | | | | |
| Include titles Notes : | Y | | | | | | | |

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y
Link Listing : N

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) |
|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 1 2 3 4 5 6 |
| Detail : | Y | | | |
| Project : | N | Y | Y | N N N N N Y |
| Contractor : | N | N | | N N N N N N N |
| Division : | N | N | N | Y N N N N N N |
| System : | N | N | N | Y N N N N N N |
| 2nd View : | N | | | |
| Crew : | Y | | | Y N N N N N N |
| Labor : | Y | | | |
| Equipment : | Y | | | |

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTION | | | | | | |
| S & A | P | 15.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 02 01 02 Recharge Trenches | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 07 04 01 02 Manhole for Valving | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 13 PHYSICAL TREATMENT | | | | | | | |
| 06 13 07 AIR STRIPPING | | | | | | | |
| 06 13 07 05 MOBILIZATION/SETUP/TESTING | | | | | | | |
| 06 13 07 05 01 Mobilization/Setup/Testing | | | | | | | |
| 06 13 07 05 01 01 Mobilization & Setup | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 13 07 05 01 02 Startup Testing | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 50.00 | | | | |
| 06 13 07 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | O | | | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

THIS PAGE INTENTIONALLY
LEFT BLANK

DOE/RL-92-67

# GROUNDWATER REMEDIATION
# 300 GPM UV OXIDATION

9 3 1 2 3 2 1 9 3 9

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This estimate covers initial construction cost for Extraction Scheme 2, Groundwater Remediation, which includes: 300 gpm flow (3 wells), with UV Oxidation and Reverse Osmosis cleaning, and recharge into ground in a 600 LF, 10' W x 4' D drain trench. The design life of this Scheme is 13 years. O&M costs are separately estimated.

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
GROUNDWATER REMEMDIATION
300 GPM, UV OXIDATION

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/23/92
Est Construction Time: 50 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

THIS PAGE INTENTIONALLY
LEFT BLANK

1. Normal Contingency for this level of estimate is 20-30%.
2. Using 50% Contingency for Setup & Testing items, as they are undefined.
3. Using 30% Contingency based on uncertainty of the quantities given.

LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

SUMMARY REPORTS SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 6.....1
PROJECT INDIRECT SUMMARY - LEVEL 6.....5

DETAILED ESTIMATE DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & FACILITIES
01. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....5
06. GROUNDWATER COLLECTION & CONTROL
01. EXTRACTION AND INJECTION WELLS
01. WELL DRILLING & CONSTRUCTION
01. WELL DRILLING & CONSTRUCTION.....6
02. SUBSURFACE DRAINAGE
01. INJECTION OF TREATED GROUNDWATER
01. Sump & Discharge Pump.....7
02. Recharge Trenches.....8
07. PUMPING/COLLECTION
04. GROUNDWATER PUMPING F/ REMED ACT
01. Pumping System to A.S./UV Oxid.....9
12. CHEMICAL TREATMENT
01. OZONE/HYDROGEN PEROXIDE/UV OXID.
05. MOBILIZATION/SETUP/TESTING
01. Purchase, Mob, Setup, & Testing.....11
10. OPERATION (LONG TERM-OVER 3 YRS).....12
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & FACILITIES
01. TRANSPORTATION
01. DeMob - Equipment/Facilities.....12

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,530 | 230 | 880 | 2,630 | | |
| DECONTAMINATION FACILITIES | | 4,550 | 680 | 2,620 | 7,850 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 8,330 | 1,250 | 4,790 | 14,380 | | |
| MOBILIZATION & PREPARATORY WORK | | 10,460 | 1,570 | 5,280 | 17,310 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 6.50 WK | 44,850 | 6,730 | 10,320 | 61,900 | 9522.75 | 1 |
| QA/Safety Monitoring | | 44,850 | 6,730 | 10,320 | 61,900 | | |
| QA/Safety Monitoring | | 44,850 | 6,730 | 10,320 | 61,900 | | |
| QA/Safety Monitoring | | 44,850 | 6,730 | 10,320 | 61,900 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 44,850 | 6,730 | 10,320 | 61,900 | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 3.00 EA | 203,040 | 30,460 | 58,370 | 291,860 | 97287.72 | 1 |
| WELL DRILLING & CONSTRUCTION | | 203,040 | 30,460 | 58,370 | 291,860 | | |
| WELL DRILLING & CONSTRUCTION | | 203,040 | 30,460 | 58,370 | 291,860 | | |
| EXTRACTION AND INJECTION WELLS | | 203,040 | 30,460 | 58,370 | 291,860 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 2,120 | 320 | 490 | 2,930 | | 1 |
| TRANSPORTATION | | 2,120 | 320 | 490 | 2,930 | | |
| MOB OF EQUIPMENT & FACILITIES | | 2,120 | 320 | 490 | 2,930 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 3,780 | 570 | 2,170 | 6,520 | 65.24 | 2 |
| Office Trailers - setup | | 3,780 | 570 | 2,170 | 6,520 | | |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,170 | 6,520 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 3,030 | 450 | 1,740 | 5,220 | 65.24 | 2 |
| Personnel Decon Facilities | | 3,030 | 450 | 1,740 | 5,220 | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,530 | 230 | 880 | 2,630 | | 2 |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 12 01 05 01 Purchase, Mob, Setup, & Testing | | | | | | | |
| 06 12 01 05 01 01 Purchase of UV Oxidation Unit | | 398,110 | 59,720 | 114,460 | 572,280 | | 1 |
| 06 12 01 05 01 02 Purchase of Reverse Osmosis Unit | | 464,460 | 69,670 | 106,830 | 640,950 | | 1 |
| 06 12 01 05 01 03 Mob, Setup & Testing | | 17,910 | 2,690 | 10,300 | 30,900 | | 3 |
| Purchase, Mob, Setup, & Testing | | 880,480 | 132,070 | 231,580 | 1,244,140 | | |
| MOBILIZATION/SETUP/TESTING | | 880,480 | 132,070 | 231,580 | 1,244,140 | | |
| 06 12 01 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| OZONE/HYDROGEN PEROXIDE/UV OXID. | | 880,480 | 132,070 | 231,580 | 1,244,140 | | |
| CHEMICAL TREATMENT | | 880,480 | 132,070 | 231,580 | 1,244,140 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| DeMob - Equipment/Facilities | | 7,960 | 1,190 | 1,830 | 10,990 | | 1 |
| TRANSPORTATION | | 7,960 | 1,190 | 1,830 | 10,990 | | |
| DEMOB OF EQUIPMENT & FACILITIES | | 7,960 | 1,190 | 1,830 | 10,990 | | |
| DEMOBILIZATION | | 7,960 | 1,190 | 1,830 | 10,990 | | |
| REMEDIAL ACTION | | 1,241,380 | 186,210 | 338,060 | 1,765,640 | | |
| HANFORD: REMEDIATION | | 1,241,380 | 186,210 | 338,060 | 1,765,640 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | |
| Sump & Discharge Pump | | 17,250 | 2,590 | 4,960 | 24,800 | | 1 |
| 06 06 02 01 02 Recharge Trenches | | | | | | | |
| Recharge Trenches | 600.00 LF | 60,600 | 9,090 | 20,910 | 90,600 | 151.00 | 3 |
| INJECTION OF TREATED GROUNDWATER | | 77,850 | 11,680 | 25,870 | 115,390 | | |
| SUBSURFACE DRAINAGE | | 77,850 | 11,680 | 25,870 | 115,390 | | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | 12,450 | 1,870 | 3,580 | 17,890 | | 1 |
| 06 06 07 04 01 02 Manhole for Valving | 3.00 EA | 4,290 | 640 | 1,230 | 6,160 | 2054.35 | 1 |
| Pumping System to A.S./UV Oxid | | 16,730 | 2,510 | 4,810 | 24,060 | | |
| GROUNDWATER PUMPING F/ REMED ACT | | 16,730 | 2,510 | 4,810 | 24,060 | | |
| PUMPING/COLLECTION | | 16,730 | 2,510 | 4,810 | 24,060 | | |
| GROUNDWATER COLLECTION & CONTROL | | 297,620 | 44,640 | 89,050 | 431,310 | | |
| 06 12 CHEMICAL TREATMENT | | | | | | | |
| 06 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | |
| 06 12 01 05 MOBILIZATION/SETUP/TESTING | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | |
| DECONTAMINATION FACILITIES | | 3,430 | 510 | 200 | 330 | 30 | 50 | 4,550 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,280 | 940 | 360 | 610 | 60 | 80 | 8,330 | |
| MOBILIZATION & PREPARATORY WORK | | 7,880 | 1,180 | 450 | 760 | 80 | 100 | 10,460 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 6.50 WK | 33,800 | 5,070 | 1,940 | 3,270 | 330 | 440 | 44,850 | 6900.54 |
| QA/Safety Monitoring | | 33,800 | 5,070 | 1,940 | 3,270 | 330 | 440 | 44,850 | |
| QA/Safety Monitoring | | 33,800 | 5,070 | 1,940 | 3,270 | 330 | 440 | 44,850 | |
| QA/Safety Monitoring | | 33,800 | 5,070 | 1,940 | 3,270 | 330 | 440 | 44,850 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 33,800 | 5,070 | 1,940 | 3,270 | 330 | 440 | 44,850 | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 3.00 EA | 153,000 | 22,950 | 8,800 | 14,780 | 1,500 | 2,010 | 203,040 | 67678.42 |
| WELL DRILLING & CONSTRUCTION | | 153,000 | 22,950 | 8,800 | 14,780 | 1,500 | 2,010 | 203,040 | |
| WELL DRILLING & CONSTRUCTION | | 153,000 | 22,950 | 8,800 | 14,780 | 1,500 | 2,010 | 203,040 | |
| EXTRACTION AND INJECTION WELLS | | 153,000 | 22,950 | 8,800 | 14,780 | 1,500 | 2,010 | 203,040 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | | | |
| Equipment Mob, Detailed List | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,120 | |
| TRANSPORTATION | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,120 | |
| MOB OF EQUIPMENT & FACILITIES | | 1,600 | 240 | 90 | 150 | 20 | 20 | 2,120 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | 37.82 |
| Office Trailers - setup | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 30 | 40 | 3,780 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | 37.82 |
| Personnel Decon Facilities | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,030 | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,530 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 12 01 05 01 Purchase, Mob, Setup, & Testing | | | | | | | | | |
| 06 12 01 05 01 01 Purchase of UV Oxidation Unit | | 300,000 | 45,000 | 17,250 | 28,980 | 2,940 | 3,940 | 398,110 | |
| 06 12 01 05 01 02 Purchase of Reverse Osmosis Unit | | 350,000 | 52,500 | 20,130 | 33,810 | 3,430 | 4,600 | 464,460 | |
| 06 12 01 05 01 03 Mob, Setup & Testing | | 13,500 | 2,030 | 780 | 1,300 | 130 | 180 | 17,910 | |
| Purchase, Mob, Setup, & Testing | | 663,500 | 99,530 | 38,150 | 64,090 | 6,490 | 8,720 | 880,480 | |
| MOBILIZATION/SETUP/TESTING | | 663,500 | 99,530 | 38,150 | 64,090 | 6,490 | 8,720 | 880,480 | |
| 06 12 01 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | | | |
| OZONE/HYDROGEN PEROXIDE/UV OXID. | | 663,500 | 99,530 | 38,150 | 64,090 | 6,490 | 8,720 | 880,480 | |
| CHEMICAL TREATMENT | | 663,500 | 99,530 | 38,150 | 64,090 | 6,490 | 8,720 | 880,480 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | | | |
| DeMob - Equipment/Facilities | | 6,000 | 900 | 350 | 580 | 60 | 80 | 7,960 | |
| TRANSPORTATION | | 6,000 | 900 | 350 | 580 | 60 | 80 | 7,960 | |
| DEMOB OF EQUIPMENT & FACILITIES | | 6,000 | 900 | 350 | 580 | 60 | 80 | 7,960 | |
| DEMOBILIZATION | | 6,000 | 900 | 350 | 580 | 60 | 80 | 7,960 | |
| REMEDIAL ACTION | | 935,460 | 140,320 | 53,790 | 90,370 | 9,160 | 12,290 | 1,241,380 | |
| HANFORD: REMEDIATION | | 935,460 | 140,320 | 53,790 | 90,370 | 9,160 | 12,290 | 1,241,380 | |
| S & A | | | | | | | | 186,210 | |
| SUBTOTAL | | | | | | | | 1,427,580 | |
| CONTINGENCY | | | | | | | | 338,060 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 1,765,640 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | | | |
| Sump & Discharge Pump | | 13,000 | 1,950 | 750 | 1,260 | 130 | 170 | 17,250 | |
| 06 06 02 01 02 Recharge Trenches | | | | | | | | | |
| Recharge Trenches | 600.00 LF | 45,670 | 6,850 | 2,630 | 4,410 | 450 | 600 | 60,600 | 101.00 |
| INJECTION OF TREATED GROUNDWATER | | 58,670 | 8,800 | 3,370 | 5,670 | 570 | 770 | 77,850 | |
| SUBSURFACE DRAINAGE | | 58,670 | 8,800 | 3,370 | 5,670 | 570 | 770 | 77,850 | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | 9,380 | 1,410 | 540 | 910 | 90 | 120 | 12,450 | |
| 06 06 07 04 01 02 Manhole for Valving | 3.00 EA | 3,230 | 480 | 190 | 310 | 30 | 40 | 4,290 | 1429.12 |
| Pumping System to A.S./UV Oxid | | 12,610 | 1,890 | 730 | 1,220 | 120 | 170 | 16,730 | |
| GROUNDWATER PUMPING F/ REMED ACT | | 12,610 | 1,890 | 730 | 1,220 | 120 | 170 | 16,730 | |
| PUMPING/COLLECTION | | 12,610 | 1,890 | 730 | 1,220 | 120 | 170 | 16,730 | |
| GROUNDWATER COLLECTION & CONTROL | | 224,280 | 33,640 | 12,900 | 21,670 | 2,200 | 2,950 | 297,620 | |
| 06 12 CHEMICAL TREATMENT | | | | | | | | | |
| 06 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | | | |
| 06 12 01 05 MOBILIZATION/SETUP/TESTING | | | | | | | | | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Equipment Mob, Detailed List | | | | | 0 | 0 | 1,600 | 0 | 0 | 1,600 | |
| TRANSPORTATION | | | | | 0 | 0 | 1,600 | 0 | 0 | 1,600 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT & FACILITIES
06 01 01 01. TRANSPORTATION

06 01 01 01 01. Equipment Mob, Detailed List

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 1101 > Mob, Field Office Trailer | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| USR AA <01505 1102 > Mob, Crane, Hy, SP, 16-25 Ton, Rough Terrain, 4WD, 100-mi Rad | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 500.00 |
| USR AA <01505 3102 > Mob, Loader/Backhoe, 1-1.5 CY, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 200.00<br>200 | 0.00<br>0 | 0.00<br>0 | 200.00<br>200 | 200.00 |
| USR AA <01505 7111 > Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 7123 > Mob, End Dump trailer, 12 CY, w/CLT8000 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 8412 > Mob, Compactor, VIB, 32" Plate, 100-mi Radius | 2.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 75.00<br>150 | 0.00<br>0 | 0.00<br>0 | 75.00<br>150 | 75.00 |
| USR AA <01505 8431 > Mob, Drill Rig, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01. Personnel Decon Facilities | | | | | | | | | |
| 06 01 04 02 01 01. Personnel Decon Facilities<br>Allow 80 mhrs for setup of Decontamination trailer. This is a self-contained unit which includes changing rooms and showers. An allowance for some equipment and material has been added. | | | | | | | | | |
| Personnel Decon Facilities | 80.00 HR | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Personnel Decon Facilities | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| 06 01 04 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 04 02 02 01. Equip/Vehicle Decon Facilities<br>Allow 40 mhrs for setup of equipment decon facilities. An allowance for equipment and materials has been added. | | | | | | | | | |
| Equip/Vehicle Decon Facilities | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| Equip/Vehicle Decon Facilities | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| DECONTAMINATION FACILITIES | | | 0 | 3,000 | 300 | 130 | 0 | 3,430 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | | | |
| 06 01 04 01 01. Office Trailers - setup | | | | | | | | | | | |
| 06 01 04 01 01 01. Office Trailers - setup | | | | | | | | | | | |
| Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Office Trailers - setup | 100.00 | HR | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Office Trailers - setup | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

06 06. GROUNDWATER COLLECTION & CONTROL
06 06 01. EXTRACTION AND INJECTION WELLS
06 06 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01 01. WELL DRILLING & CONSTRUCTION
For Extraction Scheme 2, three 60 VLF wells will be required. A well point type well will probably be all that is needed, however, as the type and construction of the extractions wells has not been defined, it is assumed for this estimate that a monitoring type well may be required. This is a conservative assumption, as well points are much cheaper than monitoring wells. Assume 2 days to drill and 2 days to develope each well.
.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <02580 1001 > 6" Dia, Extraction well | | | 0.00 | 0.00 | 0.00 | 0.00 | 850.00 | 850.00 | |
| From a recent quote to drill monitoring wells in the 1100 Area, use $850/VLF. This cost includes: drilling, installation and development. All SubContr overhead markups, & all safety items are also covered in the unit cost. | 180.00 VLF N/A | 0.00 | 0 | 0 | 0 | 0 | 153,000 | 153,000 | 850.00 |
| WELL DRILLING & CONSTRUCTION | 3.00 EA | | 0 | 0 | 0 | 0 | 153,000 | 153,000 | 51000.00 |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 153,000 | 153,000 | |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 153,000 | 153,000 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 91. QA/Safety Monitoring
06 02 91 01. QA/Safety Monitoring

06 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

06 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

WHC HPT: 40 Hrs @ $50/Hr = $2,000
COE Safety Rep: 40 Hrs @ $70/Hr = 2,800
COE S.A. for QA: 8 Hrs @ $50/Hr = 400
---
$5,200/wk

Estimated duration of job is 7 weeks, with 1 week for Mob, Setup, & Demob,
so use 6.5 WK.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | 6.50 | WK | | | 0 | 33,800 | 0 | 0 | 0 | 33,800 | 5200.00 |
| QA/Safety Monitoring | | | | | 0 | 33,800 | 0 | 0 | 0 | 33,800 | |
| QA/Safety Monitoring | | | | | 0 | 33,800 | 0 | 0 | 0 | 33,800 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sump & Discharge Pump | | | 176 | 4,902 | 108 | 7,239 | 750 | 12,999 | |
| 06 06 02 01 | 02. Recharge Trenches<br>This item covers installation of a 600 LF, 10' W x 4' D recharge trench.<br>Allow 12 days for installation of trench. | | | | | | | | | |
| USR AA <02520 5013 > | Exc, 10'x4' Undergrnd Trench Drn | | | 0.06 | 1.53 | 0.47 | 0.00 | 0.00 | 2.00 | |
| | Excavation, Q: 1,300 CY, use: 1,450 LCY (also includes trench for piping from well to cleaner unit, and to recharge trench). | 1450.00 LCY CODEG | 25.00 | 87 | 2,224 | 678 | 0 | 0 | 2,902 | 2.00 |
| L MIL AA <02225 3104 > | Haul waste, 12 CY Truck, 1-Mi, | | | 0.03 | 0.68 | 0.57 | 0.00 | 0.00 | 1.25 | |
| | 20 MPH, 4.2 Cycles/Hr<br>Assume waste soil hauled to a close by area for dumping. | 1450.00 LCY COEID | 40.00 | 36 | 987 | 819 | 0 | 0 | 1,807 | 1.25 |
| USR AA <02520 5013 > | Backfill w/ Pipe bedding & Cmpct | | | 0.22 | 5.23 | 0.79 | 26.95 | 0.00 | 32.97 | |
| | Assume pipe bedding bought and delivered for $25/LCY. | 1100.00 LCY CODEJ | 15.00 | 238 | 5,754 | 871 | 29,645 | 0 | 36,269 | 32.97 |
| USR AA <02511 2105 > | 12" D, Perf PVC Pipe, Underdrain | | | 0.13 | 3.14 | 0.47 | 4.04 | 0.00 | 7.66 | |
| | | 600.00 LF CODEJ | 25.00 | 78 | 1,883 | 285 | 2,426 | 0 | 4,593 | 7.66 |
| B MIL AA <15064 4153 > | 12" Tee, PVC Drain & Sewer | | | 0.63 | 17.60 | 0.23 | 21.56 | 0.00 | 39.39 | |
| | | 1.00 EA MPLUE | 4.00 | 1 | 18 | 0 | 22 | 0 | 39 | 39.39 |
| B MIL AA <15064 4165 > | 12"x4" Reducer, Drain & Sewer | | | 0.63 | 17.60 | 0.23 | 37.73 | 0.00 | 55.56 | |
| | | 1.00 EA MPLUE | 4.00 | 1 | 18 | 0 | 38 | 0 | 56 | 55.56 |
| | Recharge Trenches | 600.00 LF | | 441 | 10,883 | 2,654 | 32,130 | 0 | 45,667 | 76.11 |
| | INJECTION OF TREATED GROUNDWATER | | | 617 | 15,785 | 2,762 | 39,369 | 750 | 58,665 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 02. SUBSURFACE DRAINAGE | | | | | | | | | |
| 06 06 02 01. INJECTION OF TREATED GROUNDWATER | | | | | | | | | |
| 06 06 02 01 01. Sump & Discharge Pump<br>Allow 6 days for two crews. | | | | | | | | | |
| M USR AA <02533 1012 > Submersible Sump Pump, 350 GPM, 3 HP, 15' Head, 3" Discharge PACO #401406 | 1.00 EA MPLUE | 0.50 | 5.00<br>5 | 140.77<br>141 | 1.86<br>2 | 3880.80<br>3,881 | 0.00<br>0 | 4023.43<br>4,023 | 4023.43 |
| M USR AA <15101 1105 > 3" Bronze, 125# Gate Valve Threaded, Brazed or Soldered | 3.00 EA MPLUE | 2.38 | 1.05<br>3 | 29.64<br>89 | 0.39<br>1 | 80.85<br>243 | 0.00<br>0 | 110.88<br>333 | 110.88 |
| M USR AA <15110 1104 > 4" Single Disc Type Check Valve IB Wafer Type- 125# | 1.00 EA MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 188.65<br>189 | 0.00<br>0 | 224.31<br>224 | 224.31 |
| M USR AA <15122 1103 > 2" air release valve, APCO #50 | 1.00 EA MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 53.90<br>54 | 0.00<br>0 | 89.56<br>90 | 89.56 |
| M USR AA <02560 5201 > 4' Dia x6' Deep, Precast Manhole 8" Tk, Add: $750 for excavation and backfilling. | 1.00 EA CODEJ | 0.25 | 13.00<br>13 | 313.84<br>314 | 47.49<br>47 | 377.30<br>377 | 750.00<br>750 | 1488.63<br>1,489 | 1488.63 |
| B MIL AA <15064 4111 > 3" PVC Drain & Sewer Pipe | 1100.00 LF MPLUE | 30.00 | 0.08<br>92 | 2.35<br>2,581 | 0.03<br>34 | 0.54<br>593 | 0.00<br>0 | 2.92<br>3,208 | 2.92 |
| L MIL AA <15064 4112 > 4" PVC Drain & Sewer Pipe | 375.00 LF MPLUE | 20.00 | 0.13<br>47 | 3.52<br>1,320 | 0.05<br>17 | 0.65<br>243 | 0.00<br>0 | 4.21<br>1,580 | 4.21 |
| L MIL AA <15064 4121 > 3" 90 Degree Elbow, PVC D&S | 5.00 EA MPLUE | 5.00 | 0.50<br>3 | 14.08<br>70 | 0.19<br>1 | 1.19<br>6 | 0.00<br>0 | 15.45<br>77 | 15.45 |
| L MIL AA <15064 4151 > 3" Tee, PVC Drain & Sewer | 3.00 EA MPLUE | 4.00 | 0.63<br>2 | 17.60<br>53 | 0.23<br>1 | 1.14<br>3 | 0.00<br>0 | 18.97<br>57 | 18.97 |
| M USR AA <15061 2391 > 4" x 2" Reducer, Eccentric | 1.00 EA MPLUE | 4.00 | 0.63<br>1 | 17.60<br>18 | 0.23<br>0 | 7.01<br>7 | 0.00<br>0 | 24.84<br>25 | 24.84 |
| M USR AA <15101 1108 > 2" Bronze 125# Gate Valve Threaded | 1.00 EA MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 26.95<br>27 | 0.00<br>0 | 62.61<br>63 | 62.61 |
| B USR AA <15173 1108 > Flowmeter, Signet P51530-PO sensor, P58440 display. | 3.00 EA MPLUE | 1.00 | 2.50<br>8 | 70.39<br>211 | 0.93<br>3 | 539.00<br>1,617 | 0.00<br>0 | 610.32<br>1,831 | 610.32 |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 07 04 01 02. Manhole for Valving<br>Estimate 2 days. | | | | | | | | | |
| M USR AA <02560 5201 > 4' Dia x4' Deep, Precast Manhole | | | 13.00 | 313.84 | 47.49 | 215.60 | 500.00 | 1076.93 | |
| 8" Tk, Add: $500 for excavation and backfilling. | 3.00 EA CODEJ | 0.25 | 39 | 942 | 142 | 647 | 1,500 | 3,231 | 1076.93 |
| Manhole for Valving | 3.00 EA | | 39 | 942 | 142 | 647 | 1,500 | 3,231 | 1076.93 |
| Pumping System to A.S./UV Oxid | | | 172 | 4,683 | 429 | 5,999 | 1,500 | 12,611 | |
| GROUNDWATER PUMPING F/ REMED ACT | | | 172 | 4,683 | 429 | 5,999 | 1,500 | 12,611 | |

06 06. GROUNDWATER COLLECTION & CONTROL

06 06 07. PUMPING/COLLECTION
06 06 07 04. GROUNDWATER PUMPING F/ REMED ACT

06 06 07 04 01. Pumping System to A.S./UV Oxid

06 06 07 04 01 01. Pump, and Control valves
Estimate 5 days for two crews.

| | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B MIL AA <15061 1108 > | 3" D, Galv Steel Pipe | | | | | 0.38 | 10.83 | 0.14 | 4.04 | 0.00 | 15.01 | |
| | ASTM A-53, T&C, Sch 40 | 150.00 | LF | MPLUE | 6.50 | 58 | 1,624 | 21 | 606 | 0 | 2,252 | 15.01 |
| M USR AA <15083 1108 > | 4" Simplex Basket Strainer. | | | | | 1.25 | 35.19 | 0.47 | 652.19 | 0.00 | 687.85 | |
| | Hayward Co., flanged connections Model 72, cast iron. | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 652 | 0 | 688 | 687.85 |
| M USR AA <15101 1105 > | 1" Bronze, 125# Gate Valve | | | | | 1.05 | 29.64 | 0.39 | 16.17 | 0.00 | 46.20 | |
| | Threaded, Brazed or Soldered | 3.00 | EA | MPLUE | 2.38 | 3 | 89 | 1 | 49 | 0 | 139 | 46.20 |
| M USR AA <15110 1103 > | 3" Single Disc Type Check Valve | | | | | 1.25 | 35.19 | 0.47 | 134.75 | 0.00 | 170.41 | |
| | IB Wafer Type- 125# | 3.00 | EA | MPLUE | 2.00 | 4 | 106 | 1 | 404 | 0 | 511 | 170.41 |
| M USR AA <15121 1106 > | 3" Auto pressure-compensating | | | | | 1.25 | 35.19 | 0.47 | 603.68 | 0.00 | 639.34 | |
| | constant-flow control valve. Griswold Controls model #3332A. | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 604 | 0 | 639 | 639.34 |
| M USR AA <15146 2001 > | 100 GPH Submersible Pump | | | | | 20.00 | 568.20 | 86.32 | 970.20 | 0.00 | 1624.72 | |
| | 6" Disch for Wells, 50-150'Deep F&W #6P080A05, 5 HP | 3.00 | EA | MPLUS | 0.18 | 60 | 1,705 | 259 | 2,911 | 0 | 4,874 | 1624.72 |
| M USR AA <15122 1103 > | 1" air release valve, APCO #50 | | | | | 1.25 | 35.19 | 0.47 | 32.34 | 0.00 | 68.00 | |
| | | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 32 | 0 | 68 | 68.00 |
| B USR AA <15182 1008 > | Fbgs Cover for 4" D Pipe, 2" Thk | | | | | 0.10 | 2.00 | 0.05 | 2.43 | 0.00 | 4.48 | |
| | With Fire Retardant Jacket | 30.00 | LF | N/A | 0.00 | 3 | 60 | 2 | 73 | 0 | 134 | 4.48 |
| M USR AA <15061 2391 > | 3" x 1" Reducer, Eccentric | | | | | 0.63 | 17.60 | 0.23 | 7.01 | 0.00 | 24.84 | |
| | | 3.00 | EA | MPLUE | 4.00 | 2 | 53 | 1 | 21 | 0 | 75 | 24.84 |
| | Pump, and Control valves | | | | | 133 | 3,742 | 287 | 5,352 | 0 | 9,380 | |

| 06 12. CHEMICAL TREATMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 12 01 10. OPERATION (LONG TERM-OVER 3 YRS) O & M costs will be estimated separately. | | | | | | | | | |
| OPERATION (LONG TERM-OVER 3 YRS) | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 21. DEMOBILIZATION | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & FACILITIES | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01. DeMob - Equipment/Facilities Assume Demob at 75% of Mob and Setup. | | | | | | | | | |
| DeMob - Equipment/Facilities | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| TRANSPORTATION | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| HANFORD: REMEDIATION | | | 789 | 64,768 | 12,341 | 46,097 | 812,250 | 935,456 | |

| 06 12. CHEMICAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 12. CHEMICAL TREATMENT | | | | | | | | | | | |
| 06 12 01. OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | | | | | |
| 06 12 01 05. MOBILIZATION/SETUP/TESTING | | | | | | | | | | | |
| 06 12 01 05 01. Purchase, Mob, Setup, & Testing<br>Assume 1 week needed for Mob-in, setup, and testing. | | | | | | | | | | | |
| 06 12 01 05 01 01. Purchase of UV Oxidation Unit<br>Budget capital purchase cost from ULTROX, Santa Ana, CA, Oct 12 92.<br>Oxidation Reactor: C-5000, Ozone Generator: 100 lb/day. | | | | | | | | | | | |
| Purchase of UV Oxidation Unit | | | | | 0 | 0 | 0 | 0 | 300,000 | 300,000 | |
| 06 12 01 05 01 02. Purchase of Reverse Osmosis Unit<br>Budget purchse cost for the Reverse Osmosis Unit from Frank Rouse, of<br>Water Quality Control, Yakima, WA: $350,000 for 300 gpm unit.<br>. | | | | | | | | | | | |
| Purchase of Reverse Osmosis Unit | | | | | 0 | 0 | 0 | 0 | 350,000 | 350,000 | |
| 06 12 01 05 01 03. Mob, Setup & Testing<br>For Mob to Hanford, assume $7,000 to cover trucking cost. For Setup and<br>Testing, allow $5,000 for setup labor and $1,500 for equipment & materials. | | | | | | | | | | | |
| Mob, Setup & Testing | | | | | 0 | 5,000 | 1,000 | 500 | 7,000 | 13,500 | |
| Purchase, Mob, Setup, & Testing | | | | | 0 | 5,000 | 1,000 | 500 | 657,000 | 663,500 | |
| MOBILIZATION/SETUP/TESTING | | | | | 0 | 5,000 | 1,000 | 500 | 657,000 | 663,500 | |

9 3 1 2 3 5 2 1 9 5 6



| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 360 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 790 |
| MIL | B-PLUMBER | Plumbers | 31.33 | 0.0% | 0.0% | 0.00 | 0.00 | 31.33 | HR | 10/22/92 | 23.92 | 350 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 73 |

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CODEG | 1 B-eqoprmed + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 116 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 11.69 | 50.03 |
| | CODEJ | 2 B-laborer + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 227 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 2.00 | HR | 23.14 | 2.00 | 46.28 | | | 46.28 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 3.25 | 78.46 | 1.13 | 11.87 | 90.33 |
| | COEID | 1 B-trkdvrhv + 1 Dump Truck, 12 Cy | | | PROD = | 100% | | | CREW HOURS = | 73 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 1.00 | HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| MIL | T40XX010 E | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.00 | HR | 2.63 | | | 1.00 | 2.63 | 2.63 |
| MIL | T50GM016 E | TRK, HWY, 3 AXLE, 41000 GVW, 6X | 1.00 | HR | 19.97 | | | 1.00 | 19.97 | 19.97 |
| | TOTAL | | | | | 1.00 | 27.24 | 2.00 | 22.60 | 49.84 |
| | MPLUE | 1 B-plumber + Small Tools | | | PROD = | 100% | | | CREW HOURS = | 188 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | B-PLUMBER F | Plumbers | 0.50 | HR | 31.83 | 0.50 | 15.92 | | | 15.92 |
| MIL | XMIXX020 E | Small Tools | 0.67 | HR | 1.39 | | | 0.67 | 0.93 | 0.93 |
| | TOTAL | | | | | 2.50 | 70.38 | 0.67 | 0.93 | 71.32 |
| | MPLUS | 2 B-plumber + 1- 14 Ton Crane, Hydraulic | | | PROD = | 100% | | | CREW HOURS = | 34 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 0.50 | HR | 26.27 | 0.50 | 13.14 | | | 13.14 |
| MIL | B-PLUMBER F | Plumbers | 1.00 | HR | 31.83 | 1.00 | 31.83 | | | 31.83 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | C75GV001 E | CRANE,HYD,SELF,ROUGH TER,4WD,18 | 0.50 | HR | 28.66 | | | 0.50 | 14.33 | 14.33 |
| MIL | XMIXX020 E | Small Tools | 0.56 | HR | 1.39 | | | 0.56 | 0.78 | 0.78 |
| | TOTAL | | | | | 3.50 | 99.43 | 1.06 | 15.11 | 114.54 |

THIS PAGE INTENTIONALLY
LEFT BLANK

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT GW300U: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 2, UV OXIDATION
** EQUIPMENT BACKUP **

TIME 08:10:01



| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | C75GV001 | CRANE,HYD,SELF,ROUGH TER,4WD,18T | 9.20 | 3.48 | 3.62 | 1.0 | 9.89 | 1.20 | 0.18 | 28.66 | HR | 17 |
| MIL | L50CS002 | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 3.42 | 1.16 | 1.86 | 0.6 | 4.04 | 0.53 | 0.08 | 11.69 | HR | 343 |
| MIL | T40XX010 | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.15 | 0.28 | | 0.0 | 1.11 | | | 2.63 | HR | 73 |
| MIL | T50GM016 | TRK, HWY, 3 AXLE, 41000 GVW, 6X4 | 4.17 | 1.08 | 7.46 | 2.0 | 3.69 | 1.29 | 0.19 | 19.97 | HR | 73 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 174 |

FEDERAL RECORDS CENTER

** PROJECT SETTINGS **

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 4
Table of Contents Levels : 5

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |

Print Unit Cost Row : Y
Print Page Footer : N
Show Cost Codes : Y

COLUMNS OPTIONS
Print Crew Id : Y
Crew Output : Y
Unit Cost : Y

UPB TITLES
No. of Levels to Print : 0
Bracket Titles With : - :
Include titles Notes : Y

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| Project Information Record | | | | | | | |
| 06 REMEDIAL ACTION | | | | | | | |
| | S & A | P | 15.00 | | | | |
| | CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

| STANDARD COLUMN WIDTHS | | SUMMARY FEATURES | |
|---|---|---|---|
| Quantity Columns : | 10 | Round Totals Column : | T-Tens |
| Total cost Columns : | 12 | Contingency Notes : | Yes |
| Unit Cost Columns : | 12 | Show Project Totals : | Yes |

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y  Measurement Units : Original
Link Listing : N

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Detail : | Y | | | | | | | | | |
| Project : | N | Y | Y | | N | N | N | N | N | Y |
| Contractor : | N | N | | N | N | N | N | N | N | N |
| Division : | N | N | N | Y | N | N | N | N | N | N |
| System : | N | N | N | Y | N | N | N | N | N | N |
| 2nd View : | N | | | | | | | | | |
| Crew : | Y | | | Y | N | N | N | N | N | N |
| Labor : | Y | | | | | | | | | |
| Equipment : | Y | | | | | | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & FACILITIES | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 06 02 01 02 Recharge Trenches | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 30.00 | | | | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 06 07 04 01 02 Manhole for Valving | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 12 CHEMICAL TREATMENT | | | | | | | |
| 06 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | |
| 06 12 01 05 MOBILIZATION/SETUP/TESTING | | | | | | | |
| 06 12 01 05 01 Purchase, Mob, Setup, & Testing | | | | | | | |
| 06 12 01 05 01 01 Purchase of UV Oxidation Unit | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 12 01 05 01 02 Purchase of Reverse Osmosis Unit | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 12 01 05 01 03 Mob, Setup & Testing | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 12 01 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | O | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

# GROUNDWATER REMEDIATION
# 1,000 GPM AIR STRIPPING

THIS PAGE INTENTIONALLY
LEFT BLANK

9 3 1 2 3 2 1 9 7 5

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This estimate covers initial construction cost for Extraction Scheme 3, Groundwater Remediation, which includes: 1,000 gpm flow (10 wells), with Air Stripping & Reverse Osmosis cleaning, and recharge into ground in a 1,000 LF, 20' W x 4' D drain trench. The design life of this Scheme is 9 years. O & M costs are estimated separately.

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
GROUNDWATER REMEMDIATION
1,000 GPM, AIR STRIPPING

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/23/92
Est Construction Time: 180 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

THIS PAGE INTENTIONALLY
LEFT BLANK

1. Normal Contingency for this level of estimate is 20-30%.
2. Using 50% Contingency for Setup & Testing items, as they are undefined.
3. Using 30% Contingency based on uncertainty of the quantities given.

---

LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

SUMMARY REPORTS SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 6.....1
PROJECT INDIRECT SUMMARY - LEVEL 6.....5

DETAILED ESTIMATE DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....5
06. GROUNDWATER COLLECTION & CONTROL
01. EXTRACTION AND INJECTION WELLS
01. WELL DRILLING & CONSTRUCTION
01. WELL DRILLING & CONSTRUCTION.....6
02. SUBSURFACE DRAINAGE
01. INJECTION OF TREATED GROUNDWATER
01. Sump & Discharge Pump.....7
02. Recharge Trenches.....8
07. PUMPING/COLLECTION
04. GROUNDWATER PUMPING F/ REMED ACT
01. Pumping System to A.S./UV Oxid.....10
13. PHYSICAL TREATMENT
07. AIR STRIPPING
05. MOBILIZATION/SETUP/TESTING
01. Mobilization/Setup/Testing.....12
10. OPERATION (LONG TERM-OVER 3 YRS).....13
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. DeMob - Equipment/Facilities.....13

BACKUP REPORTS BACKUP PAGE

CREW BACKUP.....1

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,520 | 230 | 880 | 2,630 | | |
| DECONTAMINATION FACILITIES | | 4,550 | 680 | 2,610 | 7,840 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 8,330 | 1,250 | 4,790 | 14,360 | | |
| MOBILIZATION & PREPARATORY WORK | | 10,610 | 1,590 | 5,310 | 17,520 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 15.00 WK | 103,400 | 15,510 | 23,780 | 142,700 | 9513.10 | 1 |
| QA/Safety Monitoring | | 103,400 | 15,510 | 23,780 | 142,700 | | |
| QA/Safety Monitoring | | 103,400 | 15,510 | 23,780 | 142,700 | | |
| QA/Safety Monitoring | | 103,400 | 15,510 | 23,780 | 142,700 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 103,400 | 15,510 | 23,780 | 142,700 | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 10.00 EA | 676,100 | 101,410 | 194,380 | 971,890 | 97189.13 | 1 |
| WELL DRILLING & CONSTRUCTION | | 676,100 | 101,410 | 194,380 | 971,890 | | |
| WELL DRILLING & CONSTRUCTION | | 676,100 | 101,410 | 194,380 | 971,890 | | |
| EXTRACTION AND INJECTION WELLS | | 676,100 | 101,410 | 194,380 | 971,890 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 2,290 | 340 | 530 | 3,160 | | 1 |
| TRANSPORTATION | | 2,290 | 340 | 530 | 3,160 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 2,290 | 340 | 530 | 3,160 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 3,780 | 570 | 2,170 | 6,520 | 65.17 | 2 |
| Office Trailers - setup | | 3,780 | 570 | 2,170 | 6,520 | | |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,170 | 6,520 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 3,020 | 450 | 1,740 | 5,210 | 65.17 | 2 |
| Personnel Decon Facilities | | 3,020 | 450 | 1,740 | 5,210 | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,520 | 230 | 880 | 2,630 | | 2 |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 13 07 05 01 Mobilization/Setup/Testing | | | | | | | |
| 06 13 07 05 01 01 Mobilization & Setup | | 1,502,860 | 225,430 | 345,660 | 2,073,940 | | 1 |
| 06 13 07 05 01 02 Startup Testing | | 2,120 | 320 | 1,220 | 3,660 | | 2 |
| Mobilization/Setup/Testing | | 1,504,980 | 225,750 | 346,880 | 2,077,600 | | |
| MOBILIZATION/SETUP/TESTING | | 1,504,980 | 225,750 | 346,880 | 2,077,600 | | |
| 06 13 07 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| AIR STRIPPING | | 1,504,980 | 225,750 | 346,880 | 2,077,600 | | |
| PHYSICAL TREATMENT | | 1,504,980 | 225,750 | 346,880 | 2,077,600 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| DeMob - Equipment/Facilities | | 7,950 | 1,190 | 1,830 | 10,980 | | 1 |
| TRANSPORTATION | | 7,950 | 1,190 | 1,830 | 10,980 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 7,950 | 1,190 | 1,830 | 10,980 | | |
| DEMOBILIZATION | | 7,950 | 1,190 | 1,830 | 10,980 | | |
| REMEDIAL ACTION | | 2,607,690 | 391,150 | 672,230 | 3,671,070 | | |
| HANFORD: REMEDIATION | | 2,607,690 | 391,150 | 672,230 | 3,671,070 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | |
| Sump & Discharge Pump | | 32,400 | 4,860 | 9,320 | 46,580 | | 1 |
| 06 06 02 01 02 Recharge Trenches | | | | | | | |
| Recharge Trenches | 2000.00 LF | 216,700 | 32,510 | 74,760 | 323,970 | 161.98 | 3 |
| INJECTION OF TREATED GROUNDWATER | | 249,100 | 37,370 | 84,080 | 370,550 | | |
| SUBSURFACE DRAINAGE | | 249,100 | 37,370 | 84,080 | 370,550 | | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | 41,270 | 6,190 | 11,860 | 59,320 | | 1 |
| 06 06 07 04 01 02 Manhole for Valving | 10.00 EA | 14,280 | 2,140 | 4,100 | 20,520 | 2052.27 | 1 |
| Pumping System to A.S./UV Oxid | | 55,540 | 8,330 | 15,970 | 79,840 | | |
| GROUNDWATER PUMPING F/ REMED ACT | | 55,540 | 8,330 | 15,970 | 79,840 | | |
| PUMPING/COLLECTION | | 55,540 | 8,330 | 15,970 | 79,840 | | |
| GROUNDWATER COLLECTION & CONTROL | | 980,750 | 147,110 | 294,420 | 1,422,280 | | |
| 06 13 PHYSICAL TREATMENT | | | | | | | |
| 06 13 07 AIR STRIPPING | | | | | | | |
| 06 13 07 05 MOBILIZATION/SETUP/TESTING | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,520 | |
| DECONTAMINATION FACILITIES | | 3,430 | 510 | 200 | 330 | 30 | 50 | 4,550 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,280 | 940 | 360 | 610 | 50 | 80 | 8,330 | |
| MOBILIZATION & PREPARATORY WORK | | 8,010 | 1,200 | 460 | 770 | 70 | 110 | 10,610 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 15.00 WK | 78,000 | 11,700 | 4,490 | 7,530 | 660 | 1,020 | 103,400 | 6893.55 |
| QA/Safety Monitoring | | 78,000 | 11,700 | 4,490 | 7,530 | 660 | 1,020 | 103,400 | |
| QA/Safety Monitoring | | 78,000 | 11,700 | 4,490 | 7,530 | 660 | 1,020 | 103,400 | |
| QA/Safety Monitoring | | 78,000 | 11,700 | 4,490 | 7,530 | 660 | 1,020 | 103,400 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 78,000 | 11,700 | 4,490 | 7,530 | 660 | 1,020 | 103,400 | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 10.00 EA | 510,000 | 76,500 | 29,320 | 49,270 | 4,310 | 6,690 | 676,100 | 67609.83 |
| WELL DRILLING & CONSTRUCTION | | 510,000 | 76,500 | 29,320 | 49,270 | 4,310 | 6,690 | 676,100 | |
| WELL DRILLING & CONSTRUCTION | | 510,000 | 76,500 | 29,320 | 49,270 | 4,310 | 6,690 | 676,100 | |
| EXTRACTION AND INJECTION WELLS | | 510,000 | 76,500 | 29,320 | 49,270 | 4,310 | 6,690 | 676,100 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | | | |
| Equipment Mob, Detailed List | | 1,730 | 260 | 100 | 170 | 10 | 20 | 2,290 | |
| TRANSPORTATION | | 1,730 | 260 | 100 | 170 | 10 | 20 | 2,290 | |
| MOB OF EQUIPMENT & PERSONNEL | | 1,730 | 260 | 100 | 170 | 10 | 20 | 2,290 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 20 | 40 | 3,780 | 37.78 |
| Office Trailers - setup | | 2,850 | 430 | 160 | 280 | 20 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 20 | 40 | 3,780 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,020 | 37.78 |
| Personnel Decon Facilities | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,020 | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,520 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 13 07 05 01 Mobilization/Setup/Testing | | | | | | | | | |
| 06 13 07 05 01 01 Mobilization & Setup | | 1,133,650 | 170,050 | 65,180 | 109,510 | 9,590 | 14,880 | 1,502,860 | |
| 06 13 07 05 01 02 Startup Testing | | 1,600 | 240 | 90 | 150 | 10 | 20 | 2,120 | |
| Mobilization/Setup/Testing | | 1,135,250 | 170,290 | 65,280 | 109,660 | 9,600 | 14,900 | 1,504,980 | |
| MOBILIZATION/SETUP/TESTING | | 1,135,250 | 170,290 | 65,280 | 109,660 | 9,600 | 14,900 | 1,504,980 | |
| 06 13 07 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | | | |
| AIR STRIPPING | | 1,135,250 | 170,290 | 65,280 | 109,660 | 9,600 | 14,900 | 1,504,980 | |
| PHYSICAL TREATMENT | | 1,135,250 | 170,290 | 65,280 | 109,660 | 9,600 | 14,900 | 1,504,980 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | | | |
| DeMob - Equipment/Facilities | | 6,000 | 900 | 350 | 580 | 50 | 80 | 7,950 | |
| TRANSPORTATION | | 6,000 | 900 | 350 | 580 | 50 | 80 | 7,950 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 6,000 | 900 | 350 | 580 | 50 | 80 | 7,950 | |
| DEMOBILIZATION | | 6,000 | 900 | 350 | 580 | 50 | 80 | 7,950 | |
| REMEDIAL ACTION | | 1,967,060 | 295,060 | 113,110 | 190,020 | 16,640 | 25,820 | 2,607,690 | |
| HANFORD: REMEDIATION | | 1,967,060 | 295,060 | 113,110 | 190,020 | 16,640 | 25,820 | 2,607,690 | |
| S & A | | | | | | | | 391,150 | |
| SUBTOTAL | | | | | | | | 2,998,850 | |
| CONTINGENCY | | | | | | | | 672,230 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 3,671,070 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | | | |
| Sump & Discharge Pump | | 24,440 | 3,670 | 1,410 | 2,360 | 210 | 320 | 32,400 | |
| 06 06 02 01 02 Recharge Trenches | | | | | | | | | |
| Recharge Trenches | 2000.00 LF | 163,460 | 24,520 | 9,400 | 15,790 | 1,380 | 2,150 | 216,700 | 108.35 |
| INJECTION OF TREATED GROUNDWATER | | 187,910 | 28,190 | 10,800 | 18,150 | 1,590 | 2,470 | 249,100 | |
| SUBSURFACE DRAINAGE | | 187,910 | 28,190 | 10,800 | 18,150 | 1,590 | 2,470 | 249,100 | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | 31,130 | 4,670 | 1,790 | 3,010 | 260 | 410 | 41,270 | |
| 06 06 07 04 01 02 Manhole for Valving | 10.00 EA | 10,770 | 1,620 | 620 | 1,040 | 90 | 140 | 14,280 | 1427.67 |
| Pumping System to A.S./UV Oxid | | 41,900 | 6,280 | 2,410 | 4,050 | 350 | 550 | 55,540 | |
| GROUNDWATER PUMPING F/ REMED ACT | | 41,900 | 6,280 | 2,410 | 4,050 | 350 | 550 | 55,540 | |
| PUMPING/COLLECTION | | 41,900 | 6,280 | 2,410 | 4,050 | 350 | 550 | 55,540 | |
| GROUNDWATER COLLECTION & CONTROL | | 739,800 | 110,970 | 42,540 | 71,470 | 6,260 | 9,710 | 980,750 | |
| 06 13 PHYSICAL TREATMENT | | | | | | | | | |
| 06 13 07 AIR STRIPPING | | | | | | | | | |
| 06 13 07 05 MOBILIZATION/SETUP/TESTING | | | | | | | | | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Equipment Mob, Detailed List | | | | | 0 | 0 | 1,725 | 0 | 0 | 1,725 | |
| TRANSPORTATION | | | | | 0 | 0 | 1,725 | 0 | 0 | 1,725 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT & PERSONNEL
06 01 01 01. TRANSPORTATION

06 01 01 01 01. Equipment Mob, Detailed List

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 1101 > Mob, Field Office Trailer | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| USR AA <01505 1102 > Mob, Crane, Hy, SP, 16-25 Ton, Rough Terrain, 4WD, 100-mi Rad | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 500.00 |
| USR AA <01505 3102 > Mob, Loader/Backhoe, 1-1.5 CY, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 200.00<br>200 | 0.00<br>0 | 0.00<br>0 | 200.00<br>200 | 200.00 |
| USR AA <01505 7111 > Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 8412 > Mob, Compactor, VIB, 32" Plate, 100-mi Radius | 2.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 75.00<br>150 | 0.00<br>0 | 0.00<br>0 | 75.00<br>150 | 75.00 |
| USR AA <01505 8431 > Mob, Drill Rig, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| USR AA <01505 7123 > Mob, End Dump trailer, 12 CY w/CLT8000 Trk, 100-mi Radius | 2.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>250 | 0.00<br>0 | 0.00<br>0 | 125.00<br>250 | 125.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01. Personnel Decon Facilities | | | | | | | | | |
| 06 01 04 02 01 01. Personnel Decon Facilities<br>Allow 80 mhrs for setup of Decontamination trailer. This is a self-contained unit which includes changing rooms and showers. An allowance for some equipment and material has been added. | | | | | | | | | |
| Personnel Decon Facilities | 80.00 HR | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Personnel Decon Facilities | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| 06 01 04 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 04 02 02 01. Equip/Vehicle Decon Facilities<br>Allow 40 mhrs for setup of equipment decon facilities. An allowance for equipment and materials has been added. | | | | | | | | | |
| Equip/Vehicle Decon Facilities | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| Equip/Vehicle Decon Facilities | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| DECONTAMINATION FACILITIES | | | 0 | 3,000 | 300 | 130 | 0 | 3,430 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | | | |
| 06 01 04 01 01. Office Trailers - setup | | | | | | | | | | | |
| 06 01 04 01 01 01. Office Trailers - setup<br>Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Office Trailers - setup | 100.00 | HR | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Office Trailers - setup | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

06 06. GROUNDWATER COLLECTION & CONTROL

This feature covers the groundwater collection, control, and recharge system, exclusive of the treatment sytem. Major equipment suppliers have provided costs for the following items:

well pump: Flint & Walling, United Pipe & Supply
air release valves: APCO Valves
strainer: Hayward Strainer Company Control Factors, Inc.
flow control valves: Griswold Controls
sump pump: PACO Pumps
flow meters: Signet

.

06 06 01. EXTRACTION AND INJECTION WELLS
06 06 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01 01. WELL DRILLING & CONSTRUCTION

For Extraction Scheme 3, ten 60 VLF wells will be required. A well point type well will probably be all that is needed, however, as the type and construction of the extractions wells has not been defined, it is assumed for this estimate that a monitoring type well may be required. This is a conservative assumption, as well points are much cheaper than monitoring wells. Assume 2 days to drill and 2 days to develope each well.

.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <02580 1001 > 6" Dia, Extraction well | | | 0.00 | 0.00 | 0.00 | 0.00 | 850.00 | 850.00 | |
| From a recent quote to drill monitoring wells in the 1100 Area, use $850/VLF. This cost includes: drilling, installation and development. All SubContr overhead markups, & all safety items are also covered in the unit cost. | 600.00 VLF N/A | 0.00 | 0 | 0 | 0 | 0 | 510,000 | 510,000 | 850.00 |
| WELL DRILLING & CONSTRUCTION | 10.00 EA | | 0 | 0 | 0 | 0 | 510,000 | 510,000 | 51000.00 |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 510,000 | 510,000 | |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 510,000 | 510,000 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 91. QA/Safety Monitoring
06 02 91 01. QA/Safety Monitoring

06 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

06 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

| | | |
|---|---|---|
| WHC HPT: | 40 Hrs @ $50/Hr | = $2,000 |
| COE Safety Rep: | 40 Hrs @ $70/Hr | = 2,800 |
| COE S.A. for QA: | 8 Hrs @ $50/Hr | = 400 |
| | | $5,200/wk |

Estimated duration of job is 13 weeks, with 2 weeks for Mob, Setup, & Demob, so use 15 WK.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | 15.00 | WK | | 0 | 78,000 | 0 | 0 | 0 | 78,000 | 5200.00 |
| QA/Safety Monitoring | | | | 0 | 78,000 | 0 | 0 | 0 | 78,000 | |
| QA/Safety Monitoring | | | | 0 | 78,000 | 0 | 0 | 0 | 78,000 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <15061 2393 > 8" x 2" Reducer, Eccentric | | | 1.25 | 35.19 | 0.47 | 11.05 | 0.00 | 46.71 | |
| | 1.00 EA MPLUE | 2.00 | 1 | 35 | 0 | 11 | 0 | 47 | 46.71 |
| USR AA <15061 2394 > 6" x 4" Reducer, Eccentric | | | 2.50 | 70.39 | 0.93 | 21.56 | 0.00 | 92.88 | |
| | 1.00 EA MPLUE | 1.00 | 3 | 70 | 1 | 22 | 0 | 93 | 92.88 |
| USR AA <15061 2396 > 8" x 6" Reducer, Eccentric | | | 5.00 | 140.77 | 1.86 | 26.95 | 0.00 | 169.58 | |
| | 5.00 EA MPLUE | 0.50 | 25 | 704 | 9 | 135 | 0 | 848 | 169.58 |
| USR AA <15061 2397 > 8" x 3" Reducer, Eccentric | | | 5.00 | 140.77 | 1.86 | 43.12 | 0.00 | 185.75 | |
| | 2.00 EA MPLUE | 0.50 | 10 | 282 | 4 | 86 | 0 | 372 | 185.75 |
| Sump & Discharge Pump | | | 190 | 5,296 | 113 | 18,033 | 1,000 | 24,442 | |
| 06 06 02 01 02. Recharge Trenches<br>This item covers installation of a 1,000 LF, 20' W x 4' D recharge trench with 2, 1,000-LF pipe drains. Allow 35 days for installation of trench. | | | | | | | | | |
| USR AA <02520 5013 > Exc, 20'x4' Undergrnd Trench Drn | | | 0.06 | 1.53 | 0.47 | 0.00 | 0.00 | 2.00 | |
| Excavation, Q: 4,000 CY, use: 4,500 LCY (also includes trench for piping from well to cleaner unit, and to recharge trench). | 4500.00 LCY CODEG | 25.00 | 270 | 6,901 | 2,105 | 0 | 0 | 9,006 | 2.00 |
| L MIL AA <02225 3104 > Haul waste, 12 CY Truck, 1-Mi, | | | 0.05 | 1.36 | 1.13 | 0.00 | 0.00 | 2.49 | |
| 20 MPH, 4.2 Cycles/Hr. Assume waste soil hauled to a close by area for dumping. Will probably need 2 trucks for this large of quantities, so will use 1/2 production rate. | 4500.00 LCY COEID | 20.00 | 225 | 6,129 | 5,086 | 0 | 0 | 11,215 | 2.49 |
| USR AA <02520 5013 > Backfill w/ Pipe bedding & Cmpct | | | 0.22 | 5.23 | 0.79 | 26.95 | 0.00 | 32.97 | |
| Assume pipe bedding bought and delivered for $25/LCY. | 3650.00 LCY CODEJ | 15.00 | 791 | 19,092 | 2,889 | 98,368 | 0 | 120,349 | 32.97 |
| USR AA <02511 2105 > 12" D, Perf PVC Pipe, Underdrain | | | 0.13 | 3.14 | 0.47 | 4.04 | 0.00 | 7.66 | |
| | 2000.00 LF CODEJ | 25.00 | 260 | 6,277 | 950 | 8,085 | 0 | 15,312 | 7.66 |
| B MIL AA <15064 4153 > 12" Tee, PVC Drain & Sewer | | | 0.63 | 17.60 | 0.23 | 21.56 | 0.00 | 39.39 | |
| | 2.00 EA MPLUE | 4.00 | 1 | 35 | 0 | 43 | 0 | 79 | 39.39 |

06 06. GROUNDWATER COLLECTION & CONTROL

06 06 02. SUBSURFACE DRAINAGE
06 06 02 01. INJECTION OF TREATED GROUNDWATER

06 06 02 01 01. Sump & Discharge Pump
Allow 10 days for two crews.

| | | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M USR AA <02533 1012 > | Submersible Sump Pump, 1100 GPM, 20 HP, 15' Head, 4" Discharge PACO #NSC 41211 | 1.00 | EA | MPLUE | 0.50 | 5.00<br>5 | 140.77<br>141 | 1.86<br>2 | 9917.60<br>9,918 | 0.00<br>0 | 10060.23<br>10,060 | 10060.23 |
| M USR AA <15101 1407 > | 6" Iron Body Gate Valve, NRS | 3.00 | EA | MPLUE | 0.50 | 5.00<br>15 | 140.77<br>422 | 1.86<br>6 | 377.30<br>1,132 | 0.00<br>0 | 519.93<br>1,560 | 519.93 |
| M USR AA <15110 1104 > | 4" Single Disc Type Check Valve IB Wafer Type- 125# | 1.00 | EA | MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 188.65<br>189 | 0.00<br>0 | 224.31<br>224 | 224.31 |
| M USR AA <15122 1103 > | 2" air release valve, APCO #200A | 1.00 | EA | MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 80.85<br>81 | 0.00<br>0 | 116.51<br>117 | 116.51 |
| M USR AA <02560 5201 > | 5'Dia x10' Deep, Precast Manhole 8" Tk, Add: $1000 for excavation and backfilling. | 1.00 | EA | CODEJ | 0.25 | 13.00<br>13 | 313.84<br>314 | 47.49<br>47 | 539.00<br>539 | 1000.00<br>1,000 | 1900.33<br>1,900 | 1900.33 |
| B MIL AA <15064 4111 > | 3" PVC Drain & Sewer Pipe | 250.00 | LF | MPLUE | 30.00 | 0.08<br>21 | 2.35<br>587 | 0.03<br>8 | 0.54<br>135 | 0.00<br>0 | 2.92<br>729 | 2.92 |
| L MIL AA <15064 4112 > | 4" PVC Drain & Sewer Pipe | 450.00 | LF | MPLUE | 20.00 | 0.13<br>56 | 3.52<br>1,584 | 0.05<br>21 | 0.65<br>291 | 0.00<br>0 | 4.21<br>1,896 | 4.21 |
| L MIL AA <15064 4121 > | 3" 90 Degree Elbow, PVC D&S | 11.00 | EA | MPLUE | 5.00 | 0.50<br>6 | 14.08<br>155 | 0.19<br>2 | 1.19<br>13 | 0.00<br>0 | 15.45<br>170 | 15.45 |
| L MIL AA <15064 4153 > | 6" Tee, PVC Drain & Sewer | 5.00 | EA | MPLUE | 2.50 | 1.00<br>5 | 28.15<br>141 | 0.37<br>2 | 6.62<br>33 | 0.00<br>0 | 35.15<br>176 | 35.15 |
| M USR AA <15061 2391 > | 4" x 3" Reducer, Eccentric | 3.00 | EA | MPLUE | 4.00 | 0.63<br>2 | 17.60<br>53 | 0.23<br>1 | 10.78<br>32 | 0.00<br>0 | 28.61<br>86 | 28.61 |
| M USR AA <15101 1108 > | 2" Bronze 125# Gate Valve Threaded | 1.00 | EA | MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 26.95<br>27 | 0.00<br>0 | 62.61<br>63 | 62.61 |
| B USR AA <15173 1108 > | Flowmeter, Signet P51530-PO sensor, P58440 display. | 10.00 | EA | MPLUE | 1.00 | 2.50<br>25 | 70.39<br>704 | 0.93<br>9 | 539.00<br>5,390 | 0.00<br>0 | 610.32<br>6,103 | 610.32 |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 06 07. PUMPING/COLLECTION | | | | | | | | | | | |
| 06 06 07 04. GROUNDWATER PUMPING F/ REMED ACT | | | | | | | | | | | |
| 06 06 07 04 01. Pumping System to A.S./UV Oxid | | | | | | | | | | | |
| 06 06 07 04 01 01. Pump, and Control valves<br>Estimate 15 days for two crews. | | | | | | | | | | | |
| B MIL AA <15061 1108 > 3" D, Galv Steel Pipe | | | | | 0.38 | 10.83 | 0.14 | 4.04 | 0.00 | 15.01 | |
| ASTM A-53, T&C, Sch 40 | 500.00 | LF | MPLUE | 6.50 | 192 | 5,414 | 72 | 2,021 | 0 | 7,507 | 15.01 |
| M USR AA <15083 1108 > 6" Simplex Basket Strainer. | | | | | 1.25 | 35.19 | 0.47 | 1304.38 | 0.00 | 1340.04 | |
| Hayward Co., flanged connections | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 1,304 | 0 | 1,340 | 1340.04 |
| Model 72, cast iron. | | | | | | | | | | | |
| M USR AA <15101 1105 > 1" Bronze, 125# Gate Valve | | | | | 1.05 | 29.64 | 0.39 | 16.17 | 0.00 | 46.20 | |
| Threaded, Brazed or Soldered | 11.00 | EA | MPLUE | 2.38 | 12 | 326 | 4 | 178 | 0 | 508 | 46.20 |
| M USR AA <15110 1103 > 3" Single Disc Type Check Valve | | | | | 1.25 | 35.19 | 0.47 | 134.75 | 0.00 | 170.41 | |
| IB Wafer Type- 125# | 10.00 | EA | MPLUE | 2.00 | 13 | 352 | 5 | 1,348 | 0 | 1,704 | 170.41 |
| M USR AA <15121 1106 > 8" Auto pressure-compensating | | | | | 1.25 | 35.19 | 0.47 | 1444.52 | 0.00 | 1480.18 | |
| constant-flow control valve. | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 1,445 | 0 | 1,480 | 1480.18 |
| Griswold Controls model #3372A. | | | | | | | | | | | |
| M USR AA <15146 2001 > 100 GPH Submersible Pump | | | | | 20.00 | 568.20 | 86.32 | 1078.00 | 0.00 | 1732.52 | |
| 6" Disch for Wells, 140' Deep | 10.00 | EA | MPLUS | 0.18 | 200 | 5,682 | 863 | 10,780 | 0 | 17,325 | 1732.52 |
| F&W #6P080A05, 7.5 HP | | | | | | | | | | | |
| M USR AA <15122 1103 > 1" air release valve, APCO #50 | | | | | 1.25 | 35.19 | 0.47 | 32.34 | 0.00 | 68.00 | |
| | 10.00 | EA | MPLUE | 2.00 | 13 | 352 | 5 | 323 | 0 | 680 | 68.00 |
| B USR AA <15182 1008 > Fbgs Cover for 8" D Pipe, 2" Thk | | | | | 0.20 | 3.00 | 0.10 | 8.09 | 0.00 | 11.19 | |
| With Fire Retardant Jacket | 30.00 | LF | N/A | 0.00 | 6 | 90 | 3 | 243 | 0 | 336 | 11.19 |
| M USR AA <15061 2391 > 3" x 1" Reducer, Eccentric | | | | | 0.63 | 17.60 | 0.23 | 7.01 | 0.00 | 24.84 | |
| | 10.00 | EA | MPLUE | 4.00 | 6 | 176 | 2 | 70 | 0 | 248 | 24.84 |
| Pump, and Control valves | | | | | 444 | 12,462 | 955 | 17,712 | 0 | 31,129 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B MIL AA <15064 4165 > 12"x6" Reducer, Drain & Sewer | | | | | 0.63 | 17.60 | 0.23 | 53.90 | 0.00 | 71.73 | |
| | 2.00 | EA | MPLUE | 4.00 | 1 | 35 | 0 | 108 | 0 | 143 | 71.73 |
| B MIL AA <15064 4113 > 6" PVC Drain & Sewer Pipe | | | | | 0.13 | 3.52 | 0.05 | 1.35 | 0.00 | 4.91 | |
| | 1175.00 | LF | MPLUE | 20.00 | 147 | 4,135 | 55 | 1,583 | 0 | 5,773 | 4.91 |
| B MIL AA <15064 4123 > 6" 90 Degree Elbow, PVC D&S | | | | | 0.63 | 17.60 | 0.23 | 5.93 | 0.00 | 23.76 | |
| | 3.00 | EA | MPLUE | 4.00 | 2 | 53 | 1 | 18 | 0 | 71 | 23.76 |
| B MIL AA <15064 4122 > 8" 90 Degree Elbow, PVC D&S | | | | | 0.63 | 17.60 | 0.23 | 10.78 | 0.00 | 28.61 | |
| | 4.00 | EA | MPLUE | 4.00 | 3 | 70 | 1 | 43 | 0 | 114 | 28.61 |
| B MIL AA <15064 4153 > 8" Tee, PVC Drain & Sewer | | | | | 0.83 | 23.46 | 0.31 | 13.48 | 0.00 | 37.25 | |
| | 4.00 | EA | MPLUE | 3.00 | 3 | 94 | 1 | 54 | 0 | 149 | 37.25 |
| B USR AA <15173 1108 > Flowmeter, Signet P51530-P1 | | | | | 2.50 | 70.39 | 0.93 | 555.17 | 0.00 | 626.49 | |
| sensor, P58440 display. | 2.00 | EA | MPLUE | 1.00 | 5 | 141 | 2 | 1,110 | 0 | 1,253 | 626.49 |
| Recharge Trenches | 2000.00 | LF | | | 1,708 | 42,962 | 11,090 | 109,412 | 0 | 163,464 | 81.73 |
| INJECTION OF TREATED GROUNDWATER | | | | | 1,898 | 48,258 | 11,203 | 127,445 | 1,000 | 187,906 | |

| 06 13. PHYSICAL TREATMENT | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 13. PHYSICAL TREATMENT | | | | | | | | | |
| 06 13 07. AIR STRIPPING | | | | | | | | | |
| 06 13 07 05. MOBILIZATION/SETUP/TESTING | | | | | | | | | |
| 06 13 07 05 01. Mobilization/Setup/Testing<br>Assume 2 weeks needed for Mob-in, setup, and testing. | | | | | | | | | |
| 06 13 07 05 01 01. Mobilization & Setup | | | | | | | | | |
| USR AA <01944 8001 > Mob Air stripper/Reverse Osmosis | | | 0.00 | 0.00 | 1030000 | 0.00 | 0.00 | 1030000.00 | |
| Assume at 10% of unit cost. | 0.10 PCT | 0.00 | 0 | 0 | 103,000 | 0 | 0 | 103,000 | 1030000.00 |
| USR AA <01944 8001 > Concrete pad, assume 10'x10' | | | 0.00 | 0.00 | 0.00 | 646.80 | 0.00 | 646.80 | |
| Cost for 2.0 CY @ $300/CY | 1.00 LS | 0.00 | 0 | 0 | 0 | 647 | 0 | 647 | 646.80 |
| USR AA <01944 8001 > 1,000 gpm, Air Stripper Unit | | | 0.00 | 0.00 | 0.00 | 0.00 | 60000.00 | 60000.00 | |
| 7' D x 25' Tower, 15' packing, 10 HP blower. Cost from Frank Lenzo, Hydro Group, Bridgeport, NJ, 1-800-524-2725. | 1.00 LS | 0.00 | 0 | 0 | 0 | 0 | 60,000 | 60,000 | 60000.00 |
| USR AA <01944 8001 > 1,000 gpm, Reverse Osmosis Unit | | | 0.00 | 0.00 | 0.00 | 0.00 | 970000.00 | 970000.00 | |
| Purchase cost for unit from Frank Rouse, Water Quality Control, Yakima, WA. | 1.00 LS | 0.00 | 0 | 0 | 0 | 0 | 970,000 | 970,000 | 970000.00 |
| Mobilization & Setup | | | 0 | 0 | 103,000 | 647 | 1,030,000 | 1,133,647 | |
| 06 13 07 05 01 02. Startup Testing<br>Assume a week of testing needed. | | | | | | | | | |
| Startup Testing | | | 0 | 1,250 | 250 | 100 | 0 | 1,600 | |
| Mobilization/Setup/Testing | | | 0 | 1,250 | 103,250 | 747 | 1,030,000 | 1,135,247 | |
| MOBILIZATION/SETUP/TESTING | | | 0 | 1,250 | 103,250 | 747 | 1,030,000 | 1,135,247 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 07 04 01 02. Manhole for Valving<br>Estimate 5 days. | | | | | | | | | |
| M USR AA <02560 5201 > 4' Dia x4' Deep, Precast Manhole | | | 13.00 | 313.84 | 47.49 | 215.60 | 500.00 | 1076.93 | |
| 8" Tk, Add: $500 for excavation and backfilling. | 10.00 EA CODEJ | 0.25 | 130 | 3,138 | 475 | 2,156 | 5,000 | 10,769 | 1076.93 |
| Manhole for Valving | 10.00 EA | | 130 | 3,138 | 475 | 2,156 | 5,000 | 10,769 | 1076.93 |
| Pumping System to A.S./UV Oxid | | | 574 | 15,601 | 1,430 | 19,868 | 5,000 | 41,898 | |
| GROUNDWATER PUMPING F/ REMED ACT | | | 574 | 15,601 | 1,430 | 19,868 | 5,000 | 41,898 | |

THIS PAGE INTENTIONALLY
LEFT BLANK

| 06 13. PHYSICAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 13 07 10. OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | | | | | |
| O & M costs will be estimated separately. | | | | | | | | | | | |
| OPERATION (LONG TERM-OVER 3 YRS) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 21. DEMOBILIZATION | | | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | | | |
| 06 21 04 01 01. DeMob - Equipment/Facilities | | | | | | | | | | | |
| Assume Demob at 75% of Mob and Setup. | | | | | | | | | | | |
| DeMob - Equipment/Facilities | | | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| TRANSPORTATION | | | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| HANFORD: REMEDIATION | | | | | 2,472 | 148,609 | 124,158 | 148,289 | 1,546,000 | 1,967,056 | |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 1152 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 2409 |
| MIL | B-PLUMBER | Plumbers | 31.33 | 0.0% | 0.0% | 0.00 | 0.00 | 31.33 | HR | 10/22/92 | 23.92 | 921 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 450 |

| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CODEG | 1 B-eqoprmed + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 360 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 11.69 | 50.03 |
| | CODEJ | 2 B-laborer + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 735 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 2.00 | HR | 23.14 | 2.00 | 46.28 | | | 46.28 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 3.25 | 78.46 | 1.13 | 11.87 | 90.33 |
| | COEID | 1 B-trkdvrhv + 1 Dump Truck, 12 Cy | | | PROD = | 100% | | | CREW HOURS = | 450 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 1.00 | HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| MIL | T40XX010 E | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.00 | HR | 2.63 | | | 1.00 | 2.63 | 2.63 |
| MIL | T50GM016 E | TRK, HWY, 3 AXLE, 41000 GVW, 6X | 1.00 | HR | 19.97 | | | 1.00 | 19.97 | 19.97 |
| | TOTAL | | | | | 1.00 | 27.24 | 2.00 | 22.60 | 49.84 |
| | MPLUE | 1 B-plumber + Small Tools | | | PROD = | 100% | | | CREW HOURS = | 461 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | B-PLUMBER F | Plumbers | 0.50 | HR | 31.83 | 0.50 | 15.92 | | | 15.92 |
| MIL | XMIXX020 E | Small Tools | 0.67 | HR | 1.39 | | | 0.67 | 0.93 | 0.93 |
| | TOTAL | | | | | 2.50 | 70.38 | 0.67 | 0.93 | 71.32 |
| | MPLUS | 2 B-plumber + 1- 14 Ton Crane, Hydraulic | | | PROD = | 100% | | | CREW HOURS = | 114 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 0.50 | HR | 26.27 | 0.50 | 13.14 | | | 13.14 |
| MIL | B-PLUMBER F | Plumbers | 1.00 | HR | 31.83 | 1.00 | 31.83 | | | 31.83 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | C75GV001 E | CRANE,HYD,SELF,ROUGH TER,4WD,18 | 0.50 | HR | 28.66 | | | 0.50 | 14.33 | 14.33 |
| MIL | XMIXX020 E | Small Tools | 0.56 | HR | 1.39 | | | 0.56 | 0.78 | 0.78 |
| | TOTAL | | | | | 3.50 | 99.43 | 1.06 | 15.11 | 114.54 |

THIS PAGE INTENTIONALLY
LEFT BLANK

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | C75GV001 | CRANE,HYD,SELF,ROUGH TER,4WD,18T | 9.20 | 3.48 | 3.62 | 1.0 | 9.89 | 1.20 | 0.18 | 28.66 | HR | 57 |
| MIL | L50CS002 | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 3.42 | 1.16 | 1.86 | 0.6 | 4.04 | 0.53 | 0.08 | 11.69 | HR | 1095 |
| MIL | T40XX010 | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.15 | 0.28 | | 0.0 | 1.11 | | | 2.63 | HR | 450 |
| MIL | T50GM016 | TRK, HWY, 3 AXLE, 41000 GVW, 6X4 | 4.17 | 1.08 | 7.46 | 2.0 | 3.69 | 1.29 | 0.19 | 19.97 | HR | 450 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 469 |

** PROJECT SETTINGS **

2ND VIEW COLUMNS

Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS

Page Break Levels : 4
Table of Contents Levels : 5

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |

Print Unit Cost Row : Y
Print Page Footer : N
Show Cost Codes : Y

COLUMNS OPTIONS

Print Crew Id : Y
Crew Output : Y
Unit Cost : Y

UPB TITLES

No. of Levels to Print : 0
Bracket Titles With : - :
Include titles Notes : Y

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** OWNER SETTINGS **

| | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|
| Project Information Record | | | | | | |
| 06 REMEDIAL ACTION | | | | | | |
| S & A | P | 15.00 | | | | |
| CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 50.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | |
| S & A | O | | | | | |
| CONTINGENCY | P | 20.00 | | | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | |

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y
Link Listing : N

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) |
|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 1 2 3 4 5 6 |
| Detail : | Y | | | |
| Project : | N | Y | Y | N N N N N Y |
| Contractor : | N | N | | N N N N N N N |
| Division : | N | N | N | Y N N N N N N |
| System : | N | N | N | Y N N N N N N |
| 2nd View : | N | | | |
| Crew : | Y | | | Y N N N N N N |
| Labor : | Y | | | |
| Equipment : | Y | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 06 02 01 02 Recharge Trenches | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 30.00 | | | | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 06 07 04 01 02 Manhole for Valving | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 25.00 | | | | |
| 06 13 PHYSICAL TREATMENT | | | | | | | |
| 06 13 07 AIR STRIPPING | | | | | | | |
| 06 13 07 05 MOBILIZATION/SETUP/TESTING | | | | | | | |
| 06 13 07 05 01 Mobilization/Setup/Testing | | | | | | | |
| 06 13 07 05 01 01 Mobilization & Setup | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 13 07 05 01 02 Startup Testing | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 13 07 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | O | | | | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

LEFT BLANK

THIS PAGE INTENTIONALLY
LEFT BLANK

DOE/RL-92-67

# GROUNDWATER REMEDIATION
# 1,000 GPM UV OXIDATION

HANFORD: 1.4.10.1.1.23.01.2 1100-EM-1 Baselines

This is the structure for the Subproject and Operable Unit remediation cost estimates. The Work Breakdown Structure (WBS) is based on the DOE-HQ WBS and a site specific remediation WBS being developed for Hanford.

"1.4.10.1.1" is DOE, Richland Operations, Hanford Environmental Restoration, Remedial Action.

".23" is the Subproject (ie. 1100-EM)

".01" is the Operable Unit

".2" is Remediation.

In this MCACES estimate project breakdown, the first level, "06", represents Remedial Action. The numbers for the next three levels (2nd thru 4th) are from the Hanford Remedial Action WBS. The fifth thru seventh levels are user defined, the fifth level being used for "Bid Items".

The Price Level for the estimate dollars is 1 Oct 93. S & A is estimated at 15%. See Contingency Notes for explanation of Contingency percentages. See Detail notes (pg. 1) for explanation of overhead percentages used.

This estimate covers initial construction for Extraction Scheme 3, Groundwater Remediation, which includes: 1,000 gpm flow (10 wells), with UV Oxidation and Reverse Osmosis cleaning, and recharge into ground in 1,000 LF 20' W x 4' D drain trench. The design life of this Scheme is 9 years. O & M costs are estimated separately.

HANFORD: REMEDIATION
1.4.10.1.1.23.01.2
1100-EM-1 OPERABLE UNIT
GROUNDWATER REMEMDIATION
1,000 GPM, UV OXIDATION

Designed By: CENPW-EN-EE
Estimated By: NPW COST ENGR

Prepared By: NPW COST ENGINEERING BRANCH
LARRY CHENEY, CHIEF, COST ENGR

Date: 10/23/92
Est Construction Time: 180 Days

M C A C E S G O L D E D I T I O N
Composer GOLD Copyright (C) 1985, 1988, 1990, 1992
by Building Systems Design, Inc.
Release 5.20J

THIS PAGE INTENTIONALLY
LEFT BLANK

1. Normal Contingency for this level of estimate is 20-30%.
2. Using 50% Contingency for Setup & Testing items, as they are undefined.
3. Using 30% Contingency based on uncertainty of the quantities given.

LABOR BACKUP.....2
EQUIPMENT BACKUP.....3

* * * END TABLE OF CONTENTS * * *

SUMMARY REPORTS — SUMMARY PAGE

PROJECT OWNER SUMMARY - LEVEL 6.....1
PROJECT INDIRECT SUMMARY - LEVEL 6.....5

DETAILED ESTIMATE — DETAIL PAGE

06. REMEDIAL ACTION
01. MOBILIZATION & PREPARATORY WORK
01. MOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. Equipment Mob, Detailed List.....1
04. SETUP/CONSTRUCT TEMP FACILITIES
01. TRAILERS AND BUILDINGS
01. Office Trailers - setup.....3
02. DECONTAMINATION FACILITIES
01. Personnel Decon Facilities.....4
02. Equip/Vehicle Decon Facilities.....4
02. MONITOR, SAMPLE, TEST, ANALYSIS
91. QA/Safety Monitoring
01. QA/Safety Monitoring
01. QA/Safety Monitoring.....5
06. GROUNDWATER COLLECTION & CONTROL
01. EXTRACTION AND INJECTION WELLS
01. WELL DRILLING & CONSTRUCTION
01. WELL DRILLING & CONSTRUCTION.....6
02. SUBSURFACE DRAINAGE
01. INJECTION OF TREATED GROUNDWATER
01. Sump & Discharge Pump.....7
02. Recharge Trenches.....8
07. PUMPING/COLLECTION
04. GROUNDWATER PUMPING F/ REMED ACT
01. Pumping System to A.S./UV Oxid.....10
12. CHEMICAL TREATMENT
01. OZONE/HYDROGEN PEROXIDE/UV OXID.
05. MOBILIZATION/SETUP/TESTING
01. Purchase, Mob, Setup, & Testing.....12
10. OPERATION (LONG TERM-OVER 3 YRS).....13
21. DEMOBILIZATION
04. DEMOB OF EQUIPMENT & PERSONNEL
01. TRANSPORTATION
01. DeMob - Equipment/Facilities.....13

BACKUP REPORTS — BACKUP PAGE

CREW BACKUP.....1

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,520 | 230 | 880 | 2,630 | | |
| DECONTAMINATION FACILITIES | | 4,550 | 680 | 2,610 | 7,840 | | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 8,320 | 1,250 | 4,790 | 14,360 | | |
| MOBILIZATION & PREPARATORY WORK | | 10,610 | 1,590 | 5,310 | 17,510 | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 25.00 WK | 172,320 | 25,850 | 39,630 | 237,800 | 9511.98 | 1 |
| QA/Safety Monitoring | | 172,320 | 25,850 | 39,630 | 237,800 | | |
| QA/Safety Monitoring | | 172,320 | 25,850 | 39,630 | 237,800 | | |
| QA/Safety Monitoring | | 172,320 | 25,850 | 39,630 | 237,800 | | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 172,320 | 25,850 | 39,630 | 237,800 | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 10.00 EA | 676,020 | 101,400 | 194,360 | 971,780 | 97177.64 | 1 |
| WELL DRILLING & CONSTRUCTION | | 676,020 | 101,400 | 194,360 | 971,780 | | |
| WELL DRILLING & CONSTRUCTION | | 676,020 | 101,400 | 194,360 | 971,780 | | |
| EXTRACTION AND INJECTION WELLS | | 676,020 | 101,400 | 194,360 | 971,780 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | |
| Equipment Mob, Detailed List | | 2,290 | 340 | 530 | 3,160 | | 1 |
| TRANSPORTATION | | 2,290 | 340 | 530 | 3,160 | | |
| MOB OF EQUIPMENT & PERSONNEL | | 2,290 | 340 | 530 | 3,160 | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 3,780 | 570 | 2,170 | 6,520 | 65.17 | 2 |
| Office Trailers - setup | | 3,780 | 570 | 2,170 | 6,520 | | |
| TRAILERS AND BUILDINGS | | 3,780 | 570 | 2,170 | 6,520 | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 3,020 | 450 | 1,740 | 5,210 | 65.17 | 2 |
| Personnel Decon Facilities | | 3,020 | 450 | 1,740 | 5,210 | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,520 | 230 | 880 | 2,630 | | 2 |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 12 01 05 01 Purchase, Mob, Setup, & Testing | | | | | | | |
| 06 12 01 05 01 01 Purchase of UV Oxidation Unit | | 530,210 | 79,530 | 121,950 | 731,690 | | 1 |
| 06 12 01 05 01 02 Purchase Reverse Osmosis Unit | | 1,272,510 | 190,880 | 292,680 | 1,756,060 | | 1 |
| 06 12 01 05 01 03 Mob, Setup & Testing | | 17,890 | 2,680 | 10,290 | 30,870 | | 2 |
| Purchase, Mob, Setup, & Testing | | 1,820,610 | 273,090 | 424,910 | 2,518,620 | | |
| MOBILIZATION/SETUP/TESTING | | 1,820,610 | 273,090 | 424,910 | 2,518,620 | | |
| 06 12 01 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| OZONE/HYDROGEN PEROXIDE/UV OXID. | | 1,820,610 | 273,090 | 424,910 | 2,518,620 | | |
| CHEMICAL TREATMENT | | 1,820,610 | 273,090 | 424,910 | 2,518,620 | | |
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| DeMob - Equipment/Facilities | | 7,950 | 1,190 | 1,830 | 10,980 | | 1 |
| TRANSPORTATION | | 7,950 | 1,190 | 1,830 | 10,980 | | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 7,950 | 1,190 | 1,830 | 10,980 | | |
| DEMOBILIZATION | | 7,950 | 1,190 | 1,830 | 10,980 | | |
| REMEDIAL ACTION | | 2,992,120 | 448,820 | 766,080 | 4,207,020 | | |
| HANFORD: REMEDIATION | | 2,992,120 | 448,820 | 766,080 | 4,207,020 | | |

| | QUANTITY UOM | CONTRACT | S & A | CONTG | TOTAL COST | UNIT COST | NOTES |
|---|---|---|---|---|---|---|---|
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | |
| Sump & Discharge Pump | | 32,400 | 4,860 | 9,310 | 46,570 | | 1 |
| 06 06 02 01 02 Recharge Trenches | | | | | | | |
| Recharge Trenches | 2000.00 LF | 216,680 | 32,500 | 74,750 | 323,930 | 161.97 | 3 |
| INJECTION OF TREATED GROUNDWATER | | 249,070 | 37,360 | 84,070 | 370,500 | | |
| SUBSURFACE DRAINAGE | | 249,070 | 37,360 | 84,070 | 370,500 | | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | 41,260 | 6,190 | 11,860 | 59,310 | | 1 |
| 06 06 07 04 01 02 Manhole for Valving | 10.00 EA | 14,270 | 2,140 | 4,100 | 20,520 | 2052.03 | 1 |
| Pumping System to A.S./UV Oxid | | 55,540 | 8,330 | 15,970 | 79,830 | | |
| GROUNDWATER PUMPING F/ REMED ACT | | 55,540 | 8,330 | 15,970 | 79,830 | | |
| PUMPING/COLLECTION | | 55,540 | 8,330 | 15,970 | 79,830 | | |
| GROUNDWATER COLLECTION & CONTROL | | 980,630 | 147,090 | 294,390 | 1,422,110 | | |
| 06 12 CHEMICAL TREATMENT | | | | | | | |
| 06 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | |
| 06 12 01 05 MOBILIZATION/SETUP/TESTING | | | | | | | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,520 | |
| DECONTAMINATION FACILITIES | | 3,430 | 510 | 200 | 330 | 30 | 50 | 4,550 | |
| SETUP/CONSTRUCT TEMP FACILITIES | | 6,280 | 940 | 360 | 610 | 50 | 80 | 8,320 | |
| MOBILIZATION & PREPARATORY WORK | | 8,010 | 1,200 | 460 | 770 | 70 | 110 | 10,610 | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | 25.00 WK | 130,000 | 19,500 | 7,470 | 12,560 | 1,080 | 1,710 | 172,320 | 6892.74 |
| QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,080 | 1,710 | 172,320 | |
| QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,080 | 1,710 | 172,320 | |
| QA/Safety Monitoring | | 130,000 | 19,500 | 7,470 | 12,560 | 1,080 | 1,710 | 172,320 | |
| MONITOR, SAMPLE, TEST, ANALYSIS | | 130,000 | 19,500 | 7,470 | 12,560 | 1,080 | 1,710 | 172,320 | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | | | |
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | 10.00 EA | 510,000 | 76,500 | 29,320 | 49,270 | 4,230 | 6,690 | 676,020 | 67601.83 |
| WELL DRILLING & CONSTRUCTION | | 510,000 | 76,500 | 29,320 | 49,270 | 4,230 | 6,690 | 676,020 | |
| WELL DRILLING & CONSTRUCTION | | 510,000 | 76,500 | 29,320 | 49,270 | 4,230 | 6,690 | 676,020 | |
| EXTRACTION AND INJECTION WELLS | | 510,000 | 76,500 | 29,320 | 49,270 | 4,230 | 6,690 | 676,020 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 REMEDIAL ACTION | | | | | | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | | | |
| Equipment Mob, Detailed List | | 1,730 | 260 | 100 | 170 | 10 | 20 | 2,290 | |
| TRANSPORTATION | | 1,730 | 260 | 100 | 170 | 10 | 20 | 2,290 | |
| MOB OF EQUIPMENT & PERSONNEL | | 1,730 | 260 | 100 | 170 | 10 | 20 | 2,290 | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | 100.00 HR | 2,850 | 430 | 160 | 280 | 20 | 40 | 3,780 | 37.78 |
| Office Trailers - setup | | 2,850 | 430 | 160 | 280 | 20 | 40 | 3,780 | |
| TRAILERS AND BUILDINGS | | 2,850 | 430 | 160 | 280 | 20 | 40 | 3,780 | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | 80.00 HR | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,020 | 37.78 |
| Personnel Decon Facilities | | 2,280 | 340 | 130 | 220 | 20 | 30 | 3,020 | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | 1,150 | 170 | 70 | 110 | 10 | 20 | 1,520 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 12 01 05 01 Purchase, Mob, Setup, & Testing | | | | | | | | | |
| 06 12 01 05 01 01 Purchase of UV Oxidation Unit | | 400,000 | 60,000 | 23,000 | 38,640 | 3,320 | 5,250 | 530,210 | |
| 06 12 01 05 01 02 Purchase Reverse Osmosis Unit | | 960,000 | 144,000 | 55,200 | 92,740 | 7,970 | 12,600 | 1,272,510 | |
| 06 12 01 05 01 03 Mob, Setup & Testing | | 13,500 | 2,030 | 780 | 1,300 | 110 | 180 | 17,890 | |
| Purchase, Mob, Setup, & Testing | | 1,373,500 | 206,030 | 78,980 | 132,680 | 11,400 | 18,030 | 1,820,610 | |
| MOBILIZATION/SETUP/TESTING | | 1,373,500 | 206,030 | 78,980 | 132,680 | 11,400 | 18,030 | 1,820,610 | |
| 06 12 01 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | | | |
| OZONE/HYDROGEN PEROXIDE/UV OXID. | | 1,373,500 | 206,030 | 78,980 | 132,680 | 11,400 | 18,030 | 1,820,610 | |
| CHEMICAL TREATMENT | | 1,373,500 | 206,030 | 78,980 | 132,680 | 11,400 | 18,030 | 1,820,610 | |
| 06 21 DEMOBILIZATION | | | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | | | |
| DeMob - Equipment/Facilities | | 6,000 | 900 | 350 | 580 | 50 | 80 | 7,950 | |
| TRANSPORTATION | | 6,000 | 900 | 350 | 580 | 50 | 80 | 7,950 | |
| DEMOB OF EQUIPMENT & PERSONNEL | | 6,000 | 900 | 350 | 580 | 50 | 80 | 7,950 | |
| DEMOBILIZATION | | 6,000 | 900 | 350 | 580 | 50 | 80 | 7,950 | |
| REMEDIAL ACTION | | 2,257,310 | 338,600 | 129,800 | 218,060 | 18,740 | 29,620 | 2,992,120 | |
| HANFORD: REMEDIATION | | 2,257,310 | 338,600 | 129,800 | 218,060 | 18,740 | 29,620 | 2,992,120 | |
| S & A | | | | | | | | 448,820 | |
| SUBTOTAL | | | | | | | | 3,440,940 | |
| CONTINGENCY | | | | | | | | 766,080 | |
| TOTAL INCL OWNER COSTS | | | | | | | | 4,207,020 | |

| | QUANTITY UOM | DIRECT | FOOH | HOOH | PROF | BOND | B&O TAX | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | | | |
| Sump & Discharge Pump | | 24,440 | 3,670 | 1,410 | 2,360 | 200 | 320 | 32,400 | |
| 06 06 02 01 02 Recharge Trenches | | | | | | | | | |
| Recharge Trenches | 2000.00 LF | 163,460 | 24,520 | 9,400 | 15,790 | 1,360 | 2,150 | 216,680 | 108.34 |
| INJECTION OF TREATED GROUNDWATER | | 187,910 | 28,190 | 10,800 | 18,150 | 1,560 | 2,470 | 249,070 | |
| SUBSURFACE DRAINAGE | | 187,910 | 28,190 | 10,800 | 18,150 | 1,560 | 2,470 | 249,070 | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | 31,130 | 4,670 | 1,790 | 3,010 | 260 | 410 | 41,260 | |
| 06 06 07 04 01 02 Manhole for Valving | 10.00 EA | 10,770 | 1,620 | 620 | 1,040 | 90 | 140 | 14,270 | 1427.50 |
| Pumping System to A.S./UV Oxid | | 41,900 | 6,280 | 2,410 | 4,050 | 350 | 550 | 55,540 | |
| GROUNDWATER PUMPING F/ REMED ACT | | 41,900 | 6,280 | 2,410 | 4,050 | 350 | 550 | 55,540 | |
| PUMPING/COLLECTION | | 41,900 | 6,280 | 2,410 | 4,050 | 350 | 550 | 55,540 | |
| GROUNDWATER COLLECTION & CONTROL | | 739,800 | 110,970 | 42,540 | 71,470 | 6,140 | 9,710 | 980,630 | |
| 06 12 CHEMICAL TREATMENT | | | | | | | | | |
| 06 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | | | |
| 06 12 01 05 MOBILIZATION/SETUP/TESTING | | | | | | | | | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Equipment Mob, Detailed List | | | | | 0 | 0 | 1,725 | 0 | 0 | 1,725 | |
| TRANSPORTATION | | | | | 0 | 0 | 1,725 | 0 | 0 | 1,725 | |

| 0 AA. REMEDIAL GENERAL CONTRACTOR | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

0 AA. REMEDIAL GENERAL CONTRACTOR

Overhead Percentage Explanation:

Field office Overhead (FOOH): Normal is 10%, using 15% to allow for extra safety and Hanford related items.

Home office Overhead (HOOH): 4-5% is normal for this size of job.

PROFIT: 7-8% is normal for this size of job. However, PROFIT may be calculated separately for each job using the Weighted-Guide Line Method.

BOND: Calculated per dollar amount of job using B Bond rates by GOLD.

B&O TAX: 1% covers the 0.5% WA State B&O tax, and the 0.5% TARO tax.

06. REMEDIAL ACTION
06 01. MOBILIZATION & PREPARATORY WORK
06 01 01. MOB OF EQUIPMENT & PERSONNEL
06 01 01 01. TRANSPORTATION

06 01 01 01 01. Equipment Mob, Detailed List

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <01505 1101 > Mob, Field Office Trailer | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |
| USR AA <01505 1102 > Mob, Crane, Hy, SP, 16-25 Ton, Rough Terrain, 4WD, 100-mi Rad | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 0.00<br>0 | 0.00<br>0 | 500.00<br>500 | 500.00 |
| USR AA <01505 3102 > Mob, Loader/Backhoe, 1-1.5 CY, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 200.00<br>200 | 0.00<br>0 | 0.00<br>0 | 200.00<br>200 | 200.00 |
| USR AA <01505 7111 > Mob, Flatbed w/ Sides, 8'x10', Mtd/FT800 Trk, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 0.00<br>0 | 0.00<br>0 | 125.00<br>125 | 125.00 |
| USR AA <01505 7123 > Mob, End Dump Trailer, 12 CY, w/CLT8000 Trk, 100-mi Rad | 2.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 125.00<br>250 | 0.00<br>0 | 0.00<br>0 | 125.00<br>250 | 125.00 |
| USR AA <01505 8412 > Mob, Compactor, VIB, 32" Plate, 100-mi Radius | 2.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 75.00<br>150 | 0.00<br>0 | 0.00<br>0 | 75.00<br>150 | 75.00 |
| USR AA <01505 8431 > Mob, Drill Rig, 100-mi Radius | 1.00 EA | 0.00 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 0.00<br>0 | 0.00<br>0 | 250.00<br>250 | 250.00 |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04 02. DECONTAMINATION FACILITIES | | | | | | | | | | | |
| 06 01 04 02 01. Personnel Decon Facilities | | | | | | | | | | | |
| 06 01 04 02 01 01. Personnel Decon Facilities<br>Allow 80 mhrs for setup of Decontamination trailer. This is a self-contained unit which includes changing rooms and showers. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Personnel Decon Facilities | 80.00 | HR | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | 28.50 |
| Personnel Decon Facilities | | | | | 0 | 2,000 | 200 | 80 | 0 | 2,280 | |
| 06 01 04 02 02. Equip/Vehicle Decon Facilities | | | | | | | | | | | |
| 06 01 04 02 02 01. Equip/Vehicle Decon Facilities<br>Allow 40 mhrs for setup of equipment decon facilities. An allowance for equipment and materials has been added. | | | | | | | | | | | |
| Equip/Vehicle Decon Facilities | | | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| Equip/Vehicle Decon Facilities | | | | | 0 | 1,000 | 100 | 50 | 0 | 1,150 | |
| DECONTAMINATION FACILITIES | | | | | 0 | 3,000 | 300 | 130 | 0 | 3,430 | |

| 06 01. MOBILIZATION & PREPARATORY WORK | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 01 04. SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | | | | | |
| 06 01 04 01. TRAILERS AND BUILDINGS | | | | | | | | | | | |
| 06 01 04 01 01. Office Trailers - setup | | | | | | | | | | | |
| 06 01 04 01 01 01. Office Trailers - setup<br>Allow 100 mhrs for setup of contractor's trailer and equipment, and site layout. An allowance for some equipment and material has been added. | | | | | | | | | | | |
| Office Trailers - setup | 100.00 | HR | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | 28.50 |
| Office Trailers - setup | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |
| TRAILERS AND BUILDINGS | | | | | 0 | 2,500 | 250 | 100 | 0 | 2,850 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|

06 06. GROUNDWATER COLLECTION & CONTROL

This feature covers the groundwater collection, control, and recharge system, exclusive of the treatment sytem. Major equipment suppliers have provided costs for the following items:

well pump: Flint & Walling, United Pipe & Supply
air release valves: APCO Valves
strainer: Hayward Strainer Company Control Factors, Inc.
flow control valves: Griswold Controls
sump pump: PACO Pumps
flow meters: Signet

.

06 06 01. EXTRACTION AND INJECTION WELLS

06 06 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01. WELL DRILLING & CONSTRUCTION

06 06 01 01 01 01. WELL DRILLING & CONSTRUCTION

For Extraction Scheme 3, ten 60 VLF wells will be required. A well point type well will probably be all that is needed, however, as the type and construction of the extractions wells has not been defined, it is assumed for this estimate that a monitoring type well may be required. This is a conservative assumption, as well points are much cheaper than monitoring wells. Assume 2 days to drill and 2 days to develope each well.

.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <02580 1001 > 6" Dia, Extraction well | | | 0.00 | 0.00 | 0.00 | 0.00 | 850.00 | 850.00 | |
| From a recent quote to drill monitoring wells in the 1100 Area, use $850/VLF. This cost includes: drilling, installation and development. All SubContr overhead markups, & all safety items are also covered in the unit cost. | 600.00 VLF N/A | 0.00 | 0 | 0 | 0 | 0 | 510,000 | 510,000 | 850.00 |
| WELL DRILLING & CONSTRUCTION | 10.00 EA | | 0 | 0 | 0 | 0 | 510,000 | 510,000 | 51000.00 |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 510,000 | 510,000 | |
| WELL DRILLING & CONSTRUCTION | | | 0 | 0 | 0 | 0 | 510,000 | 510,000 | |

| 06 02. MONITOR, SAMPLE, TEST, ANALYSIS | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|

06 02. MONITOR, SAMPLE, TEST, ANALYSIS
06 02 91. QA/Safety Monitoring
06 02 91 01. QA/Safety Monitoring

06 02 91 01 01. QA/Safety Monitoring
This item covers the QA/Safety Monitoring required for the Hanford site.
Included is the WHC HPT, COE Safety Rep, and COE Special Assistant for QA.

06 02 91 01 01 01. QA/Safety Monitoring
This covers cost of QA and Safety oversight per week:

WHC HPT: 40 Hrs @ $50/Hr = $2,000
COE Safety Rep: 40 Hrs @ $70/Hr = 2,800
COE S.A. for QA: 8 Hrs @ $50/Hr = 400
---
$5,200/wk

Estimated duration of job is 23 weeks, with 2 week for Mob, Setup, & Demob, so use 25 WK.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| QA/Safety Monitoring | 25.00 | WK | | | 0 | 130,000 | 0 | 0 | 0 | 130,000 | 5200.00 |
| QA/Safety Monitoring | | | | | 0 | 130,000 | 0 | 0 | 0 | 130,000 | |
| QA/Safety Monitoring | | | | | 0 | 130,000 | 0 | 0 | 0 | 130,000 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| USR AA <15061 2393 > 8" x 2" Reducer, Eccentric | | | 1.25 | 35.19 | 0.47 | 11.05 | 0.00 | 46.71 | |
| | 1.00 EA MPLUE | 2.00 | 1 | 35 | 0 | 11 | 0 | 47 | 46.71 |
| USR AA <15061 2394 > 6" x 4" Reducer, Eccentric | | | 2.50 | 70.39 | 0.93 | 21.56 | 0.00 | 92.88 | |
| | 1.00 EA MPLUE | 1.00 | 3 | 70 | 1 | 22 | 0 | 93 | 92.88 |
| USR AA <15061 2396 > 8" x 6" Reducer, Eccentric | | | 5.00 | 140.77 | 1.86 | 26.95 | 0.00 | 169.58 | |
| | 5.00 EA MPLUE | 0.50 | 25 | 704 | 9 | 135 | 0 | 848 | 169.58 |
| USR AA <15061 2397 > 8" x 3" Reducer, Eccentric | | | 5.00 | 140.77 | 1.86 | 43.12 | 0.00 | 185.75 | |
| | 2.00 EA MPLUE | 0.50 | 10 | 282 | 4 | 86 | 0 | 372 | 185.75 |
| Sump & Discharge Pump | | | 190 | 5,296 | 113 | 18,033 | 1,000 | 24,442 | |
| 06 06 02 01 02. Recharge Trenches<br>This item covers installation of 2,000 Lf of drain pipe in a 1,000 LF, 20' W x 4' D recharge trench. Allow 35 days for installation of trench. | | | | | | | | | |
| USR AA <02520 5013 > Exc, 20'x4' Undergrnd Trench Drn | | | 0.06 | 1.53 | 0.47 | 0.00 | 0.00 | 2.00 | |
| Excavation, Q: 4,000 CY, use: 4,500 LCY (also includes trench for piping from well to cleaner unit, and to recharge trench). | 4500.00 LCY CODEG | 25.00 | 270 | 6,901 | 2,105 | 0 | 0 | 9,006 | 2.00 |
| L MIL AA <02225 3104 > Haul waste, 12 CY Truck, 1-Mi, | | | 0.05 | 1.36 | 1.13 | 0.00 | 0.00 | 2.49 | |
| 20 MPH, 4.2 Cycles/Hr. Assume wate soil hauled to a close by area for dumping. Due to large quantity of soil, will use 2 trucks, so have cut production rate in-half. | 4500.00 LCY COEID | 20.00 | 225 | 6,129 | 5,086 | 0 | 0 | 11,215 | 2.49 |
| USR AA <02520 5013 > Backfill w/ Pipe bedding & Cmpct | | | 0.22 | 5.23 | 0.79 | 26.95 | 0.00 | 32.97 | |
| Assume pipe bedding bought and delivered for $25/LCY. | 3650.00 LCY CODEJ | 15.00 | 791 | 19,092 | 2,889 | 98,368 | 0 | 120,349 | 32.97 |
| USR AA <02511 2105 > 12" D, Perf PVC Pipe, Underdrain | | | 0.13 | 3.14 | 0.47 | 4.04 | 0.00 | 7.66 | |
| | 2000.00 LF CODEJ | 25.00 | 260 | 6,277 | 950 | 8,085 | 0 | 15,312 | 7.66 |
| B MIL AA <15064 4153 > 12" Tee, PVC Drain & Sewer | | | 0.63 | 17.60 | 0.23 | 21.56 | 0.00 | 39.39 | |
| | 2.00 EA MPLUE | 4.00 | 1 | 35 | 0 | 43 | 0 | 79 | 39.39 |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 06 02. SUBSURFACE DRAINAGE | | | | | | | | | | | |
| 06 06 02 01. INJECTION OF TREATED GROUNDWATER | | | | | | | | | | | |
| 06 06 02 01 01. Sump & Discharge Pump<br>Allow 10 days for two crews. | | | | | | | | | | | |
| M USR AA <02533 1012 > Submersible Sump Pump, 1100 GPM, 20 HP, 15' Head, 4" Discharge PACO #NSC 41211 | 1.00 | EA | MPLUE | 0.50 | 5.00<br>5 | 140.77<br>141 | 1.86<br>2 | 9917.60<br>9,918 | 0.00<br>0 | 10060.23<br>10,060 | 10060.23 |
| M USR AA <15101 1407 > 6" Iron Body Gate Valve, NRS | 3.00 | EA | MPLUE | 0.50 | 5.00<br>15 | 140.77<br>422 | 1.86<br>6 | 377.30<br>1,132 | 0.00<br>0 | 519.93<br>1,560 | 519.93 |
| M USR AA <15110 1104 > 4" Single Disc Type Check Valve IB Wafer Type- 125# | 1.00 | EA | MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 188.65<br>189 | 0.00<br>0 | 224.31<br>224 | 224.31 |
| M USR AA <15122 1103 > 2" air release valve, APCO #200A | 1.00 | EA | MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 80.85<br>81 | 0.00<br>0 | 116.51<br>117 | 116.51 |
| M USR AA <02560 5201 > 5'Dia x10' Deep, Precast Manhole 8" Tk, Add: $1000 for excavation and backfilling. | 1.00 | EA | CODEJ | 0.25 | 13.00<br>13 | 313.84<br>314 | 47.49<br>47 | 539.00<br>539 | 1000.00<br>1,000 | 1900.33<br>1,900 | 1900.33 |
| B MIL AA <15064 4111 > 3" PVC Drain & Sewer Pipe | 250.00 | LF | MPLUE | 30.00 | 0.08<br>21 | 2.35<br>587 | 0.03<br>8 | 0.54<br>135 | 0.00<br>0 | 2.92<br>729 | 2.92 |
| L MIL AA <15064 4112 > 4" PVC Drain & Sewer Pipe | 450.00 | LF | MPLUE | 20.00 | 0.13<br>56 | 3.52<br>1,584 | 0.05<br>21 | 0.65<br>291 | 0.00<br>0 | 4.21<br>1,896 | 4.21 |
| L MIL AA <15064 4121 > 3" 90 Degree Elbow, PVC D&S | 11.00 | EA | MPLUE | 5.00 | 0.50<br>6 | 14.08<br>155 | 0.19<br>2 | 1.19<br>13 | 0.00<br>0 | 15.45<br>170 | 15.45 |
| L MIL AA <15064 4153 > 6" Tee, PVC Drain & Sewer | 5.00 | EA | MPLUE | 2.50 | 1.00<br>5 | 28.15<br>141 | 0.37<br>2 | 6.62<br>33 | 0.00<br>0 | 35.15<br>176 | 35.15 |
| M USR AA <15061 2391 > 4" x 3" Reducer, Eccentric | 3.00 | EA | MPLUE | 4.00 | 0.63<br>2 | 17.60<br>53 | 0.23<br>1 | 10.78<br>32 | 0.00<br>0 | 28.61<br>86 | 28.61 |
| M USR AA <15101 1108 > 2" Bronze 125# Gate Valve Threaded | 1.00 | EA | MPLUE | 2.00 | 1.25<br>1 | 35.19<br>35 | 0.47<br>0 | 26.95<br>27 | 0.00<br>0 | 62.61<br>63 | 62.61 |
| B USR AA <15173 1108 > Flowmeter, Signet P51530-PO sensor, P58440 display. | 10.00 | EA | MPLUE | 1.00 | 2.50<br>25 | 70.39<br>704 | 0.93<br>9 | 539.00<br>5,390 | 0.00<br>0 | 610.32<br>6,103 | 610.32 |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 06 07. PUMPING/COLLECTION | | | | | | | | | | | |
| 06 06 07 04. GROUNDWATER PUMPING F/ REMED ACT | | | | | | | | | | | |
| 06 06 07 04 01. Pumping System to A.S./UV Oxid | | | | | | | | | | | |
| 06 06 07 04 01 01. Pump, and Control valves<br>Estimate 15 days for two crews. | | | | | | | | | | | |
| B MIL AA <15061 1108 > 3" D, Galv Steel Pipe | | | | | 0.38 | 10.83 | 0.14 | 4.04 | 0.00 | 15.01 | |
| ASTM A-53, T&C, Sch 40 | 500.00 | LF | MPLUE | 6.50 | 192 | 5,414 | 72 | 2,021 | 0 | 7,507 | 15.01 |
| M USR AA <15083 1108 > 6" Simplex Basket Strainer. | | | | | 1.25 | 35.19 | 0.47 | 1304.38 | 0.00 | 1340.04 | |
| Hayward Co., flanged connections | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 1,304 | 0 | 1,340 | 1340.04 |
| Model 72, cast iron. | | | | | | | | | | | |
| M USR AA <15101 1105 > 1" Bronze, 125# Gate Valve | | | | | 1.05 | 29.64 | 0.39 | 16.17 | 0.00 | 46.20 | |
| Threaded, Brazed or Soldered | 11.00 | EA | MPLUE | 2.38 | 12 | 326 | 4 | 178 | 0 | 508 | 46.20 |
| M USR AA <15110 1103 > 3" Single Disc Type Check Valve | | | | | 1.25 | 35.19 | 0.47 | 134.75 | 0.00 | 170.41 | |
| IB Wafer Type- 125# | 10.00 | EA | MPLUE | 2.00 | 13 | 352 | 5 | 1,348 | 0 | 1,704 | 170.41 |
| M USR AA <15121 1106 > 8" Auto pressure-compensating | | | | | 1.25 | 35.19 | 0.47 | 1444.52 | 0.00 | 1480.18 | |
| constant-flow control valve. | 1.00 | EA | MPLUE | 2.00 | 1 | 35 | 0 | 1,445 | 0 | 1,480 | 1480.18 |
| Griswold Controls model #3372A. | | | | | | | | | | | |
| M USR AA <15146 2001 > 100 GPH Submersible Pump | | | | | 20.00 | 568.20 | 86.32 | 1078.00 | 0.00 | 1732.52 | |
| 6" Disch for Wells, 140' Deep | 10.00 | EA | MPLUS | 0.18 | 200 | 5,682 | 863 | 10,780 | 0 | 17,325 | 1732.52 |
| F&W #6P080A05, 7.5 HP | | | | | | | | | | | |
| M USR AA <15122 1103 > 1" air release valve, APCO #50 | | | | | 1.25 | 35.19 | 0.47 | 32.34 | 0.00 | 68.00 | |
| | 10.00 | EA | MPLUE | 2.00 | 13 | 352 | 5 | 323 | 0 | 680 | 68.00 |
| B USR AA <15182 1008 > Fbgs Cover for 8" D Pipe, 2" Thk | | | | | 0.20 | 3.00 | 0.10 | 8.09 | 0.00 | 11.19 | |
| With Fire Retardant Jacket | 30.00 | LF | N/A | 0.00 | 6 | 90 | 3 | 243 | 0 | 336 | 11.19 |
| M USR AA <15061 2391 > 3" x 1" Reducer, Eccentric | | | | | 0.63 | 17.60 | 0.23 | 7.01 | 0.00 | 24.84 | |
| | 10.00 | EA | MPLUE | 4.00 | 6 | 176 | 2 | 70 | 0 | 248 | 24.84 |
| Pump, and Control valves | | | | | 444 | 12,462 | 955 | 17,712 | 0 | 31,129 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B MIL AA <15064 4165 > 12"x6" Reducer, Drain & Sewer | | | | | 0.63 | 17.60 | 0.23 | 53.90 | 0.00 | 71.73 | |
| | 2.00 | EA | MPLUE | 4.00 | 1 | 35 | 0 | 108 | 0 | 143 | 71.73 |
| B MIL AA <15064 4113 > 6" PVC Drain & Sewer Pipe | | | | | 0.13 | 3.52 | 0.05 | 1.35 | 0.00 | 4.91 | |
| | 1175.00 | LF | MPLUE | 20.00 | 147 | 4,135 | 55 | 1,583 | 0 | 5,773 | 4.91 |
| B MIL AA <15064 4123 > 6" 90 Degree Elbow, PVC D&S | | | | | 0.63 | 17.60 | 0.23 | 5.93 | 0.00 | 23.76 | |
| | 3.00 | EA | MPLUE | 4.00 | 2 | 53 | 1 | 18 | 0 | 71 | 23.76 |
| B MIL AA <15064 4122 > 8" 90 Degree Elbow, PVC D&S | | | | | 0.63 | 17.60 | 0.23 | 10.78 | 0.00 | 28.61 | |
| | 4.00 | EA | MPLUE | 4.00 | 3 | 70 | 1 | 43 | 0 | 114 | 28.61 |
| B MIL AA <15064 4153 > 8" Tee, PVC Drain & Sewer | | | | | 0.83 | 23.46 | 0.31 | 13.48 | 0.00 | 37.25 | |
| | 4.00 | EA | MPLUE | 3.00 | 3 | 94 | 1 | 54 | 0 | 149 | 37.25 |
| B USR AA <15173 1108 > Flowmeter, Signet P51530-P1 | | | | | 2.50 | 70.39 | 0.93 | 555.17 | 0.00 | 626.49 | |
| sensor, P58440 display. | 2.00 | EA | MPLUE | 1.00 | 5 | 141 | 2 | 1,110 | 0 | 1,253 | 626.49 |
| Recharge Trenches | 2000.00 | LF | | | 1,708 | 42,962 | 11,090 | 109,412 | 0 | 163,464 | 81.73 |
| INJECTION OF TREATED GROUNDWATER | | | | | 1,898 | 48,258 | 11,203 | 127,445 | 1,000 | 187,906 | |

| 06 12. CHEMICAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 12. CHEMICAL TREATMENT | | | | | | | | | | | |
| 06 12 01. OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | | | | | |
| 06 12 01 05. MOBILIZATION/SETUP/TESTING | | | | | | | | | | | |
| 06 12 01 05 01. Purchase, Mob, Setup, & Testing<br>Assume 2 weeks needed for Mob-in, setup, and testing. | | | | | | | | | | | |
| 06 12 01 05 01 01. Purchase of UV Oxidation Unit<br>Budget capital purchase cost from ULTROX, Santa Ana, CA, Oct 12 92.<br>Oxidation Reactor: 2-C-5000, Ozone Generator: 300 lb/day. | | | | | | | | | | | |
| Purchase of UV Oxidation Unit | | | | | 0 | 0 | 0 | 0 | 400,000 | 400,000 | |
| 06 12 01 05 01 02. Purchase Reverse Osmosis Unit<br>For 1,000 gpm Reverse Osmosis unit, budget cost of $960,000 from Frank Rouse of Water Quality Control, Yakima, WA. | | | | | | | | | | | |
| Purchase Reverse Osmosis Unit | | | | | 0 | 0 | 0 | 0 | 960,000 | 960,000 | |
| 06 12 01 05 01 03. Mob, Setup & Testing<br>For Mob to Hanford, assume $7,000 to cover trucking cost. For Setup and Testing, allow $5,000 for setup labor and $1,500 for equipment & materials. | | | | | | | | | | | |
| Mob, Setup & Testing | | | | | 0 | 5,000 | 1,000 | 500 | 7,000 | 13,500 | |
| Purchase, Mob, Setup, & Testing | | | | | 0 | 5,000 | 1,000 | 500 | 1,367,000 | 1,373,500 | |
| MOBILIZATION/SETUP/TESTING | | | | | 0 | 5,000 | 1,000 | 500 | 1,367,000 | 1,373,500 | |

| 06 06. GROUNDWATER COLLECTION & CONTROL | QUANTY UOM CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|
| 06 06 07 04 01 02. Manhole for Valving<br>Estimate 5 days. | | | | | | | | | |
| M USR AA <02560 5201 > 4' Dia x4' Deep, Precast Manhole | | | 13.00 | 313.84 | 47.49 | 215.60 | 500.00 | 1076.93 | |
| 8" Tk, Add: $500 for excavation and backfilling. | 10.00 EA CODEJ | 0.25 | 130 | 3,138 | 475 | 2,156 | 5,000 | 10,769 | 1076.93 |
| Manhole for Valving | 10.00 EA | | 130 | 3,138 | 475 | 2,156 | 5,000 | 10,769 | 1076.93 |
| Pumping System to A.S./UV Oxid | | | 574 | 15,601 | 1,430 | 19,868 | 5,000 | 41,898 | |
| GROUNDWATER PUMPING F/ REMED ACT | | | 574 | 15,601 | 1,430 | 19,868 | 5,000 | 41,898 | |

THIS PAGE INTENTIONALLY
LEFT BLANK

| 06 12. CHEMICAL TREATMENT | QUANTY | UOM | CREW ID | OUTPUT | MHRS | LABR | EQUIP | MAT | OTHER | TOTAL COST | UNIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 12 01 10. OPERATION (LONG TERM-OVER 3 YRS) O & M costs will be estimated separately. | | | | | | | | | | | |
| OPERATION (LONG TERM-OVER 3 YRS) | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 06 21. DEMOBILIZATION | | | | | | | | | | | |
| 06 21 04. DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | | | | | |
| 06 21 04 01. TRANSPORTATION | | | | | | | | | | | |
| 06 21 04 01 01. DeMob - Equipment/Facilities Assume Demob at 75% of Mob and Setup. | | | | | | | | | | | |
| DeMob - Equipment/Facilities | | | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| TRANSPORTATION | | | | | 0 | 0 | 6,000 | 0 | 0 | 6,000 | |
| HANFORD: REMEDIATION | | | | | 2,472 | 204,359 | 21,908 | 148,042 | 1,883,000 | 2,257,309 | |

| SRC | LABOR ID | DESCRIPTION | BASE | OVERTM | TXS/INS | FRNG | TRVL | RATE | UOM | UPDATE | **** TOTAL **** DEFAULT | HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | B-EQOPRMED | Eq Oper, Medium | 26.27 | 0.0% | 0.0% | 0.00 | 0.00 | 26.27 | HR | 10/22/92 | 17.15 | 1152 |
| MIL | B-LABORER | Laborer (Semi-Skilled) | 23.14 | 0.0% | 0.0% | 0.00 | 0.00 | 23.14 | HR | 10/22/92 | 12.86 | 2409 |
| MIL | B-PLUMBER | Plumbers | 31.33 | 0.0% | 0.0% | 0.00 | 0.00 | 31.33 | HR | 10/22/92 | 23.92 | 921 |
| MIL | B-TRKDVRHV | Truck Drivers, Heavy | 27.24 | 0.0% | 0.0% | 0.00 | 0.00 | 27.24 | HR | 10/22/92 | 10.49 | 450 |

Fri 23 Oct 1992

U.S. Army Corps of Engineers
PROJECT GW1KUV: HANFORD: REMEDIATION - 1.4.10.1.1.23.01.2
1100-EM-1, G.W. REMED., SCHEME 3, OV OXIDATION
** CREW BACKUP **

TIME 10:27:55



| SRC | ITEM ID | DESCRIPTION | NO. | UOM | RATE | **** LABOR **** HOURS | COST | **** EQUIP **** HOURS | COST | TOTAL COST |
|---|---|---|---|---|---|---|---|---|---|---|
| | CODEG | 1 B-eqoprmed + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 360 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 0.50 | HR | 23.14 | 0.50 | 11.57 | | | 11.57 |
| MIL | B-EQOPRMEDF | Eq Oper, Medium | 1.00 | HR | 26.77 | 1.00 | 26.77 | | | 26.77 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| | TOTAL | | | | | 1.50 | 38.34 | 1.00 | 11.69 | 50.03 |
| | CODEJ | 2 B-laborer + 1 Backhoe Loader, 55 Hp | | | PROD = | 100% | | | CREW HOURS = | 735 |
| MIL | B-LABORER F | Laborer (Semi-Skilled) | 0.25 | HR | 23.64 | 0.25 | 5.91 | | | 5.91 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 2.00 | HR | 23.14 | 2.00 | 46.28 | | | 46.28 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 1.00 | HR | 26.27 | 1.00 | 26.27 | | | 26.27 |
| MIL | L50CS002 E | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 1.00 | HR | 11.69 | | | 1.00 | 11.69 | 11.69 |
| MIL | XMIXX020 E | Small Tools | 0.13 | HR | 1.39 | | | 0.13 | 0.18 | 0.18 |
| | TOTAL | | | | | 3.25 | 78.46 | 1.13 | 11.87 | 90.33 |
| | COEID | 1 B-trkdvrhv + 1 Dump Truck, 12 Cy | | | PROD = | 100% | | | CREW HOURS = | 450 |
| MIL | B-TRKDVRHVL | Truck Drivers, Heavy | 1.00 | HR | 27.24 | 1.00 | 27.24 | | | 27.24 |
| MIL | T40XX010 E | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.00 | HR | 2.63 | | | 1.00 | 2.63 | 2.63 |
| MIL | T50GM016 E | TRK, HWY, 3 AXLE, 41000 GVW, 6X | 1.00 | HR | 19.97 | | | 1.00 | 19.97 | 19.97 |
| | TOTAL | | | | | 1.00 | 27.24 | 2.00 | 22.60 | 49.84 |
| | MPLUE | 1 B-plumber + Small Tools | | | PROD = | 100% | | | CREW HOURS = | 461 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | B-PLUMBER F | Plumbers | 0.50 | HR | 31.83 | 0.50 | 15.92 | | | 15.92 |
| MIL | XMIXX020 E | Small Tools | 0.67 | HR | 1.39 | | | 0.67 | 0.93 | 0.93 |
| | TOTAL | | | | | 2.50 | 70.38 | 0.67 | 0.93 | 71.32 |
| | MPLUS | 2 B-plumber + 1- 14 Ton Crane, Hydraulic | | | PROD = | 100% | | | CREW HOURS = | 114 |
| MIL | B-LABORER L | Laborer (Semi-Skilled) | 1.00 | HR | 23.14 | 1.00 | 23.14 | | | 23.14 |
| MIL | B-EQOPRMEDL | Eq Oper, Medium | 0.50 | HR | 26.27 | 0.50 | 13.14 | | | 13.14 |
| MIL | B-PLUMBER F | Plumbers | 1.00 | HR | 31.83 | 1.00 | 31.83 | | | 31.83 |
| MIL | B-PLUMBER L | Plumbers | 1.00 | HR | 31.33 | 1.00 | 31.33 | | | 31.33 |
| MIL | C75GV001 E | CRANE,HYD,SELF,ROUGH TER,4WD,18 | 0.50 | HR | 28.66 | | | 0.50 | 14.33 | 14.33 |
| MIL | XMIXX020 E | Small Tools | 0.56 | HR | 1.39 | | | 0.56 | 0.78 | 0.78 |
| | TOTAL | | | | | 3.50 | 99.43 | 1.06 | 15.11 | 114.54 |

THIS PAGE INTENTIONALLY
LEFT BLANK

| SRC | EQUIP ID | DESCRIPTION | DEPR | CAPT | FUEL | FOG | EQ REP | TR WR | TR REP | TOTAL | UOM | ** TOTAL ** HOURS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MIL | C75GV001 | CRANE,HYD,SELF,ROUGH TER,4WD,18T | 9.20 | 3.48 | 3.62 | 1.0 | 9.89 | 1.20 | 0.18 | 28.66 | HR | 57 |
| MIL | L50CS002 | LDR,W/BH,WH,1.0CY FE BKT/24"DIP | 3.42 | 1.16 | 1.86 | 0.6 | 4.04 | 0.53 | 0.08 | 11.69 | HR | 1095 |
| MIL | T40XX010 | TRUCK OPT,REAR DUMP BODY, 12 CY | 1.15 | 0.28 | | 0.0 | 1.11 | | | 2.63 | HR | 450 |
| MIL | T50GM016 | TRK, HWY, 3 AXLE, 41000 GVW, 6X4 | 4.17 | 1.08 | 7.46 | 2.0 | 3.69 | 1.29 | 0.19 | 19.97 | HR | 450 |
| MIL | XMIXX020 | Small Tools | 0.46 | 0.17 | 0.13 | 0.0 | 0.57 | | | 1.39 | HR | 469 |

** PROJECT SETTINGS **

---

2ND VIEW COLUMNS
Quantity Column Width : 10

| | | | | | |
|---|---|---|---|---|---|
| Col Type | X | X | X | X | X |
| Rep Width | 0 | 0 | 0 | 0 | 0 |
| Title | (Unused) | (Unused) | (Unused) | (Unused) | (Unused) |
| Shadow | X | X | X | X | X |

DETAIL REPORT FORMATTING

PAGE OPTIONS
Page Break Levels : 4
Table of Contents Levels : 5

| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| ROW OPTIONS | Print Titles at Levels : | | Y | Y | Y | Y | Y | Y | |
| | Print Totals at Levels : | | N | N | N | Y | Y | Y | |
| | Print Notes at Levels : | Y | Y | Y | Y | Y | Y | Y | Y |
| | Print Unit Cost Row : | Y | | | | | | | |
| | Print Page Footer : | N | | | | | | | |
| | Show Cost Codes : | Y | | | | | | | |
| COLUMNS OPTIONS | Print Crew Id : | Y | | | | | | | |
| | Crew Output : | Y | | | | | | | |
| | Unit Cost : | Y | | | | | | | |
| UPB TITLES | No. of Levels to Print : | 0 | | | | | | | |
| | Bracket Titles With : | - : | | | | | | | |
| | Include titles Notes : | Y | | | | | | | |

** PROJECT SETTINGS **

ESTIMATE TYPE : A-Crews with Auto Reprice

SALES TAX : 7.80%

DATE OF ESCALATION SCHEDULE : 10/07/92

PROJECT DIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | H | L | E | M | U |
| Rep Width | 8 | 10 | 10 | 12 | 10 |
| Title | MHRS | LABR | EQUIP | MAT | OTHER |

PROJECT INDIRECT COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | O | U | P | B | U |
| Rep Width | 9 | 9 | 9 | 9 | 9 |
| Title | FOOH | HOOH | PROF | BOND | B&O TAX |

PROJECT OWNER COST COLUMNS

| | | | | | |
|---|---|---|---|---|---|
| Col Type | U | U | X | X | X |
| Rep Width | 12 | 12 | 0 | 0 | 0 |
| Title | S & A | CONTG | (Unused) | (Unused) | (Unused) |

PROJECT BREAKDOWN

| PROJECT ID | Length | Trail Sep | Level Title | 2nd View Order |
|---|---|---|---|---|
| Level 1 ID : | 2 | | Des/Actn | 0 |
| Level 2 ID : | 2 | | Feature | 0 |
| Level 3 ID : | 2 | | SubFeat | 0 |
| Level 4 ID : | 2 | | System | 0 |
| Level 5 ID : | 4 | | Bid Item | 0 |
| Level 6 ID : | 4 | - | Task | 0 |

Owner Cost Level : 1

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| Project Information Record | | | | | | | |
| 06 REMEDIAL ACTION | | | | | | | |
| | S & A | P | 15.00 | | | | |
| | CONTINGENCY | P | 0.00 | | | | |
| 06 01 MOBILIZATION & PREPARATORY WORK | | | | | | | |
| 06 01 01 MOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 01 01 01 TRANSPORTATION | | | | | | | |
| 06 01 01 01 01 Equipment Mob, Detailed List | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 01 04 SETUP/CONSTRUCT TEMP FACILITIES | | | | | | | |
| 06 01 04 01 TRAILERS AND BUILDINGS | | | | | | | |
| 06 01 04 01 01 Office Trailers - setup | | | | | | | |
| 06 01 04 01 01 01 Office Trailers - setup | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 DECONTAMINATION FACILITIES | | | | | | | |
| 06 01 04 02 01 Personnel Decon Facilities | | | | | | | |
| 06 01 04 02 01 01 Personnel Decon Facilities | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 01 04 02 02 Equip/Vehicle Decon Facilities | | | | | | | |
| 06 01 04 02 02 01 Equip/Vehicle Decon Facilities | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 50.00 | | | | |
| 06 02 MONITOR, SAMPLE, TEST, ANALYSIS | | | | | | | |
| 06 02 91 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 QA/Safety Monitoring | | | | | | | |
| 06 02 91 01 01 01 QA/Safety Monitoring | | | | | | | |
| | S & A | O | | | | | |
| | CONTINGENCY | P | 20.00 | | | | |
| 06 06 GROUNDWATER COLLECTION & CONTROL | | | | | | | |
| 06 06 01 EXTRACTION AND INJECTION WELLS | | | | | | | |
| 06 06 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| 06 06 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |

** PROJECT SETTINGS **

OTHER REPORT FORMATTING

COLUMN TITLES FOR SUMMARY REPORTS

Column 1 FOOH : JOB OFFICE OVERHEAD
Column 2 HOOH : HOME OFFICE OVERHEAD
Column 3 PROF : PROFIT
Column 4 BOND : PERFORMANCE BOND
Column 5 B&O TAX : B & O AND OTHER TAXES

Column 1 S & A : S & A
Column 2 CONTG : CONTINGENCY
Column 3 (Unused) :
Column 4 (Unused) :
Column 5 (Unused) :

STANDARD COLUMN WIDTHS

Quantity Columns : 10
Total cost Columns : 12
Unit Cost Columns : 12

SUMMARY FEATURES

Round Totals Column : T-Tens
Contingency Notes : Yes
Show Project Totals : Yes

REPORT SELECTION

Project Settings : Y
Contractor Settings : Y
Link Listing : N

Measurement Units : Original

| | REPORT FORMAT TYPE | | | FOR LEVEL (S) |
|---|---|---|---|---|
| | Direct | Indirect | Owner | 0 1 2 3 4 5 6 |
| Detail : | Y | | | |
| Project : | N | Y | Y | N N N N N Y |
| Contractor : | N | N | | N N N N N N N |
| Division : | N | N | N | Y N N N N N N |
| System : | N | N | N | Y N N N N N N |
| 2nd View : | N | | | |
| Crew : | Y | | | Y N N N N N N |
| Labor : | Y | | | |
| Equipment : | Y | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 21 DEMOBILIZATION | | | | | | | |
| 06 21 04 DEMOB OF EQUIPMENT & PERSONNEL | | | | | | | |
| 06 21 04 01 TRANSPORTATION | | | | | | | |
| 06 21 04 01 01 DeMob - Equipment/Facilities | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |

** OWNER SETTINGS **

| | | AMOUNT | PERCENT | *ESCALATN DATE* BEGIN | END | *ESCALATN INDEX* BEGIN | END |
|---|---|---|---|---|---|---|---|
| 06 06 01 01 01 01 WELL DRILLING & CONSTRUCTION | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 02 SUBSURFACE DRAINAGE | | | | | | | |
| 06 06 02 01 INJECTION OF TREATED GROUNDWATER | | | | | | | |
| 06 06 02 01 01 Sump & Discharge Pump | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 02 01 02 Recharge Trenches | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 30.00 | | | | |
| 06 06 07 PUMPING/COLLECTION | | | | | | | |
| 06 06 07 04 GROUNDWATER PUMPING F/ REMED ACT | | | | | | | |
| 06 06 07 04 01 Pumping System to A.S./UV Oxid | | | | | | | |
| 06 06 07 04 01 01 Pump, and Control valves | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 06 07 04 01 02 Manhole for Valving | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 25.00 | | | | |
| 06 12 CHEMICAL TREATMENT | | | | | | | |
| 06 12 01 OZONE/HYDROGEN PEROXIDE/UV OXID. | | | | | | | |
| 06 12 01 05 MOBILIZATION/SETUP/TESTING | | | | | | | |
| 06 12 01 05 01 Purchase, Mob, Setup, & Testing | | | | | | | |
| 06 12 01 05 01 01 Purchase of UV Oxidation Unit | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 12 01 05 01 02 Purchase Reverse Osmosis Unit | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 20.00 | | | | |
| 06 12 01 05 01 03 Mob, Setup & Testing | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | P | | 50.00 | | | | |
| 06 12 01 10 OPERATION (LONG TERM-OVER 3 YRS) | | | | | | | |
| S & A | O | | | | | | |
| CONTINGENCY | O | | | | | | |

THIS PAGE INTENTIONALLY
LEFT BLANK

** CONTRACTOR SETTINGS **

| | | AMOUNT | PCT | PCT S | RISK | DIFF | SIZE | PERIOD | INVEST | ASSIST | SUBCON |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AA REMEDIAL GENERAL CONTRACTOR | | | | | | | | | | | |
| JOB OFFICE OVERHEAD | P | | 15.00 | | | | | | | | |
| HOME OFFICE OVERHEAD | P | | 5.00 | | | | | | | | |
| PROFIT | P | | 8.00 | | | | | | | | |
| PERFORMANCE BOND | C | | | (Class: B) | | | | | | | |
| B & O AND OTHER TAXES | P | | 1.00 | | | | | | | | |